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KBN
- 4 JAN. 1991

The weekly information newsletter for the UNIX™ community worldwide



London, December 31 1990 - January 4 1991

Number 314

VENDORS QUEUE FOR 40% STAKE IN UNIX SYSTEM LABS

AT&T Unix System Laboratories president Larry Dooling last week in an interview with Unigram.X pooh-poohed published reports that three Japanese companies, Fujitsu, NEC and Toshiba, have each agreed to buy a stake in USL, with shares ranging from 1% to 4% and the prices to be paid quoted at between \$7m and \$30m. The reports, based on an article that appeared in Japan's leading financial paper, *The Nihon Keizai Shinbun*, ran in the December 20th issue of the *Wall Street Journal*. An English translation of the Japanese story, which claims upwards of 10 companies are negotiating for around 40% of USL, also names Unisys, ICL and Amdahl as likely participants in the long-expected private offering, an item missed by the *Journal* and the *Dow Jones*. Fujitsu of course, reckoned as more strategically dependent on Unix than either NEC or Toshiba, owns a significant part of both ICL and Amdahl. Dooling, however, dismissed the story, particularly the numbers given, as unattributed and hearsay. He declined to comment on the status of the sellout, its participants, or the current timetable, citing non-disclosure agreements. He did manage to quote national baseball hero Yogi Barra's famous line about how "it ain't over until it's over", and gave the impression that, after months of talks with at least a score of potential US, European and Far Eastern investors, nothing is absolutely firm as yet.

Observers of the Japanese press doubt that the story would have been made up out of whole cloth. What would be more surprising would be if Fujitsu, NEC and Toshiba, which have been actively courted by AT&T as possible investors since at least September (UX No 302), were not involved in taking a stake. Besides, Japanese companies and particularly government agencies like MITI are prone to leaking stories, sometime about things they want to happen. In this context, it is conceivable that the Japanese, bored with AT&T's shilly-shallying, are trying to move things along. The numbers, which Dooling would have us be particularly leery of and which - if accurate - would value all of USL somewhere between \$700m and \$750m, a stratosphere almost double anything heard before, might be explained as a combination of the money to be paid to AT&T for its shares plus working capital to fund a restructured USL.

DEC TO PAY \$230m FOR A 65% STAKE IN MANNESMANN KIENZLE

Just before Christmas DEC emerged as the surprise partner for Mannesmann AG in its troublesome Mannesmann Kienzle Datensysteme, plus the Procad GmbH and PCS GmbH divisions of Mannesmann Kienzle. DEC has agreed to invest \$230m for a 65% stake in an new company to be formed out of the loss-making computer businesses, which aim mainly at the small systems and manufacturing markets. Mannesmann will retain 35% of the new company. Headquartered in Villingen, Germany, it will be called Digital-Kienzle Computer Systeme GmbH and Co KG, and the partners hope to have it up and running as of January 1 - but regulatory approvals may delay that. The \$230m is its largest external investment in DEC's 33-year history, so it must do a lot to enhance the company's position in the German market. Mannesmann acquired Kienzle, a sleepy Black Forest family firm that made visible record computers and taximeters, in 1982. It is now the second-largest domestic computer supplier in Germany. Digital-Kienzle will have sales offices in 28 German cities and in other European countries and claims to have one of the premier Unix software development organisations in Germany. The West German subsidiary of DEC had fiscal 1990 sales of \$835m and in 1989, Kienzle had sales of \$448m. Mannesmann had been talking to Fujitsu Ltd, but the Japanese company is decided simply to settle for ICL.

1991 - YEAR OF THE USER GROUPS? - POSC AND X/OPEN

"CLOSE TO TYING THE KNOT"

At the same time as the organisation of rebel Unix oil companies - the Petrotechnical Open Software Corporation - was, as expected, (UX No 307), formally introducing itself to the world, chief executive Dan Turner last week revealed that it is working on a reciprocal agreement with the X/Open group which will likely see POSC become a member of X/Open's User Council and X/Open become a member of POSC. Although X/Open maintains that "nothing formal has been signed," there are numerous indications that discussions about a broad alliance between the various user organisations is now advanced. X/Open readily admits that itself and POSC - along with other formative bodies representing corporate open systems users like the User Alliance for Open Systems, perhaps better known as the Houston 30 - share generic concerns, and that there is no reason for them all to be running round the world trying to accomplish the same tasks and preaching the same message. X/Open says it would like to see some kind of common grouping emerge - albeit under the auspices of its own organisation. Although the User Alliance joined the corporation of Open Systems a couple of months ago in a move which was interpreted by the US press as a snub to X/Open's vendor-dominated set-up, (UX No 303), there is quiet concern that now the user groups have declared themselves, they have to find horses for their riders - the need for a common, strategic platform is becoming essential. It seems a good bet that if any these wishes are to be realised, then the forthcoming Uniform show in Dallas, Texas, where representatives of all the groups will be present, would be as good a place as any for it to happen. POSC, now in start-up mode, says its founder members - BP Exploration, Chevron, Elf Aquitaine, Mobil Exploration and Producing and Texaco - are pressing for alliances with other groups.

RS/6000 DESIGN CHIEF FORMS HAL TO BUILD UNIX RISC LINE

Andrew Heller, head of the division at IBM that developed the RS/6000, seems to have been one of those people whose faces don't fit at the company: he was stripped of his position as general manager of the workstation development group two years ago, and left the company the following March. Now he is ready to go head-to-head with IBM in some of its core markets such as airline reservation systems, founding Hal Inc - that name is likely to bring a stream of complaints from prior users - in Campbell, California, and the company is designing its own microprocessor - Risc presumably - around which to build high-performance Unix workstations and transaction processing machines. Heller claims that 30-employee Hal has financial backing and marketing support in place.

MARKET ROUNDUP

Sony Microsystems has launched a new version of its News-OS version of Unix: based upon Berkeley System Distribution 4.3 it includes X-Windows 11.4, OSF/Motif/1.1, NFS 4.0, PC File System and Sony Network Management Protocol - NewsOS runs on Sony's Mips Computer Systems' Risc-based workstations.

Yates Brothers Wine Lodges plc has ordered an DRS 6000 level 40 system from ICL worth £200,000 running Online Computer Services Ltd's Brewmaster software developed specifically for the brewing and drinks industries.

IS Solutions, Twickenham, Middlesex, has a new peripherals server called SPANS - Storage Peripherals Advanced Network Server - it can access optical drives, digital audio tape and magnetic disks via NFS, and is available as a sub-system for workstations and servers, no prices given.

Integral Technology Ltd, Alton, Hampshire, has announced new software for Sun Microsystems workstations which allows up to ten external viewdata pages to be shown on screen at the same time: WorkStation runs under Open Windows and supports the Prestel viewdata format.

Informix says its complete range of software will be available on DEC's recently announced multi-processing 80386-based SCO Unix systems by the end of the year: meanwhile its graphical spreadsheet, Wingz, is now available for the Mips Computer Systems Risc-based DECstation line, it costs £700.

Milton Keynes-based Vectagraph Ltd, has become sole distributor in the UK and Ireland for SunRiver Corp's CADSystem: Vectagraph has recruited dealers like Instagraphic, Mipac, Psychrotech and Abcad to market the fibre-optic-based system which runs under Xenix.

Cognos Software's PowerHouse fourth-generation language is now available on Data General's range of 88000-based AViiON workstations: a version for DEC's Ultrix Unixlike will be out by the middle of next year, the company says.

In the UK, Wembley, Middlesex-based Information Builders has released a Unix V.4 version of its Focus fourth-generation language for Intel 80386 and 80486-based systems, it is priced at £1,950.

Cyberscience Corp, Hoddesdon, Hertfordshire - formerly Cybertek Software - has introduced CQCS, its fourth-generation application development environment and report writer on Unix, DEC and IBM platforms: CQCS was first introduced on Data General's AOS/VS and has interfaces to most popular Unix, VMS and MS-DOS databases.

Derby-based Datapath has launched a new colour graphics controller board based upon Intel's i860 and Texas Instruments' 34101 processors: Merlin is claimed to deliver 300,000 vectors per-second and costs £5,000 - meanwhile Datapath's Q2000 colour graphics controller board has been snapped up by Rediffusion Simulation, Crawley, Surrey, which has ordered ten of the 8Mb devices which cost £14,000 each.

The City Link Transport Holdings Ltd courier group has developed a parcel tracking and transaction processing based upon the Progress 4GL: CLAN - City Link Automated Network - incorporates 230 terminals and 130 printers on a wide area network that supports 50 depots across the UK with a 1Gb database that grows at 8Mb a day in size.

Apple Computer Inc is now licensing its Apple Terminal Services protocols to third-party developers and corporate computer departments: the protocols are based on Apple's current MacWorkStation product and consist of commands defined by Apple that pass between a mainframe computer and a personal computer so that developers can create mainframe or minicomputer programs that display and retrieve data on remote graphical personal computers; under the licence, developers can create and sell personal computer software for MS-DOS micros or Unix stations that receives the ATS commands from a mainframe and displays the data on the micro screen.

ACT Logsys Ltd, the public sector and systems integration side of the ACT Group Plc, signed an agreement last week with Open Systems Interconnection software specialist Retix UK Ltd, subsidiary of Santa Monica-based Retix Corp: Logsys signed because it wants faster access to open systems technologies, which it needs to integrate into installations for the public sector market.

The French government's policy of backing Groupe Bull SA to the hilt regardless of the losses it racks up does not impress Compagnie Generale d'Electricite SA chairman Pierre Suard, who chose his currency carefully when he told French daily La Tribune de l'Expansion that he wouldn't invest "a kopeck" in Bull.

The Colorado Springs, Colorado-based Cray Computer Corp spin-out from Cray Research Inc, has just won its first order for the forthcoming 16-processor Cray 3: the \$29m machine will ship in 1992 and the customer is the National Energy Research Super-computer Center at the Lawrence Livermore National Laboratory in Livermore, California, which put in a Cray-2 in April and has just accepted it, enabling the firm to book its first revenue - some \$13m, this quarter - the GaAs Cray-3 is being designed to deliver 16 GFLOPS peak.

Sun Microsystems Inc has a pact to supply the Ohio-based Air Force Institute of Technology with Sparcstation products worth around \$7.4m over the next two years: the machines - both servers and workstations - will be used to support Air Force education and research conducted by the faculty and students.

Finland's Agricultural Data Processing Centre in Helsinki has signed up for Hewlett-Packard's Vectra 486 personal computers running SCO Unix to analyse and match genetic traits in dairy cows: the aim is to breed a new strain of cattle which produce low-fat, high protein milk.

Harris Adacom Corp, Dallas, Texas, is developing IBM 3270 connectivity software for Network Computing Devices Inc's X-terminals allowing users to display data from an IBM mainframe in one window, alongside windows containing data from workstations and other devices in another: Harris will market the terminals with the new software from the second quarter of next year, following an agreement with the Mountain View, California-based firm - the deal is worth \$2m to NCD over the next two years.

Aberdeen University is installing a range of Sun Microsystems servers and workstations worth £250,000 to provide a central computer service: the new systems will integrate with the university's existing Sun kit, partially replacing a Bull HN mainframe.

Hoping to make in-roads into the business community, Sun Microsystems says that six commercial software vendors are in the process of, or have completed porting their accounting and financial management packages to its Sparc-based systems: in addition to the six - State Of The Art Inx, SBT Corp, Oracle Corp, MCBA Inc, FourGen Software Inc and Armor Systems Inc - Sun says Ask Computer Systems Inc and RealWorld Corp are also working on products for the Sparc.

Unix vendor Silicon Graphics and DEC-to-Unix connectivity specialist Accelr8 Technology are teaming up to jointly develop tools that will allow batch-processing tasks to be sent from DEC VMS systems to Silicon Graphics' Mips Computer Risc-based multi-processing workstations: due in March, the tools will compete with plans that DEC has to develop similar tools for integrating VMS and Ultrix jobs.

CGI Informatique, Pearl River, New Jersey, has launched its first Unix application, for Hewlett-Packard Co's HP 9000 and HP 3000 systems: Paclan/X is a computer-aided software engineering package for producing Cobol on-line transaction processing applications and is available from the second quarter of 1991, on the 9000 series, on the 3000 systems from the end of the year - no prices given.

INTEL SET TO REVEAL RE-DESIGNED CISC, RISC AT SOLID STATE CONFERENCE

At February's International Solid State Circuits Conference in San Francisco, Intel Corp is expected to reveal details of a re-designed version of its CMOS 80486 Cisc processor built with three layers of metal and capable of running at 100MHz. The fastest 80486 currently clocks at 33MHz, with 50MHz versions expected during next year, and reports from the US suggest that samples of the next-generation 80586 part could appear late in 1991, implying system-level products would not appear before 1992. We've been hearing about an enhanced version of the 80860 Risc processor - or the i870 - for some time now, (UX No 259), and the same reports suggest the part, which is expected over the next six months, will include new multi-processing and parallel processing features. However, other sources reckon the new part will likely be incompatible with the i860.

NOW GERMAN DEFENCE MINISTRY SPECIFIES X/OPEN COMPLIANCE

The German Ministry of Defence has finally set aside its misgivings over the security drawbacks of open systems and come out in favour of standardisation. According to *Computerwoche*, any company now wishing to sell computer systems to the Defence Ministry will now have to prove that its products meet the specifications of the X/Open Portability Guide Release 3. The local authorities in Madrid are all set to follow the example of many European authorities and government bodies, too, and will soon only be installing equipment that aligns to the seven portability guidelines dictated by the X/Open Group Ltd.

ARCHE, CHIPS AND TECHNOLOGIES REVEAL NEW MULTI-PROCESSORS

Arche Technologies Inc and Chips and Technologies Inc have jointly developed an Intel 80486-based multi-processing system which will compete head-on with the likes of Compaq's SystemPro and Sun Microsystems workstations. The system will use Chips and Technologies' M/PAX multi-processing architecture and will come with up to six processors and a top performance of 70 MIPS running the Santa Cruz Operation/Corollary Inc multi-processing version of SCO Unix. With up to 256Mb RAM and 1.6Gb disk, it will have 14 slots - six of them EISA-compatible - and is to be marketed by Arche. It's due in the second quarter of next year.

PARALLEL VIDEO SUPERCOMPUTER TO GET BOOST FROM FORTRAN

Just over a year ago, (UX No 256), the David Sarnoff Research Center Inc, based in Princeton, New Jersey, announced that it had developed the "world's first" video supercomputer, called the Princeton Engine - it has now licensed Wakefield, Massachusetts-based Compass Inc's Compiler Engine Architecture and Framework in order to develop a Fortran compiler system that executes on an Apollo workstation, the host machine for the Princeton Engine, and generates code to be executed on the Princeton Engine. The Princeton Engine is currently being used in a number of advanced research projects, including data compression, multi-spectral analysis, data visualisation and neural networks. It is also being considered for anti-submarine warfare and space surveillance applications. The Fortran compiler adds a high-level language programming tool to the present set of graphical programming tools for the Engine. The Compass Compiler Engine will take programs written in Compass Fortran, which consists of Fortran 77 with array extensions from the proposed ANSI Fortran 90 standard, and produce 8-Code, Compass' generic single instruction multiple data assembly language. The 8-Code produced in the Compiler Engine will then be translated into native instructions to be executed by the Princeton Engine. Sarnoff developed the Princeton Engine to support its work for Thomson Consumer Electronics. It enables designers to program directly at the circuit block-diagram level, with real-time processing of video sequences; key benefits for video over other massively parallel machines are claimed to be input-output bandwidth, support for a high-level graphical programming environment, and the greater degree of real-time user interaction.

UNISYS TO DISBAND SYSTEMS INTEGRATION UNIT NEXT MONTH...

It always looked a forlorn move when ravaged hardware manufacturers tried to turn their hand to systems integration, and one of the noisiest entrants into the field, Unisys Corp, has already decided to disband its systems integration unit next month, only a year after forming it. The company says that it will continue to offer integration and facilities management - but the support services division is going back into the Government Systems Division in McLean, Virginia, while the commercial side of the Systems Management Group will be folded into the Customer Technical Services Group in Blue Bell, Pennsylvania. The decision to disband the unit will lead to a major shake-up, with some 1,700 employees to be reassigned under the new arrangements.

...AS ORACLE SETS PLANS TO SELL ITS SYSTEMS INTEGRATION ARM?

Following the news that Oracle Corp's systems integration unit Oracle Complex Systems was unlikely to meet its revenue targets, (UX No 310), *Computer Systems News* believes that Oracle has hired advisers to investigate selling the unit. However, it may have difficulty finding a buyer as a number of contracts have reportedly run into trouble because of poor delivery or technical difficulties. The paper quotes the example of the \$7m contract for an image processing system with the State of New York Department of Social Services, which Oracle itself has described as "very complex" and a challenge.

DATA GENERAL LETS OBJECT-ORIENTED HYPERDESK GO IN BUY-OUT

Data General Corp is aiming to accelerate its recovery by divesting what it regards as non-strategic activities, and the first to go - in a management buyout - is the three-year effort to develop a distributed, office-oriented object management system under the name HyperDesk. A new company, called HyperDesk Corp, has been formed to buy the fruits of the development, and it will use Data General's AViiON Unix machines as one of the first development machines for the forthcoming product. Data General justifies its decision in part by saying that for software to become an industry standard, it has to be open and run on a variety of machines. The first product from the new company is expected next year. There are understood to be two further activities to go in buy-outs, one in the US and one in the UK - presumably related to the company's European Communications Competence Centre in Cambridge.

ALTOS SIGNS UP FOR ATLANTIX ACCESS

Altos Computer Systems has become the first major vendor to sign up for Atlantix Corp's Axxess - a Lan Manager-compatible local area network which supports Unix, Xenix, MS-DOS, OS/2 and Macintosh systems - in an OEM deal due to be revealed over the next couple of weeks. Axxess, which runs under SCO Unix on Intel 80386 and 80486-based personal computers also integrates with existing Novell, TCP/IP, Lan Manager and NetBIOS networks. According to Doug Beard, director of marketing at the Boca Raton, Florida-based outfit, both Sun Microsystems and IBM are lining up to do ports to their respective SunOS and AIX Unix variants.

MOTOROLA PUTS ITS CASE FOR THE 88000 BEING THE LONG-TERM WINNER IN THE RISC RACE

By John Abbott

Motorola Inc's Microprocessor Products Group has been revealing a little more of its future product strategy in an attempt to quell the perception that its late entry into the RISC marketplace has left it with little chance of catching up with the currently dominant competitive offerings from Sun Microsystems Inc and MIPS Computer Systems Inc. Details of Motorola's second generation RISC, the 88110, first emerged at October's Microprocessor Forum held in Burlingame, California, along with news of a new family of embedded RISC processors, the 88300 family. Since then, 88000 system architect Keith Diefendorff has discussed the chip at the 88open Consortium's General meeting in Frankfurt last month, and 88000 marketing manager Jeff Nutt has headed a press tour through the US and Europe.

Due out some time next year, the 88110 is a highly integrated version of its predecessors, combining the functionality of the 88100 CPU and 88200 cache and memory management units into a single chip performing at three to five times the speed. Also included on the new chip will be multiple integer, floating point and graphics execution units to increase the parallelism within the chip - although just how many units there will be is not yet revealed. There will also be an 80-bit wide internal data path, improved handling of instructions sustaining more than one instruction per clock, and branch acceleration to sustain continuous execution. The new chip will integrate around 1.4m transistors - some RISC - and will run at a higher (currently unspecified) clock rate than the current maximum of 33MHz.

Sun's need

According to Jeff Nutt, Motorola's late entry into the RISC marketplace is now turning to its advantage. (Of course, had it satisfied Sun's need for a RISC processor when first asked years ago, it would likely have eliminated its major competition and continued to dominate the workstation market). Nutt claims that Motorola learned from the early RISC implementations, and produced a flexible architecture designed to maximise the lifespan of the chip. Thus Motorola will find it easier to add performance as others begin to push their architectures to the limits. Diefendorff says there are far too many players in an immature market (200,000 units shipped in 1989), and that the fall-out will occur in 1992, with strong silicon manufacturers emerging as the winners. In order to extend its architecture to cope with future requirements, Motorola has included room for up to eight Special Function Units to provide for clean integration of additional functionality.

In the 88100, a Special Function Unit was used to provide an integrated floating point capability. In the new chip, new functions and instructions for graphics have been added in the same way. Within the Special Function Units, any number of multiple execution units can be added, to increase parallelism. Nutt describes the general approach of the 88000 as a symmetrical superscalar, which reduces the load on the compiler and helps with compatibility issues. Even further into the future, Motorola hints that the third generation 88000 will have more execution units, a wider data path, and more parallelism, and will approach speeds of 100MHz, according to Motorola. Remaining unconvinced by ECL, Motorola will implement the third generation part in BiCMOS, the CMOS process that uses bipolar circuitry for performance-critical functions.

Assuming a quadrupling of performance by each new generation, the 88000 family will be single chip, one million transistor parts clocked at 300MHz by the late 1990s, and Diefendorff said that there appeared to be no reasons why Motorola could not achieve a throughput exceeding 4,000 MIPS by the year 2000. Brave words. Coupled with the technology itself, Motorola hopes that the helping hand it has given the 88open Consortium in setting up a software support group for 88000 users will also help it win support. 88open appears to have emerged as the most successful software consortium to group round a particular architecture: it popularised the whole area of binary and object compatibility and applications binary interfaces among RISC vendors, encouraging AT&T Co's initiative to establish applications binary interfaces for Unix System V release 4. 88open has a 500 page catalogue of software, the 88open sourcebook, filled with what it says are all real, all available products. And it has steamed ahead with the most advanced conformance testing software suites, which many other companies are now interested in licensing. In contrast, Sparc International has had a very confused history to date, and until the liberation of Unix System V.4, Sparc users are closely tied in to operating system, networking and user interface software that comes from Sun itself, although the licensing can be done through Interactive Systems Corp. Synthesis Software, the MIPS software initiative, ended in failure because MIPS wanted it to make a profit, according to 88open president Tom Mace, and even now MIPS has no application binary interface strategy in place.

Mass860

And Mass860 group backing Intel Corp's 80860 currently appears to be a very informal operation, with no clear mission. But the group is in dire need of a volume reseller. Nutt claims that it takes time for such suppliers to come out of the woodwork, and that they will duly appear over the next few years. Currently hardware manufacturers such as Bolt Beranek & Newman Inc, Cetia SA, Data General Corp, Dolphin Server Technology A/S, Encore Computer Corp, Everex Systems Inc, Motorola Computer Systems, Norsk Data A/S, Omron Corp, Philips NV, Quotron Systems Inc, Sanyo-Icon Inc and Unisys Corp have declared for the 88000, along with embedded control manufacturers, comms manufacturers, board manufacturers and the military and avionics market, including Harris Corp and Europe's Thomson-CSF SA. Four hardware manufacturers still remain committed but undeclared. But the speculation remains about Apple Computer Inc's RISC intentions, still not entirely clear - will it go for servers of workstation products if it eventually does use the 88000?. Compaq Computer Corp and Ing C Olivetti & Co SpA have been mentioned as two majors that have not so far announced their RISC intentions, but Motorola will face stiff competition for the business.

DEC REVEALS OBJECT-ORIENTED DEVELOPMENT SCHEMA...

Another contender has entered the fight to gain control over the development of object-oriented technology - DEC has unveiled an Application Control Architecture - described as both a tool and a set of specifications - that uses object-oriented technology to simplify the development of distributed applications. The specification manual will be available in January and DEC claims that the Architecture extends the LiveLink facility of its Compound Document Architecture to all applications and data via a "consistent" interface, as well as enabling users to create new applications or "tasks" from existing applications. DEC clearly intends to get a head start over rivals IBM and Microsoft - see below - and notes that "this is an emerging technology area where no existing standards have been widely adopted" - but is this any way for a member of the Object Management Group to behave? After all Object Management Architecture was itself unveiled only a week ago, (UX No 313).

...AS MICROSOFT UNVEILS OBJECT LINKING, EMBEDDING SPEC

Acceptance that object-oriented programming is likely to be the wave of the immediate future is growing fast, and Microsoft Corp is pushing the movement along with the announcement of its preliminary specification for object linking and embedding, which it claims provides graphical applications developers with a powerful new set of capabilities for integrating information created by different applications. Calling it the OLE specification, the company says that developers can access the new capabilities by making simple extensions to existing graphical applications that run under Windows 3.0, OS/2 Presentation Manager and Apple Macintosh System 7.0. Its backers hope that Object linking and embedding will prove an open, industry-wide specification; it was developed by the Microsoft applications group, incorporating input and contributions from Lotus Development Corp, Aldus Corp, WordPerfect Corp and Micrografx Corp. The specification has been made available in preliminary form to some 200 software developers, and moves on from the static Windows clipboard and dynamic data exchange linking capabilities. The new OLE system requires that graphical applications are written for Windows, OS/2 Presentation Manager or Macintosh System 7.0, and incorporate the OLE specification. OLE library subroutines are planned to become a standard part of the next Windows release - support for Mac System 7.0 and OS/2 Presentation Manager is set for mid-1991.

LAWSON ARRIVES IN UK AIMING BUSINESS SOFTWARE AT AS/400, RS/6000 MARKETS

Lawson Inc, a privately-held Minneapolis-based software house is opening its first offices outside the US in an attempt to crack the European mid-range AS/400 and Unix financial, distribution and personnel software markets. The office, which opened in the UK last week, is headed by Barry Fuller, and is based in Chertsey, Surrey. Lawson's business applications are available in the US for IBM System/38 and AS/400 systems, and are due to be launched in Europe for the RS/6000 next year. Lawson, a 15-year-old company with \$30m turnover in the US, and offices in New Jersey, California, Texas and Florida, has 325 staff and a customer base of 1,600. The UK subsidiary is expected to attain £1m sales in its first fiscal year and a continental office will open in early 1992.

UNISYS CONTINUES TO INVEST TO

MAKE CTOS MORE OPEN AND COMMUNICATIVE
NCR Corp has a point when it suggests that the record of acquisitions in the computer business has not been a very impressive one, and one of the craziest was the acquisition by Unisys Corp of Convergent Inc back in the days when Michael Blumenthal was following a bull in a china shop race for growth by acquisition. As Convergent already did something like 40% of its business with the Burroughs side of the house, one and one added up to a lot less than two, but more incomprehensibly, it was made at a time when it was already clear that proprietary operating systems were well past their sell-by date, so that to take full charge of yet another one and forlornly try to turn it into an industry standard was Quixotic in the extreme. Nevertheless, Unisys is still doggedly struggling on with it, and it is now to offer improved interoperability between the Convergent CTOS operating system and Unix and MS-DOS-based systems. Computer Systems News says that CTOS will support Sun Microsystems' Network File System which will enable it to share applications with systems running under MS-DOS and Unix, as well as applications developed for Microsoft's Windows 3.0 graphical environment. Unisys is also said to be planning a distributed systems management product that will enable the management of networked CTOS workstations from a central hub. CTOS NFS is tipped for the first half of 1991, and the US trade weekly says that prices will range between \$1,500 and \$3,000 per server. Unisys has also announced enhancements to its TCP/IP and VT220 terminal emulation support. CTOS TCP/IP 2.0 will provide a Unix-based socket library and the CTOS VT220 2.0 will provide faster performance and file transfer functionality. Both are scheduled for first quarter availability, priced at \$1,500 to \$3,000 and \$750 to \$1,500 respectively. Improved MS-DOS integration capability is provided by CTOS PC Emulator Release 4.1, and it will enable users to run Windows software packages and CTOS for more critical network applications. That product is available now and costs \$435 per server plus \$529 per workstation. The ClusterShare networking environment now costs between \$630 to \$945 per server, and a personal computer ClusterCard offering transmission speeds up to 3.7Mbps costs \$650, with a Micro Channel version slated for the first quarter.

UNIFORM PREVIEW

Following implementations for Sun Microsystems, DEC and IBM platforms, Berkeley, California-based MT Xinu will introduce a binary version of Carnegie-Mellon's Mach operating system for Intel AT-bus 80386-based systems at the Uniform show in Dallas in a few weeks. MT Xinu claims the release will for the first time give 386 users access to Mach and the Berkeley System Distribution 4.3 Unix interface without the need for an AT&T source-code licence.

Also at Uniform, to cope with the rash of new multi-processing Unix systems that can support hundreds of users, Equinox Systems Inc, Miami, Florida, is introducing the Megaplex-96. Up to eight of the input-output subsystem boards can be installed in a computer, supporting up to 768 users via multiple 24-port multiplexers. The Megaplex-96 expands upon Equinox's Megaport-12 and 24 offerings - each use proprietary Risc-type communications processors. With one board the Megaport-96 costs \$2,400, additional cards cost \$1,500.

Meanwhile Pencom Software, Austin, Texas, will release No Problem!, a problem management system to report and log difficulties during the development, testing and support of software on IBM's RS/6000. No Problem! is priced at \$2,000 and is also available for Motorola 88000-based platforms. Pencom also plans to port X-Windows 11.4 and OSF/Motif to the NeXT Computer System. co-Exist will run under the NeXTstep interface and starts at \$150, or \$300 with Motif.

NCR SHAREHOLDERS - CAUGHT BETWEEN THE DEVIL AND THE DEEP BLUE SEA?

by *Tim Palmer*

The AT&T Co bid for NCR Corp has turned the spotlight back onto that thorny issue, shareholder rights. In theory the board and management of a public company work solely for the benefit of the shareholders, but it is putting an intolerable burden on honourable men who sincerely believe that a proposed acquisition will be disastrous for all that they have built up within the company to remind them that they are obligated to recommend the bid.

In a piece in the *Wall Street Journal*, a money manager, Steven Cohen, wrote a trenchant piece headlined "Hey NCR - we're the shareholders, you work for us", bemoaning the fact that a whole raft of state and federal regulations and corporate manipulations were now in place to frustrate hostile bids, and concluding that "shareholders, at least, ought to be asking searching questions about a system that allows Mr Exley to simply declare that NCR is "not for sale." Those that regard rampant capitalism, red in tooth and claw, as an unmitigated evil, will cite the AT&T-NCR case as a prime example of the damage that the system regularly causes. Those that are convinced that the capitalist system is the least evil and most beneficial of many evil systems will nevertheless feel that there are instances where the national interest and the interests of many thousands of directly affected individuals are set at nought by capitalism in action. The case for the NCR defence is that there are very few really successful and well-run computer manufacturing companies left outside Japan, that NCR is one of those few, and that AT&T, with the best will in the world, will somehow manage to wreck what is in the process of being created, and that therefore the acquisition would be a Bad Thing.

All companies are not the same

Where does that leave the shareholders, nominal owners of the business, who can be sure that if the AT&T bid fails, the 88% premium on the share price before its interest became known will vanish like snow in summer, and that without jeopardising its future, there is no way that NCR can immediately realise for shareholders that which it believes is the fundamental value of what is being built up? But doesn't Mr Cohen protest too much? Should the desires of shareholders who are not simply diligent but sheerly greedy really be satisfied at the expense of every other interest? All companies are not the same. Some are run well, some badly. Some are lucky, some unfortunate. Each has its own corporate ethos. NCR has for years made it clear that it is run as far as the board can contrive in the interests of what it regards as all its stakeholders - shareholders, employees present and past, customers. NCR has made no secret of this philosophy - it has stressed it with almost every corporate public pronouncement. That being that case, wouldn't it be fair to describe anyone that bought NCR shares purely in the hope of a big capital gain from a hostile takeover as a little stupid, a little negligent in not researching the company and its ethos more carefully? It has been clear for years that if NCR received an unwelcome bid, it would do all it could to frustrate it. And anyway, Mr Cohen, an 88% premium on the price a couple of months ago is a pretty neat windfall. For about a week before Christmas, the shares were trading at above \$90 a share. If you think that NCR's board is so delinquent, why didn't you simply sell your NCR shares in the market and pocket the profit? Even at the height of the 1980s' feeding frenzy, one occasionally heard the odd smug trader happily patting his wallet over his latest coup and muttering "anything more would be greedy".

ADA DEVELOPMENTS: TELESOFT STEPS IN TO SUCCOUR USERS OF READY SYSTEMS' RTADA...

TeleSoft Corp, San Diego has several options for users of Ready Systems' RTAda which will enable them to migrate to TeleSoft-supported real-time Ada products, since Ready Systems is to stop marketing RTAda by the end of this year. TeleSoft will support RTAda users, or supply a transition path, and the two companies are discussing a licensing arrangement which would enable TeleSoft to offer upgrades of TeleGen2 Ada to users of ARTX under special arrangement, and if enough users license this version of TeleGen2 Ada, the company plans to offer a standard product version of TeleGen2 Ada. TeleSoft will integrate new versions of TeleGen2 Ada with ARTX upon special request from users of the embedded Intel 80386, Motorola 88000 and MIL-STD 1750A.

...AS IT COMES OUT WITH THE TELEGEN2 REAL-TIME INTEGRATED ADA DEVELOPMENT SYSTEM...

TeleSoft also has an integrated Ada development system with an Ada-based real-time executive providing high speed Ada tasking, predictable task execution time and a range of real-time extensions. The TeleGen2 Real-time Integrated Ada Development System, TRIAD, consists of an Ada compiler, Ada productivity tools and an Ada real-time execution environment. In conjunction with high speed run-time capability, rate monotonic scheduling algorithms have been incorporated. The Ada productivity tool set includes TeleAda-Link, which downloads code over an Ethernet network, an Ethernet-based source level debugger, a compilation order tool, a library manager and library toolset and object module importers; there are three versions of the TRIAD System - the Sun-3-to-embedded-68000 system and the Sparcsystem-to-embedded-68000 system cost \$28,200 each at entry-level, and the VAX-to-embedded-68000 system costs \$28,200.

...DISCOUNTED TO RTADA USERS...

TeleSoft is also offering a 50% discount to licensed RTAda users on upgrades to TRIAD, the TeleGen2 Real-time Integrated Ada Development System, which consists of TeleSoft's Ada compiler targeted at embedded Motorola 68000 processors, a set of Ada productivity tools and an Ada real-time execution environment. TRIAD integrates a set of Ada-based development tools and real-time run-time components, and the foundation of the TRIAD System is the TeleGen2 Ada compilation system combined with TeleGen2 Run-time Support Package. TeleSoft also says that the TeleGen2 Ada compiler, Version 1.4A for Sparc stations and servers from Sun Microsystems Inc, now interfaces to Oracle and Sybase databases. The compiler has been integrated with Oracle's Pro*Ada precompiler and with Sybase's open client and APT-Library. The TeleGen2 Ada Sparc compiler runs under both SunOS 4.03 and SunOS 4.1, and is \$7,500 per workstation, including XView Toolkit.

SKILLADVANCE BRINGS IN THE SUPERNOVA DATABASE-INDEPENDENT GENERATOR

Finchley, London-based training specialist SkillAdvance Ltd has just introduced SuperNova, a non-procedural database-independent applications generator to the UK. SkillAdvance is the sole UK distributor of the product, which is developed partly in the US by New Jersey-based Four Seasons, and partly in Holland by the mainland European distributor, Transmediair. SuperNova, which is sold in the UK under Four Seasons' badge, is the most recent update and renamed version of the window-oriented database-independent application tool, Nova, and encompasses fourth generation language conversion. SuperNova applications can be developed on one machine or operating system and run without modification or conversion on other systems - Unix, Xenix, MS-DOS, and VMS. And SuperNova applications can access data in different databases. The object-oriented engine - the basic mechanism that interprets and executes the generated applications - executes instructions in its own internal code which is independent of the machine or operating system and is constructed during the application-building process and stored in a database. Database interfaces are currently available for Informix, Oracle and Ingres databases, which can also be accessed through an SQL interface. SuperNova applications can also interface simultaneously to flat ASCII files and C-ISAM structures, enabling data to be shared with applications built for other environments. The basic objects in SuperNova include the menu, forms, tables and reports, and functions are performed against these. Except for these basic functions, which are coded in C, the applications generator is specified in terms of the logic of the engine. The development software is available now in two forms: the SuperNova development system - for creating and updating applications, and the SuperNova runtime system - for executing SuperNova applications in a production environment. Prices vary by configuration but an 80386 development system would cost around £2,235; £745 for a basic runtime system.

PARCPLACE SYSTEMS RUSTLES UP SUPPORT FOR ITS OBJECTWORKS; NEW C++, SMALLTALK RELEASES

Xerox Corp spin-off ParcPlace Systems Inc has shipped the newest releases of its object-oriented programming systems, Objectworks/C++ and Objectworks/SmallTalk, and has also announced the formation of ParcPlace Partners, a value-added business programme for third-party SmallTalk application developers and systems integrators. Via the ParcPlace Partners programme, the Mountain View, California-based company will provide a support infrastructure for value-added resellers, systems integrators and independent software vendors that develop applications in the SmallTalk language. One has a suspicion that the programme emanates from a desire on IBM's part to get third parties interested in SmallTalk, following the agreement it signed with Parcplace last month to develop Objectworks/SmallTalk for the high profile RS/6000 Unix machines, (UX No 306). It must also be borne in mind that AT&T Unix Systems Laboratories set up its C++ Reseller Alliance in October, (UX No 306); it would seem that at the language level a schism is already appearing among computer vendors as to how object-oriented technology will be implemented. Anyhow, the ParcPlace Partners programme offers a variety of marketing and technical services that support the development, implementation and selling of SmallTalk applications. ParcPlace Partners will provide input to the ParcPlace Advisory Council, which offers marketing and technical services and feedback on products and other issues. Objectworks/C++ is \$3,500 on Sun Microsystems' Sparcstation, Objectworks/Smalltalk costs \$3,500 on Sparcstations, the Apple Mac, DEC's DECstations, now IBM PS/2, RS/6000, HP 9000 series 300 and 400, HP Apollo workstations and Microsoft Windows 3.0 versions will be out in the first quarter of next year.

TANDEM TARGETS UNIX WITH APPLICATION DEVELOPMENT GROUP

In an effort to boost its fortunes in the fault-tolerant Unix world now that DEC, Hewlett-Packard and others have taken the plunge, Tandem Computers Inc has created an application group to co-develop Unix software with third-party vendors for its Mips Computer Systems R2000-based Integrity S2 Risc machine. Following initial success selling to the telecommunications industry, Tandem is reportedly finding it tough-going trying to break into other Unix markets and reckons it needs more applications to give the system a competitive chance. Its OEM deal with AT&T for Integrity, (UX No 253), is not thought to have generated any volume sales as yet, but Tandem has started the Unix push already, porting Unidata Inc's relational database on to the system. In a related move, Tandem has also shifted its Unix sales and marketing operation from Austin, Texas, up to its corporate headquarters Cupertino, California: it's under the charge of Bruce Dougherty.

SPANISH ASSOCIATION OF UNIX USERS FORMED TO PROSELYTISE AND EDUCATE...

Last July, 28 companies set up the Spanish Association of Unix Users, presided over by Jose A Manas from the Department of Data Transmission Engineering at the School of Telecommunications in Madrid. It aims to promote and develop Unix and related technology, education, research and experimental projects to support communications systems and electronic mail as well as acting as an intermediary between manufacturers, standards bodies, users and the trade press. The group is still awaiting formal recognition from the Spanish Ministry of the Interior, but already has 80 assigned centres - which it expects to double within a year. Sponsor members like Sun, DEC and Hewlett-Packard will provide some initial finance - along with the Madrid and Barcelona polytechnics - for exhibitions and shows. The Association expects to work closely with the Spanish Organisation of Unix Manufacturers.

...UNISYS WILL BUILD ITS UNIX LINE IN SPAIN

Unisys Espana SA has announced a plan to extend its plant in Catalonia and to start manufacturing Unix-based multi-user systems as from next year, thus becoming the first company to install a production plant in Spain for systems based exclusively on Unix. The company will continue to produce CTOS-based commercial workstations but next year will start manufacturing models 51, 55 and 60 of the mid-range; then in phase two, the low range models U6000/10 and U6000/31 will be manufactured there and then ultimately - the multi-processing systems to be announced in Spain some time next year. The new factory is expected to supply the European market, exporting around \$104m worth of sales in 1992. The factory near Barcelona will cost the company \$10.4m, will be 45,000 square feet in size and will use the same production equipment as its counterpart in the US - all of which means it can be ramped up to handle high volumes of production.

SYMBOLICS' GERMAN SUBSIDIARY TO BECOME SYSTEM HOUSE

Eschborn-based Symbolics GmbH, the German subsidiary of the artificial intelligence systems specialist Symbolics Inc, Burlington, Massachusetts is moving up in the world - it's decided it wants to change its focus from a hardware and software supplier to a system house developing custom applications. Ingo Kriescher explained to Computerwoche that Symbolics GmbH has gained much experience as a distributor and so now wants to sell the products of its parent company as well as providing hard-and software support. Symbolics object-oriented software at the moment runs only on Sun Microsystems and Apple Computer 68000 family systems, but the company wants to offer its packages for other environments - the applications are currently being converted for IBM's RS/6000 and will eventually be available for all Unix and Lisp systems. To date Symbolics GmbH's customers for the object-oriented software include Lufthansa, Munich Airport and the German end of American Express.

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AT&T LAUNCHES PROXY FIGHT TO WIN NCR'S BOARD...

As expected, (UX No 314), AT&T Co formally launched a proxy fight to win shareholder support to get four of its nominees onto the 13-person board of NCR Corp at the company's annual meeting on April 17, and to call a special meeting to oust the entire NCR board. It needs only 25% of shares voted in order to call an extraordinary meeting, but requires 80% voted in favour in order to oust the board. It also extended its \$90 a share tender offer for NCR to January 15; it was due to close on January 4. AT&T said that as of close of business Friday, no NCR shares had been tendered in response to its offer.

...AS NCR ENLISTS HELP OF OHIO SENATE IN ITS "JUST SAY NO" CAMPAIGN

NCR chairman Charles Exley has now taken his fight against AT&T Co's unwanted tender offer to the Judiciary Committee of the Ohio Senate, telling the Upper House jurists that he is resolutely opposed to AT&T's takeover plan. "NCR is not for sale to AT&T or anyone else," he said. "We want to remain independent." Exley, pointing to AT&T's record of failure in the computer business, said that the "imagined" synergies and manageability between the telecommunications and computer industries have led to multi-million dollar losses in similar ventures. Exley explained that, "In 1969, Xerox acquired Scientific Data Systems. Six years later, Xerox closed it down and wrote off its remaining investment. In 1972, Sperry Univac acquired RCA's customer base and hired 2,500 RCA employees. In the years following, Sperry lost most of the RCA customer base to competitors. And even IBM, after acquiring the Rolm Corp in 1984, ended up selling it and losing millions. Exley said AT&T's proposed takeover would result in yet another failed attempt to buy into the computer industry. "Having lost an estimated \$2,000m and gained virtually no market share, AT&T now appears to have thrown up its hands," he said. "It now wants to buy expertise, in the form of NCR. The history of failure in such mergers has been devastating. Once this proposal is held up to the light of public scrutiny, it will become clear that it is not in the best interests of the people of this state." Separately, NCR has now hired Goldman Sachs & Co to bat on its team.

OSF chief David Tory, questioned by the Wall Street Journal about the Japanese buying into USL - see front page - raised the spectre that the US Defense Department might object to foreigners purchasing Unix shares while at the same time complaining that AT&T would continue to control USL "absolutely." Tory's brickbats were odd considering OSF sells Unix code itself and five of OSF's nine original founders were "foreigners." USL's Larry Dooling, Tory's counterpart and nemesis, took offence at the "ludicrous" remarks, into which he read a myopic "US-only view of supposedly open systems," and attributed Tory's position to the increasing dominance of OSF by its US founders DEC, IBM and Hewlett-Packard.

Uniplex is reportedly trying to figure out what its next release, Version 8, code named Magenta, is going to look like: there's talk of wysiwyg, object orientation and compound editing, but they've been talking about that stuff for a long time and nothing's happened.

As forecast a couple of weeks ago, (UX No 312), Concurrent Computer Corp has made further staff cuts, with 86 employees going from the Tinton Falls, New Jersey, computer manufacturer's proprietary systems research and development operation: its workforce now stands at around 2,400, down from 3,200 at the start of the year.

Zenith Data Systems president John Frank has resigned following changes in duties since the firm was acquired by Groupe Bull last October, (UX No 252).

In the US, NCR Corp and Hewlett-Packard Co are to share a \$100m contract to supply BellSouth Corp with distributed Unix systems, beating competition from the likes of Sun Microsystems Inc, DEC, IBM and AT&T: the contract includes over 13,000 workstations, servers, X-terminals, peripherals and networking products.

Island Graphics Corp, San Rafael, California, is now shipping Open Look versions of its Write, Paint and Draw word-processing and graphics applications: each costs \$1,000.

Enterprise Information Systems, Cardiff, Wales, has developed a Posix-compliant version of its Energy Management Information System from original ICL and IBM mainframe ports: it says X-Windows and object-orientated databases can be supported.

In the UK, the University of Bath has developed new software for ICL which manages networked Unix systems: the University won the £198,000 contract in competition with international software houses, and the software will soon begin customer trials worldwide.

Unix International Inc says it is planning to open a centre in Japan to provide facilities for independent software vendors to convert their applications for Unix System V.4: it will also provide education and training, and will serve as a technology showcase for System V.4.

Intergraph Corp, Huntsville, Alabama has been given the go-ahead by the bankruptcy court to acquire the assets of Daisy Systems Corp for \$14m. Intergraph is forecasting that it will report \$1,000m sales for this year and \$1,250m in 1991.

Tektronix Inc was unable to find a buyer for its workstation division, and so the company closed the unit down last week - the 170 employees had not reported to work since October and are now officially laid off: Tektronix was the first to build a workstation around Motorola's 88000 RISC, it now intends to concentrate on X and graphics terminals.

NCR Corp is quite right to say that many of the biggest and most spectacular computer company acquisitions have been disasters, it is by no means always true - Honeywell Inc bought itself 15 fair years in the computer business after buying General Electric Corp's mainframe arm, ICL's acquisition of Singer Business Machines is at the root of its successful retail systems and distributed micros business today, and many of the smaller, less dramatic buys cancel out disasters like Sperry Corp's acquisition of Varian Data Machines: one such seems to be Tandy Corp's acquisition of Grid Systems Corp, giving it a high-end counterpoise to its mass-market computer business - Tandy says that Grid's sales rose 46% to \$190m in its financial year to June 30 last.

Novadyne Computer Systems Inc, the management buyout of the US marketing and service arm of McDonnell Douglas Information Systems is to complement McDonnell's Reality Pick systems with machines bought OEM from Sun Microsystems Inc under a "multi-million dollar" agreement: the Sun machines will be marketed with either the UniData Systems Inc UniData SQL or the VMark Software Inc UniVerse implementations of the Pick operating system under Unix.

Sybase Inc is leading a project with Lotus Development Corp to create a development environment supporting distributed applications, though a product is not expected before 1992: codenamed Comet, the effort gives Lotus a major role in defining Sybase's database applications strategy, and will include a graphical windowing environment with hooks to object-orientated languages and other databases, a data dictionary, repository, and provides links to IBM's AD/Cycle and other computer-aided software engineering tools - Lotus is Sybase's largest outside shareholder.

Sun Microsystems Inc's two Polish distributors, (UX No 306), are COMP Ltd, and PZ Karen, both based in Warsaw.

AT&T Computer Systems and computer retailer MicroAge Computer Centers Inc are to develop joint marketing plans to sell networking and systems integration services to large national corporations following a two-year agreement signed last week.

unigram · x is published weekly by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH. Telephone +44 (0)71 528 7083. Fax: +44 (0)71 439 1105

Publisher: Simon Thompson. Circulation Manager: Brigit Ingham. Editor: John Abbott. Editorial Team: William Fellows, Mike Faden.

Subscription rates on request.

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Registered at the Post Office as a Newspaper

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- 7 JAN. 1991

The weekly information newsletter for the UNIX™ community worldwide

London, January 7-11 1991

Number 315

NATSEMI SET TO PREVIEW 64-BIT RISC SUPERCHIP

National Semiconductor Corp may have been roundly bested in the microprocessor CPU market with its NS32000 family - the part is primarily used these days only in special versions optimised for graphic and laser printer control - but it is not ready to exit the general purpose microprocessor market without a fight. At next month's International Solid State Circuits Conference in San Francisco, the Santa Clara company plans to announce its entry into the RISC business by describing a superscalar 64-bit part that will take advantage of the intrinsic simplicity of RISC by packing two integer units, a single and double precision floating point unit and signal processing circuitry, plus separate instruction and data caches to deliver 100 MIPS with a clock speed of 50MHz. According to the pre-conference come-on seen by Electronic News, the bus and clock designs will also support conventional system design at 25MHz while operating internally at 50MHz. The part presumably uses the old mini-computer technique adopted by IBM in its top-end Summit models of the ES/9000 of automatically splitting the instruction and data stream into two and passing half through each integer unit to achieve the claimed 100 MIPS performance. Although the RISC market is already regarded as overcrowded, there is a widespread view, especially in Japan, that 64 bits will be required for all the things that people are going to want to do at the desktop over the next few years, and given that the same company or companies seldom dominate two successive generations of microprocessor, there is still all to play for in the first 64-bit generation, in which Japan's G-Micro Tron chips may also contend.

IBM CONSIDERS DOING A CUT-DOWN "OSF/1-LITE"

IBM and the Open Software Foundation are investigating the possibility of doing a chopped-down version of the OSF/1 operating system so it can run on Big Blue's low-end RS/6000 workstations, including the low-priced, entry-level model expected revealed during the second quarter, (UX No 302). The problem is that OSF/1 requires at least 2Mb of RAM to run. The trimmed-down version has already been dubbed "OSF/1 Lite" by those close to the project according to Computer Reseller News, and is especially interesting with regard to IBM's plans to converge the disparate versions of its AIX Unix implementation with OSF/1 over the next few years, (UX No 307).

"SUN STILL OUT FRONT AS WORKSTATION GROWTH DIMS"

It seems that IBM has started taking the workstation market just as its breakneck growth phase comes to an end. Figures for 1990 just published by Dataquest Inc from San Jose show that growth in factory revenue was 21.5%, down from 40.3% last year, and that, reflecting price attrition, the growth in numbers shipped, while substantially higher at 33.8%, was well down on the 40.3% figure for 1989. Dataquest values the world market at \$7,400m and reckons that Sun Microsystems Inc retained its leadership with 29.1% of the market against 28.2% last year. Hewlett-Packard Co, in second place, slipped to 22.7% share from 24.1% because of the hold-up on the Motorola 68040. The transition from VAXstations to open DECstations hurt DEC, whose share fell to 17.7% from 21%. Intergraph Inc retained fourth place with 6.8%, and Silicon Graphics growing its business by 35.9% and taking 5.4%. IBM gained 65.5% from its very low base to take 3.5% of the market. Minor players and newcomers boosted their overall share of the market to 14.9% from 12.4%. Dataquest cites as market factors the slowing of the US economy, the transition from proprietary product lines to open systems, the maturing of traditional technical markets, and the lengthening of sales cycles - factors likely to remain dominant and intensify this year.

ESPRIT REPLACES EMI WITH OMI IN MICROPROCESSOR QUEST

Last year the European Commission's DG 13 information technology group set up EMI, the European Microprocessor Initiative, to hunt down a home-spun microprocessor technology which could become a standard building block for European system developers. More or less by default, EMI became a vehicle for SGS Thomson's Inmos transputer technology, but other firms balked at this and cried why Inmos? As a result EMI, which was part of the Commission's Esprit programme, was abandoned, but a replacement - OMI - is currently getting up steam. Unlike its predecessor, OMI, the Open Microprocessor Initiative hasn't been allocated any funding as yet, but it is a live project, already endorsed by the likes of Sun Microsystems. Sun gave a presentation of its Sparc Risc technology to OMI people at the end of last year. However according to two leading vendors, OMI has a fundamental identity crisis to resolve before it can hope to reach any decision, namely what is its goal? If the aim is to do everything in-house, with European born and bred technology then Inmos would be amongst the leading contenders, these vendors conclude. However if the object is to increase the trade balance of the European computer industry in general, then the vendors argue OMI must consider a broader range of technologies from outside of the European bloc, especially those that will likely be leading industry standards in the future.

CHORUS WINS EUROPEAN SUPPORT FROM INMOS, ACORN, GIPSI

Paris operating systems house Chorus Systemes is winning European friends left, right and centre for its multi-processing, real-time, micro-kernel version of Unix. First SGS Thomson's Inmos subsidiary is to port Chorus - plus Sunnyvale, California-based Ready Systems' VRTX32 real-time kernel - onto its transputer technology, following deals signed last week. Inmos' move puts an end to years of indecision about which operating system to support on the transputer. Chorus is also being ported to Acorn Computers' Arm-3 Risc chip, one of the designs recently spun-off by Acorn into a joint venture with Apple Computer Inc and VLSI Technology Inc, (UX No 311). The Arm-3 running Chorus is being used as the basis of a multi-media workstation known as Multiworks, a spin-off from Esprit's European Spirit workstation project. Two versions of Multiworks, one based upon Intel's 80486 - at Olivetti's behest - the other on the Acorn chip, are underway. And Chorus is being used in another European workstation project, the Cypress Sparc-based system developed by Paris outfit Gipsi SA in conjunction with Portuguese research institute INESC, (UX No 298). The workstation already runs the real-time Chorus micro-kernel and SunOS - the full Chorus Unix implementation will be on the workstation by the end of next month. X-terminal-builder Gipsi is looking for a European manufacturing partner to bring its workstation design to market.

UNIFORM PREVIEW

OPEN INC PITCHES INTO GRAPHICAL USER INTERFACE FRAY WITH ASPECT

1990 start-up Open Inc, Colorado Springs, Colorado, debuts at Uniform in a couple of weeks with Aspect, a high-level application programming interface allowing developers to write an application that will run under OSF/Motif, Open Look, Microsoft Windows and the Mac graphical user interfaces - as well as on character-based terminals. Applications written to the Aspect API can be ported to a runtime environment for each of the interfaces: an application with an Aspect user interface when linked with the Aspect Motif runtime produces a native Motif implementation. Aspect's design tool stores specifications for the interface in a database. These are not bound into the application, but are retrieved by the Aspect runtime, a configuration which Open claims requires less of the interface to be hard-coded and allows changes to be made to the database without recompilation. Aspect also allows the same applications to be run on character-based terminals. A character runtime provides an event-driven manager for ASCII terminals implementing all features of the graphical environments, except for images, using the same API as the graphical runtimes. Open Inc, a subsidiary of Pick popper Via Systems, claims Aspect is quite different to similar offerings from the likes of Denver, Colorado-based XVT. Aspect will be initially offered in Motif and character-based runtime versions under Unix from the second quarter. A VMS implementation follows in the third quarter, with Macintosh, Microsoft Windows, OS/2 Presentation Manager and Open Look versions set for the end of the year. Open's Howard Sweeney says the company hasn't yet talked to any of the industry standards bodies currently looking for ways through the battleground of the competing Unix GUIs.

SEQUENT TO ANNOUNCE 80486 MULTI-PROCESSOR SYSTEMS

Sequent Computer Systems Inc is expected to use the Uniform show later this month as the backdrop for the announcement of its new Intel 80486-based multi-processor system with up to 24 CPUs, which it should start delivering in March, (UX No 305). The box will kick off a new Sequent line superceding the company's current 80386-based family which will be retired down the road. Benchmarks were still being run over the holiday but Sequent was expecting at least a 20% improvement over its current 250 transactions per-second performance claim. Sequent says it has between 2,500 and 3,000 80386 multi-processing systems in the field.

SOLARIX TO PREVIEW INTEL-BASED X-TERMINAL AT UNIFORM

Solarix Systems, the would-be Sparc cloner, is expecting to preview a new X-terminal prototype it's developed in-house at the UniForum trade show in Dallas, starting on the 22nd of this month. Firm specifications are still scarce, but the new commercially geared 14-inch line, dubbed the CX-14, will house a 286/386 chip and 4Mb memory, connect to any host supporting TCP/IP, and offer 256 colours at 1024 x 768 pixel resolution. Pricing will go below \$1,900. Solarix, which is still struggling to get entry-level models of its overdue Solarix/4 PW+ Sparc clone, (UX No 302), says it is now in alpha with the base line 18-MIPS 25MHz boxes and should be delivering volume in March or April. It will be taking them through unidentified OEMs, initially mostly lower profile international firms it says it's signed, as well as some regional US distributors and large key VARs it's still in discussions with. A Sparc server which had been expected this quarter, (UX No 302) has been postponed until probably the third quarter, the company said.

NEWCOMER CLARITY TO REVEAL RAPPORT OFFICE TOOLS

Also at Uniform, Clarity Software, an unknown start-up in Mountain View, California, is supposed to unveil Rapport, a brand new suite of Unix-based object-orientated office tools that includes a compound document editor, spreadsheet, presentation graphics and advanced E-mail. Clarity - in business for a year - fancies the software, its first product, could be the long-sought "killer application" that will propel Unix out of the technical niche and into the general-purpose computing big time. Despite these hopes, the company will start by selling the "what you see is what you get" product into the technical workstation market, with visions of eventually targeting personal computer and Apple Macintosh users who want to move to more powerful platforms. Rapport reportedly runs under both the Motif and Open Look graphical user interfaces on DEC, Hewlett-Packard/Apollo, IBM, Sun Microsystems and Silicon Graphics kit, as well as on X-terminals. Clarity, which prides itself on Rapport's openness and wide appeal, claims older office automation competitors like Q-Office and Uniplex have been obsoleted by hardware and operating system advances such as graphical user interfaces, and that younger competition like BBN's Slate or Applix's Alis are either closed and proprietary packages or focused on a single task. Clarity lists the Macintosh-like interface, the ability to work with other Unix software such as Framemaker, Wingz, Lotus 1-2-3 or custom applications as though they were native and the ability to exchange editable mixed-media documents with non-Rapport users on any Unix, personal computer or Macintosh system as Rapport's winning features. Rapport is priced at \$900 per-seat, with converters for transparent access to other platforms priced separately. The Unix Pack, PC Pack and Mac Pack are \$200 each.

AT LAST! - A CONSORTIUM WE CAN ALL SUPPORT

A brand new non-profit industry group called !Unix Consortium is expected to be announced at UniForum. Dedicated to the care, feeling and welfare of that endangered species, the trade show booth worker, the totally unaligned organisation is promising to have its first !bang-up meeting the night of Tuesday, January 22nd starting at 9pm. The venue will be the Bobby Sox in Dallas Alley, a multi-entertainment complex consisting of nine nightclubs all housed in two adjacent buildings joined by multi-coloured neon arches across its namesake alley. According to Specialix's Harry Gordon, a co-founder of the new group, "The !Unix Consortium has been formed to return the industry to its roots of hedonism and debauchery." As a result, says Kathy Salvano of TBS Services, another co-founder, !Unix Consortium "supports no standards, in fact we have no standards." All - up to a maximum of 300 people - are welcome though selling is outlawed and customers are warned that they are on their own, according to the last of the three !Unix directors, Jesse Bornfreund of Commodore, one of the industry's top party animals. Dues are \$25, which nets a four hour open bar, a Fajita buffet, a !Unix T-shirt and a dinner receipt. Any money left over will go to a non-political humanitarian charity. If you want to go, contact any of the trio for a membership application: Jesse (215) 344 3803, Kathy (408) 727 5737 or Harry (408) 354 4498.

INSIGNIA CONSOLIDATES MS-DOS ON UNIX MARKET WITH PHOENIX ACQUISITION...

Insignia Solutions Ltd, based in High Wycombe, Bucks, has consolidated its hold on the MS-DOS/Unix emulation marketplace with the acquisition of the emulation product lines of Phoenix Technologies Ltd, Norwood, Massachusetts. Phoenix, which says it now wants to concentrate on its core business of system software for PCs and printers, has taken an undisclosed number of shares in privately held Insignia. The move clears the way for Insignia's SoftPC emulators, now available for Sun, DEC, Hewlett-Packard, Intergraph, Silicon Graphics and Motorola hardware (including Apple and NeXT). The main competition comes from Intel-only competitors such as Interactive's VP/ix (originally developed by Phoenix), PC-Interface and PC Xcite from Locus (included in SCO's Open Desktop package). Hunter Systems' XDOS software, which does encompass other architectures, depends on porting specific packages to run under Unix rather than emulating a full MS-DOS environment. Customers for the Phoenix DOSWindows product such as Sun and DEC have been shifting marketing emphasis towards SoftPC of late - DEC now sells the product and there is speculation that Sun is also ready to adopt it. According to Insignia's Ivor Share, who claims that SoftPC outperforms DOSWindows on a Sparcstation, the company does now have a contract in place with Sun. While the move fits in terms of Insignia's marketing strategy, the company has not taken on any staff from Phoenix and does not appear to have any plans to use the technology. The deal also includes hardware co-processors such as those used in low-end Apollo workstations, but Share says that software emulators now outperform a 286 co-processor quite comfortably. Insignia has marketing, sales and support offices in Sunnyvale, California and Andover, Massachusetts.

... AS OMICRON AB TAKES LOCUS PRODUCTS FOR SWEDEN

Locus Computing Corp has a new distributor for the lively Swedish marketplace. Omicron AB of Kista, near Stockholm, which claims to be Sweden's largest distributor of computer software, is to distribute the Locus range of MS-DOS and Unix integration tools to VARS, OEMs, system integrators and resellers throughout Sweden, and will also sell direct to major customers. The products are Locus PC-Xsight, which brings X-Window capabilities to Unix-based 286, 386 and 486 PCs, and PC-Interface, for transparently connecting MS-DOS PCs to a Unix host. Omicron already distributes software from the Santa Cruz Operation, along with graphics boards and archive streamers. The company employs 35 people and last year had a turnover of £2.7m.

COMPUTERVISION SETS NEW CADD5 RELEASE

Prime Computer Inc's Computervision unit is to unveil a new version of its CADD5-4X computer-aided design package later this year, though it will be at least 1992 before the software makes it onto a non-Sun Microsystems platform, the company says. The release will include a new design module that can export data to other parts of the program, and in a departure from Computervision custom, the package will also allow users and third-party vendors to write applications that will run alongside its own programs. Following its failed effort to develop a 32-bit computer back in the mid-eighties, Computervision ported CADD5-4X to the Sun platform and signed on with the workstation builder as OEM partner in a determined attempt not to miss the Unix window, (UX No 76) - sometime before its acquisition by Prime, (UX No 164).

AT&T WILL SELL 20%-30%

OF UNIX SYSTEM LABS INITIALLY

The day after Christmas, AT&T finally lifted the veil a wee bit on how it actually intends to divide up Unix System Laboratories and how the roost will be ruled once the long-promised, still-pending partition finally takes place - presumably early this year. According to an employee stock plan filed on December 26 with the Securities and Exchange Commission, 20% to 30% of USL will be sold off to outside investors under the anticipated private placement scheme. There will be nine directors on the board, three of whom will be nominated by the investors, and the other six by AT&T. Two of the nine are supposed to be "independent directors," unaffiliated with either AT&T or any of the outside investors. Looking down the road, AT&T also reiterated past promises that board membership would be adjusted to reflect any decrease in its ownership of USL. The plan will doubtless be of comfort to anti-AT&T forces such as the Open Software Foundation which has repeatedly maintained that a major stumbling block to peace and unity has been AT&T's pigheaded determination to retain control of Unix. The plan also modifies pre-Christmas reports published in Japan and carried in the Wall Street Journal that AT&T was planning to sell around 40% of USL. USL president Larry Dooling warned Unigram readers that those numbers were not to be trusted, (UX No 314). The reports from Japan named Fujitsu, NEC, Toshiba, Unisys, ICL and Amdahl as likely investors.

ORACLE, BACK IN PROFIT, CUTS ITS UK WORKFORCE 6.5%

Oracle UK, whose parent returned to modest profit in its fiscal second quarter, has cut 80 jobs in its distribution division, leaving the products division untouched, as well as technical support and customer response within distribution. The UK operation now has a staff of 1,220. According to marketing director Mike Evans, the cuts were needed because while year on year revenue growth for 1991 looks respectable with a projected year end result of £110m, the UK, while profitable, is not hitting targets. Evans blames delays in central government decision-making as well as worsening economic downturn in the south east.

NCR STRIKES SOFTWARE DEAL WITH SANTA CRUZ OPERATION

NCR Corp, now a convert from its Motorola-based Tower systems to the new Intel-based System 3000 range launched last October, has struck up a deal with The Santa Cruz Operation that allows NCR vertical market resellers to buy 11 SCO packages to use with the new machines. And NCR has packaged up three discount bundles as "starter packages" for the NCR 3340 to introduce VARs to SCO software. The 11 packages include various configurations of Open Desktop, SCO Unix V/386, VP/ix, TCP/IP, NFS, and SCO's version of PC-Xsight.

CYPRESS HITS PROBLEMS WITH SPARC MEMORY MANAGEMENT AND CACHE UNITS

A pre-Christmas analyst report from Bear Stearns says its researchers have confirmed that Cypress Semiconductor has had yield problems with its 7C604 reference memory management unit and cache controller chip for the 40MHz Sparc processor it is fabricating. LSI Logic's version hasn't exactly been smooth sailing either and Sparc builders need the silicon for their expected Sparcstation 2-class systems. Sun Microsystems is unaffected because it uses a custom chip it has designed.

INTERGRAPH "NO 3 IN EDS" FOLLOWING DAZIX ACQUISITION

Huntsville, Alabama-based Intergraph Corp has filled in the background on its purchase of Daisy Systems Corp out of bankruptcy, saying that, as planned, it paid \$14m - \$10m in cash and \$4m in shares for Daisy assets including development sites in Boulder, Colorado and Sunnyvale, California, and extensive sales and support operations in North America, Europe and Asia-Pacific - and that as a result, it projects total 1991 corporate revenues of \$1,250m, \$150m coming from electronic design automation sales. Intergraph's electronics business unit in Huntsville will be merged with Daisy/Cadnetix to form Dazix. An Intergraph Company, initially operated from Huntsville. Intergraph will also integrate its electronic design products with those of Dazix using the SEE framework on both the Intergraph Clipper-based workstations and on Sparc-based machines. Daisy research and development personnel in Sunnyvale and Boulder will continue to operate in conjunction with Intergraph development staff in the US and India. Intergraph claims the deal makes it number three in the electronic design market worldwide, and adds Hitachi Ltd, Fujitsu Ltd, Siemens AG, IBM Corp, Texas Instruments Inc, Seiko Epson Corp and AT&T Co to Intergraph's customer base.

MORE RE-SHUFFLING AS APOLLO CONTINUES TO CAUSE INDIGESTION AT HEWLETT-PACKARD

Continuing the task of assimilating its Apollo acquisition, Hewlett-Packard has collapsed four of its divisions into two new structures, the Networked Systems Group and Cooperative Computing Group. The move is seen as a trickle-down from the October re-shuffle which saw the workstation and personal computer groups merged into one with the creation of a Computer Systems Organisation, (UX No 302). William Kay, general manager of the workstation group, engineer of the Apollo acquisition and one of the chief architects of the formation of the Open Software Foundation, was moved out of his post in this latest shake-up, although no jobs are said to have been lost. Hewlett says the move will help it better implement its NewWave Computing strategy. Headed by Willem Roelandts, the Networked Systems Group will have responsibility for development and marketing of workstations, multi-user systems and servers, the Precision Architecture Risc chip, networking, operating systems, languages and databases. The Cooperative Computing Group is in charge of developing and marketing distributed-computing environments, applications, user interfaces, and office and personal computer network products. It is lead by Robert Frankenberg. Hewlett says it will also be committing extra resources to the telecommunications market.

UNISYS WINS £3.8M SCOPE CONTRACT FROM CROWN PROSECUTION

Unisys Corp has won a £3.8 million contract from the Crown Prosecution Service, in competition with rivals Olivetti, Hewlett-Packard, Siemens and Apricot. The contract, dubbed the Scope Standard Case Operations project, is aimed at speeding up the progress of cases through the system, something that has been the subject of criticism over recent months. The CPS handles some 1.6 million cases every year, and hopes to be able to track cases from receiving the first file from the police through the court system to sentencing and beyond. Some 70 Intel-based U6000 processors running Unix will be supplied for use at 31 offices, supporting 1,300 terminals and 800 printers. Installation will take place over the next two years, starting at the Norfolk and Suffolk area office. Future links to other agencies in the criminal justice system and to the police are being considered. Unisys will provide Oracle-based software, hardware, wide area network communications links and documentation.

INTERBASE SHIPS DATABASE FOR IBM'S RS/6000

Interbase Software Corp, Bedford, Massachusetts, which has had a beta test version of its Interbase relational database for the IBM RS/6000 out since October, is to begin shipping it from this month. Shown at the recent Database World exhibition in the US on major shareholder Ashton Tate's stand, Interbase Version 3.0 for the RS/6000 is suitable for scientific as well as commercial applications, as it includes array support for large or small structured objects up to 16 dimensions to be stored in the database. Also available on HP, Apollo, DEC, Sun and Silicon Graphics workstations and on SCO Unix machines, Interbase supports basic large objects - known as blobs - transaction processing, a multi-user architecture optimised for concurrent readers and writers and automatic two-phase commit and recovery. Version 3.0 also includes event alerters, blob filters and user-defined functions, as well as the array support. Multi-site reads and writes are supported among machines with different architectures, all in the same transaction, allowing users to query and update databases on a mixed machine network wherever the data resides. No prices were given. Interbase, a later starter in the battle for the database market, nevertheless claims over 7,000 licences in industries such as aerospace, electronics, financial trading, manufacturing and process control, network management and government. The product is also marketed as Starbase by Cognos Inc.

FPS COMPUTING LICENSES DISTRIBUTED COMPUTING'S UNITREE UNIX FILE SYSTEM

The Distributed Computing Solutions division of General Atomics Inc, San Diego, has licensed its UniTree file and storage management software to FPS Computing, as Floating Point Systems Inc likes to be known these days, for use on the Beaverton, Oregon company's Model 500 family of minisupercomputers. The Model 500 family started out as the 64-bit machines that had been in development at Celerity Computing when FPS bought the assets of the San Diego company, but now consists of Sparc-based models. UniTree is a Unix-based hierarchical file and storage management system for networked, multivendor computing environments, and is the fruits of a 10-year development programme at the Lawrence Livermore National Laboratory in Livermore, California. It is designed for managing large volumes of data in high-performance computing applications, and when installed on a supported system and configured with appropriate storage peripherals, it is claimed to provide the user with apparently unlimited on-line storage capacity by automatically and invisibly migrating files among peripheral devices to reduce on-line storage in favour of less expensive off-line media. Any client system that supports Network File System or File Transfer Protocol and provides a network interface to Ethernet, FDDI, HIPPI High-Performance Parallel Interface, Hyperchannel or UltraNet can be used to access to a UniTree central file server. FPS Computing is integrating UniTree into its new Data Management & Automated Storage Strategy, claimed to be the first integrated system for minisupercomputers that provides the information management capabilities necessary for high-end supercomputing.

ALPHA MICRO TEARS UP ARIL LETTER

Over recent years, Alpha Microsystems Inc has proved itself exceptionally unlucky in love, and the Santa Ana, California micromaker has now terminated its letter of intent to be acquired by Aril Group Inc because some conditions of the letter were not satisfied. While Alpha Micro says that it "is time to focus our full attention on Alpha Micro's business and serving our dealers and end users," Aril, whose primary asset is a manufacturer of kitchen cabinets (couldn't Alpha Micro stand the heat?), says it is still interested in the company.

MAINDEC MOVES TO OPEN SYSTEMS WITH SOL MERGER

DEC reseller and maintenance company Maindec Computer Systems Ltd of Wooburn Green, Bucks, has established a new division to concentrate on Unix-based software - and plans to broaden its horizons by selling IBM AIX-based hardware and possibly other Unix machines alongside Ultrix-based DEC systems. The new division - called Maindec Open Software - started trading on December 1st last year, and takes over the operations and client base of 14 year-old Systems Optimisation Ltd (SOL), previously based in Reading, where it employed 15 people. SOL, which specialised in DEC machines running Ingres and Uniface 4GL-based software and apparently found itself habitually working with Maindec, will now operate within Maindec on turnkey systems using DEC and other Unix hardware suppliers, including IBM. According to SOL director Hugh Williams, the company "needed the umbrella of a larger company in terms of resources and experience".

TOKYOGRAMS

Matsushita Electric Industrial Co subsidiary PanaSequent Co, owned 80.5% by Matsushita, 19.5% by Sequent Computer Systems Inc, has added the new low-cost models of the Sequent Symmetry line of Unix multiprocessors: the S16 is offered with from two to six processors, rated at from 10 MIPS to 30 MIPS and the company says that it enables systems to be put together for as little as \$70,000; PanaSequent is already selling the S27 and S81 machines, and has reportedly sold around 80 systems; in the year to March last year, it had sales of about \$9m, and is looking for at least a doubling of that figure this fiscal.

Canon Inc now looks to achieve its goal of developing a Japanese language version of NeXT Computer Inc's workstation in May according to the *Dempa Shimbun* daily. Canon has exclusive rights to market NeXT machines in Asia and has been doing so since September, and it expects to sell 30,000 of the Japanese version a month once they are ready. Canon has never announced how many of the original NeXT workstations it has sold in Japan so far, but analysts estimate that about 1,000 English language versions are sold each month. Canon's decision to go with Steve Jobs' machine - to the extent of pumping a very large sum in the company - is something of an embarrassment for Jobs' original co-creation, Apple Computer Inc, because Canon is also a major Macintosh remarketer.

Fujitsu has converted its Aristown geographical information system, which currently runs on its M series mainframes and G series workstations, to the S series workstations that it buys OEM from Sun Microsystems: the S series version of the software supposedly can do high-speed geographical retrieval at 10 times the speed of the mainframe system, and provides "strategic information system" functions through linkage with relational databases, statistical unit conversion and statistical mapping; Fujitsu is selling the system for prices ranging from \$24,000 for a basic system to \$78,000 for a high-end version; it hopes to sell 500 over three years.

OPUS DISTRIBUTOR GOES DIRECT IN CUT-THROAT SPARC CLONE MARKET

Opus Systems has a southern California start-up, an offshoot of the 200-man \$70m-\$100m Everex PC distributor Tech Power, selling its new low-end Sparc clones to end-users. Technix came into existence a year and a half ago, chartered to get Tech Power into the Unix business - a protective measure the company adopted against the day such a business actually materialises. Technix started peddling Unix-based 386/486 platforms of its own and others' making to VARs, but persistently courted Opus - even to taking on its slow-moving 88000 line - to be first in line to pick up the LSI/Opus kit when it became available a few months ago, (UX No 305). In the last six weeks or so, Technix says it's moved up to 50 Opus clones, some of them still on evaluation, into Fortune 100 accounts. Although originally meant to be a Unix wholesaler, Technix says it had "no choice" but to go direct. Moses Sun, the aptly named Chinese-American running the operation, has found the only qualified buyers for his Sparcettes among the very top-rung US corporations - largely because of their built-in technical know-how and the kinds of applications available for the machines. His sell is purely on price, he says, Sun Microsystems having done "a remarkable job in packaging the technology, (a cloner) can't enhance performance." Sun Microsystems isn't making it particularly easy for its clone offspring to sell on price either - having always had a reputation for sizeable discounts. Sun, the executive, says he reckons a company can get 32% to 35% off from Sun Microsystems, which is now also qualifying some corporates as research institutions, so they can get a 50% discount. Opus isn't making it too easy for Mr Sun either. He says Opus, whose list prices are the equal of Sun Microsystems, is trying to keep its margins as high as it can, forcing him to negotiate his price with Opus every time he goes to cut a deal. Opus would like to keep its discounts in the 25% to 30% range, which Mr Sun says just isn't enough. Technix finds its prospects through its parent company's direct contacts with corporate PC buyers. In six months to a year he guesses demand will fan out from the Fortune 100 to embrace the Fortune 500, but it will be another three to five years before "regular users" are buying Risc boxes.

FRANCE'S MIGRATION SA MOVES PROLOG ACCOUNTS SOFTWARE TO RS6000

In France, Paris firms Migration SA and Synchronix Diffusion have signed an agreement to port Prolog-based accounting and administration software to IBM's RS/6000 platform. Migration, which specialises in moving proprietary applications over to Unix, will use the C-based Bal/Abal language and a compiler called ABC - which incorporates Prolog decoders - from two-year-old Synchronix. Migration and Synchronix have already struck VAR deals with IBM to offer these services - Synchronix reckons it takes around 48 hours to port an application. One-year-old Migration, a subsidiary of the Ares & Genover group turned over £300,000 in its first year, and is looking to do £2.5m in 1991. ABC is distributed by AID GmbH in Germany, by M SOFT in Italy and Synchronix will say it will sign Spanish outlets later this year.

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An inside source within IBM was insisting last week that the Is were dotted and the Ts crossed on an agreement for IBM to acquire Apple, and that it will be announced any day - but why should IBM want Apple, how would it harmonise the Mac and the PS/2, how would it keep on board all the Apple employees that work for the company because they hate everything they perceive IBM to stand for? The anti-trust implications of creating a grouping doing \$17,000m or so in personal computers seem daunting, and the only reason that makes any sense would be to prevent DEC getting it first; but late on Thursday, IBM's corporate flack came back to say that he had been as high as the company's General Counsel the only dealings he could find with Apple Computer Inc was a patent cross-licence agreement in 1986, and that there was definitely no substance in the suggestion that it was in negotiations to acquire the Cupertino company.

Esprit's aim - see page one - is to encourage the development of new, European technology rather than a complete workstation per se, and one of the first success stories from the Spirit project will likely be X-windows multi-card software developed by UK firm Harlequin, Cambridge. It runs on the Acorn processor, Sun Microsystems' Sparc chip - which rumour has is now being used as the basis of the original Spirit workstation, (UX No 270), replacing Motorola's 68040 originally penned for use - and has sound. Groupe Bull is reported to be designing some system-level technology around it.

Debt-laden Tinton Falls, New Jersey-based Concurrent Computer Corp has 20 days to respond to an involuntary petition to reorganise the company under chapter 11 of the US bankruptcy code filed by three of its bondholders, who say they took the action in order to maintain the relative positions of bondholders and the banks in negotiations.

The latest benchmarking salvo from Littleton, Massachusetts-based Alliant Computer Systems Corp on its 80860 RISC-based FX/2800 minisupercomputers has it that the box, which sells for under \$2m, exceeded 2 GFLOPS on a linear convolution software routine frequently used in seismic exploration and in a wide range of signal processing applications usually run on a Cray Research Y-MP eight processor supercomputer that costs over \$15m; on a 28 processor Alliant FX/2828, the convolution exceeded 2,145 MFLOPS, which compares with Cray's published figure of 2,012 MFLOPS on a Cray Y-MP eight processor model, and the peak theoretical performance of 200 MFLOPS on a Convex C240 four-processor system.

And Alliant reports that the Argonne National Laboratory in Chicago has installed an FX/2800 80860 RISC-based supercomputer to do research intended to lead to more efficient fuel combustion in cars, heaters and other devices.

Beaverton, Oregon-based nCube Inc reports that Boeing Co and the Alabama Supercomputer Authority have jointly purchased an nCube 2 massively parallel system: Boeing is the systems integrator and facilities manager for the project and the system will have 128 processors, for peak performance of 420 MegaFLOPS and 960 MIPS; no value.

Clearwater, Florida-based Snow Software has released version 3.02c of its report writer which works with accounting software from the likes of Great Plains, RealWorld, Cougar Mountain, SBT, and is compatible with Peach Tree, Macola, MCBA, Platinum, Lotus 1-2-3 and other packages.

Wimbledon, South London-based Planning Sciences plc plans to release a Unix V.4 version of its EIS-EPiC management information system early next month, initially for ICL's DRS 6000 platform, followed by ports for the IBM RS6000 and other systems: presently confined to personal computer and local area network users, applications will be transportable between the two environments and Unix - prices for EIS-EPiC on Unix start at £30,000.

Locus Computing Corp has signed up Kista-based Omicron AB to distribute its MS-DOS-to-Unix integration tools in Sweden.

Stratus Computer's long-awaited Unix V.3-based FTX operating system finally began shipping just before the turn of the year, according to US reports: originally due for release last April the delivery schedule was pushed back twice due to reliability problems.

Motorola Inc has won Englewood, Colorado-based Information Solutions Inc as a value-added reseller of its Delta 8000 series Unix machines, and the company has made its first sale when a long-time customer contracted for multiple Motorola systems under a \$250,000 contract.

Xerox Corp's Ventura Software Inc in San Diego says it is shipping Ventura Publisher, OS/2 Presentation Manager Edition at \$900 for use with OS/2 1.3 Presentation Manager: next up will be a Ventura version to run under Open Look on Unix kit.

Microsoft Corp is expected to beat Lotus Development Corp to the punch by introducing a Windows 3 version of its Excel spreadsheet this week.

Islington, London-based open system software developer Torchraven Ltd also has UK distribution rights to the Supernova database independent applications generator, along with Skill-Advance Ltd based in Finchley, London (UX No 314).

Seems that Alliant Computer Systems Corp has succeeded in persuading Alliant Techsystems Inc, the defence electronics company spun out of Honeywell Inc, to change its name - no word yet on a new name.

Texas Instruments Inc, a decade ago the world's largest chipmaker, has slumped to sixth place in Dataquest's annual table of the top semiconductor companies - leapfrogged by Intel Corp, which is now fifth compared with eighth a year ago: NEC Corp remains top with sales of \$4,952m, 8.5% of the market, followed by Toshiba Corp, \$4,905m, 8.4%; Hitachi Ltd, \$3,927m, 6.7%; Motorola Inc is the top American with \$3,692m, 6.3%; Intel's \$3,135m gave it 5.4% of the market, just ahead of Fujitsu Ltd, \$3,019m, 5.2%; Texas did \$2,574m, 4.4%, and the other three in the top 10 are Mitsubishi Electric Corp, Matsushita Electric Industrial Co and Philips NV, which did \$1,932m for a 3.3% market share; the Japanese share of the market fell to 49.5% from 52.1% on the back of declining prices for memory chips, while lusty microprocessor sales helped US firms to increase their share to 36.5% from 34.9%, the first rise in share since 1979.

It figures - it has been widely suggested that the reason for AT&T Co's dismal showing in the computer business is that all its original computer salesmen, used to selling 3Bs to the captive market of the Baby Bells when they were still part of the AT&T family, had the clipboard mentality - no question of fighting for orders, you simply showed up with your clipboard and filled in their requirements for them on an order sheet - now Paine Webber telecommunications analyst Jack Grubman tells the Wall Street Journal that AT&T managers were growing impatient at NCR Corp's resistance, suggesting that they believed that they could acquire the company "just by showing up".

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The weekly information newsletter for the UNIX™ community worldwide

18 JAN. 1991

London, January 14-18 1991

Number 316

FUJITSU AND SUN "BEGIN TALKS ON CLOSER RELATIONSHIP"

The possibilities of a closer relationship between Sun Microsystems Inc and the giant Fujitsu Ltd emerged last week, as Fujitsu's interest in the Sparc processor as a strategic product became more evident. An inside source claimed that talks between the two companies had already begun, although the likely terms of any agreement that might eventually result remain unclear. The source claimed that Sun is now working closely with Amdahl - 46% owned by Fujitsu - and that a two-phase announcement will be forthcoming. The first phase will involve a high-performance server project using the Texas Instruments Viking superscalar implementation of the Sparc, possibly an amalgam of Sun's Galaxy multi-processor project and the remains of Amdahl's aborted Key effort (UX No 302). The second phase will be an extended technology agreement and software exchange, with Amdahl supplying multi-processing hooks and system reliability features it views as essential. Amdahl's long-term interest is said to be in Sun's Gallium Arsenide developments, codenamed Brut and thought to be under the control of Sun's director of advanced development Dave Ditsel in conjunction with Vitesse Semiconductor Corp - chips are expected around the end of next year.

Influence

According to the source, Fujitsu not only overruled a decision by Amdahl's engineering department to go with the Mips chip, in favour of the Sparc, (UX No 310), but also influenced ICL's 1987-88 decision to use the Sparc, considering it a prerequisite before take-over discussions could begin. Now Fujitsu wants to ensure it has access to all of the necessary enabling technology allowing it to compete effectively with IBM's potentially explosive RIOS Risc effort. Fujitsu, Amdahl and ICL are also amongst those touted as companies waiting at the front of the queue to take a stake in AT&T's Unix System Labs (UX No 314). Sun's motivation for talks with Fujitsu could be its insatiable appetite for more money. AT&T's 20% contribution has now been completed (see page 4), and Sun might try for a similar deal with Fujitsu, allowing it to retain control. Another possibility, given AT&T's bid for NCR and cooling relationship with Sun, is that Fujitsu might take over AT&T's stake. Sun CEO Scott McNealy, speaking on Wednesday evening, said he always replied with a "no comment" to rumours, but did describe Fujitsu as "an aggressive Sparc partner". Fujitsu in Japan told Unigram's Tokyo office that it had a policy of not commenting on rumours, but other Japanese sources ventured that the story could well be correct - adding that the Sun-Fujitsu-ICL combination, with Fujitsu as the manufacturing nexus, could be a real winner against IBM.

DECwindows MOVE TO MOTIF IS NOW COMPLETE

As predicted, (UX No 258), DEC has finally come out and said that Motif is its windowing standard, replacing DECwindows, although DECwindows will continue to be supported. To help software developers design and port applications, DEC has introduced DEC Fuse for Ultrix, which is a lower-case, Motif-based tool for Risc Ultrix. Fuse ships in March and costs £1,460 in the UK. DEC's VAXset CASE tools have also been ported to Ultrix - now known as DECset the tools work in both the VMS and Ultrix environments and ship second half of 1991.

SONY'S LAPTOP MIPSTATION HITS US AT JUST \$10,000

Sony Microsystems Co last week duly launched the first laptop computer built around the MIPS Computer Systems Inc R-series Risc in the US (UX No 312). The News 3250 Laptop Workstation is designed to enable Unix engineers, scientists and researchers to take their machines into the field and is also pitched at software development and technical publishing. It comes with Unix System V.4 on a 20MHz MIPS R3000 Risc delivering 17 MIPS, with 20MHz R3010 co-processor to do 1.8 MFLOPS. Weighing in at 17lbs 12 oz it comes with the Motif user interface, X-Window protocols, TCP/IP and Network File System. A configuration with 240Mb disk costs \$9,900 starting in March with a 406Mb disk for \$11,900 ready in May. External SCSI devices are supported.

80 MIPS VIKING WORKSTATION DUE

Sun Microsystems Inc is reportedly moving on apace with a next-generation 80 MIPS, single-processor workstation built around the 40MHz, superscalar Viking Sparc, which is fabricated in 0.8 micron Bi-CMOS technology by Texas Instruments, (UX No 310, and main story this page). According to US sources the workstation is due for announcement soon and complies with Sparc International's SCD 2.0 definition for Sparc systems. Texas signed up for the Sparc back in September 1988, (UX No 195), in the same breath as it became a second source for Cypress Semiconductor's CMOS Sparc. Cypress is working on a similar superscalar Sparc dubbed Pinochle, whilst LSI Logic is working on a standard 80 MIPS CMOS Sparc in conjunction with Metaflow Technologies and Hyundai Electronics called Lightning. According to a Sun competitor, the TI Viking "is certainly the chip that Sun is betting all its marbles on".

AMDAHL-SUN MACHINES "THIS SUMMER"

Meanwhile Amdahl's plans to build a Risc-based scientific Unix machine using some of the technology from the failed Key Computer Laboratories project, (UX No 309 and main story), are firming up. Initial reports indicated that the Unix mainframe-maker had opted for the Mips Computer Systems Risc chip, but this was revised soon after to it having a preference for the Sparc (UX No 310). US sources last week confirmed that the Sparc is now being used as the basis for the project. However, sources were at pains to stress that the decision was not influenced by its Japanese connection, emphasising that Amdahl has been working with Sun for a couple of years now. Product details of the Sparc system are expected towards the end of the summer.

GALLIUM ARSENIDE SPARCS "SAMPLE THIS QUARTER"

Also coming to fruition is the Gallium Arsenide implementation of the Sparc, a project originally conceived by Sun Microsystems and the now-defunct Prisma Inc, (UX Nos 198, 266). The baton was taken up by SPEC - Systems & Processes Engineering Corp - Austin, Texas, under licence from Sun Microsystems, and SPEC's Gary McMillian says the 200MHz, 200 MIPS design will begin sampling this quarter, though volume shipments are not due until later in the year. The part is to be fabricated by Gallium Arsenide specialist Vitesse Semiconductor Corp, Camarillo, California. SPEC's original plans included satellite and image-processing applications for the processor - it is reported to have a contract with NASA - and says system manufacturers are now showing interest. Sun, as part of the original deal, can licence the technology back, although Sun appears to be working on a separate GAAS project dubbed Brut (see main story).

UNIFORMUM PREVIEW

TYAN AIMS TO FILL 80386 GAP LEFT BY SUN WITH VOYAGER

Tyan Computer Corp, the Sunnyvale, California manufacturing start-up that's been toying with an Intel 80386-based Unix software development machine since its inception 18 months ago, is going to show the box it came into being to produce at Uniformum this month, picking up where Sun left off when it abandoned its Intel-based systems. Tyan has designed a 16.5-MIPS 33MHz 486 system, reportedly from the ground up, to go after what it believes is a sizeable market Sun threw away to pursue a pure Sparc policy. Tyan reckons its machine, tagged the Voyager, could do what the Sun 386i did: an estimated 100,000 units and revenues between \$100m and \$200m. To maximise the Voyager, Tyan has come up with a semi-proprietary bus structure: 64 bits internally, externally an AT. The prototype Tyan will have at the show, and hopes to ship in May, will include 8MB of RAM expandable to 64MB, 210 MB of storage expandable incrementally to 1GB, 150 MB tape backup, 256Kb cache, optional floating point, a 16-inch 1024 X 768 VGA colour monitor, mouse and two 16-bit expansion slots. It will come with SVR4, though SunOS or Xenix will be available, Motif or Open Look, X Windows and Locus DOS merge. A base-level system will be priced at \$10,000. Tyan will attempt to go through value-added resellers with the product.

88open TO PUBLISH ABI GUIDE FOR UNIX V.4

As promised, the Motorola consortium 88open will make its Application Binary Interface Implementation Guide (AIG) for SVR4-based systems available to manufacturers this week. The work will ensure upward compatibility and embraces X-Windows, networking applications and object compatibility. At Uniformum, the group is expected to announce a certification program for both SVR4 systems and applications as well as the availability of SVR4 system test suites. Application test suites will be developed later as the systems are certified. The three-point program is meant to encompass implementations of both the 88000 and Motorola's unannounced next generation of silicon, the symmetric superscalar 88110, a single chip promising to up the 88000's performance three to five times.

TRANSARC TO REVEAL FIRST TRANSACTION PROCESSING WARES

This week at a press conference in New York Transarc is scheduled to announce base technology that systems makers can use to ease development of on-line transaction processing applications. The technology is understood to be a commercialisation of certain features in the Distributed Computing Environment put together last year by the Open Software Foundation, an endeavour Transarc has been intimately involved with, (UX No 280). According to a Transarc spokesman, the company has developed a unique transaction remote procedure call, based on the RPC found in Apollo's highly divisive NCS system, and contributed to OSF by Hewlett-Packard. In addition, it's reportedly come up with commercial grade version of DCE's threading, naming, authenticating, locking, logging and X.500 services. High ranking representatives from IBM, HP and Stratus are expected to be at the debut to give the system software their support and indicate how they'll be using it. The pieces supposedly run on both Unix and non-Unix platforms, and should be interoperable to mainframes. The event will be Transarc's first foray into transaction processing, although that's the market the company was originally formed to service. In six to eight months, Transarc expects to productise software for a transaction processing monitor.

* Somewhere down the road, the Open Software Foundation is reportedly expected to put out a Request for Technology for on-line transaction processing.

NCD ADDS LOW-END COLOUR X-TERMINAL

Network Computing Devices Inc has added a new low-end model to its colour X-terminal range. The NCD14c uses a 14"-diagonal flat screen unit with a resolution of 1024 x 768, and is priced at \$3,000. NCD's other colour model, the 17" NCD17c, was introduced last January and costs \$5,000 (UX No 266). It uses a 20MHz 68020 and two custom ASIC graphics engines optimised for colour X performance. The use of eight bit planes gives 256 simultaneously displayable colours from a palette of 16.7 million on the Sony Trinitron display technology. With NCD's optimised version of the X.11 R4 server, the X-terminal supports the X display manager control protocol, the shape extension for non-rectangular windows, multiple Telnet or LAT clients, both with VT220 emulation, and SNMP-based network management. Communications protocols supported include TCP/IP, SLIP, DECnet and NCD's own XRemote compression algorithm (UX No 265). The \$3,000 US list price includes monitor, 4Mb RAM (upgradable to 8Mb with SIMMS), mouse, serial port, keyboard and Ethernet controller. A software licence costs \$50. Available 60 days from order.

PYRAMID READY WITH "HIGH AVAILABILITY" RELIANT MISERVERS

Pyramid Technology is set to release a new range of high-availability systems called the MIServer Reliant T Series at Uniformum, designed to recover from system failures with less than three minutes disruption to availability. The systems, rated at up to 400 transactions per second and said to support up to 2,000 concurrent users in a dual-systems configuration, is aimed at on-line transaction processing applications that don't require costly full fault tolerance from the likes of Tandem and Stratus. Based on the standard MIServer T Series and enhanced OSx Unix, the Reliant systems include system-level redundancies in a configuration of two systems in concurrent operation, where both systems are live, but the alternate live system takes over with no loss of committed data in the event of a failure. This is controlled by the Reliant Monitor system software, which is based on an expert system, and monitors the state of all subsystems, identifies and isolates faults and executes automatic switch-over when failure occurs. Virtual Ethernet, dual-ported communication and storage subsystems and power/fail recovery software are all supported. Dual Reliant systems can be configured in any combination of MIS-4 systems (with 1-4 processors) or MIS-12 systems (with up to 12 processors).

Intergraph Corp is planning to unveil a new high-end dual-processor workstation, which is claimed to be capable of displaying raster and vector processes concurrently on the same screen. The ImageStation is based upon Intergraph's existing 6000 Series, launched at last year's Uniformum. Prices start at \$107,000 for a system with 32Mb RAM, 670Mb disk and a 27" colour screen, ships are set for April.

Altos Computer Systems will be launching four new boxes: two low-end EISA bus machines - the 400 and 700 - that it will take from its parent Acer, and two high-end additions to its Intel 80486-based Series 5000, (UX No 276), one called the 5820. Altos will also be making SCO Unix 3.2.2 available across its platforms which support up to 200 users.

AGE Inc, San Diego, California, is using Uniformum to launch Release 4 of its XoftWare, allowing personal computers with TMS 340 accelerator boards to act as high-resolution X-terminals. The software supports SCO Unix, Open Desktop and Interactive Unix: it costs \$600. AGE has also established AGE Labs, an X-Windows product testing, benchmarking and analysis centre with a range of hardware and software environments.

Dr Singh's Lynx Real-Time Systems is to announce multi-processing versions of its Posix-compliant real-time Unix operating system kernel for tightly, loosely and snugly-coupled architectures.

DEC BITES THE BULLET AND ANNOUNCES 3,500 FORCED LAYOFFS BY JUNE 30

As part of its campaign to cut expenses by \$1,000m within a year, DEC has announced its first ever compulsory job losses by saying that it will be forced to lay off 3,500 people from its current workforce of 123,000 by the end of its fiscal year, June 30 1991. DEC had hoped to avoid forced job losses by initiating a programme of voluntary redundancies, but by the end of its last fiscal year only 3,200 employees had accepted voluntary packages, while a further 500 workers had trickled out with severance pay in the first quarter 1992. DEC has made no public announcement as to where these job cuts are to come from but said it was likely that most would be axed in the US. A spokesman added that nothing should be inferred from this statement regarding DEC's second quarter performance. Analysts at SG Warburg and Bear Stearns think that DEC should slash a further 15,000 jobs, saying that the company's recent acquisition of Mannesmann Kienzle, (UX No 314), added another 3,900 workers to its payrolls.

INTERACTIVE, DEC WIN US VETS CONTRACT

Interactive Systems, bidding as a subcontractor of Lockheed Integrated Solutions, won a chunk of the estimated \$298m contract awarded by the US Department of Veterans Affairs. It says it could see \$12m over 10 years supplying Posix-compliant 386/486 Unix software and VP/ix to integrate the VA's multi-vendor hardware environment. The other big winner on the hardware side was DEC, but other subcontractors include Everex, Apple, Hewlett-Packard, Sony, Microsoft, Oracle, Sybase and Uniplex.

LOTUS 1-2-3 WILL BE READY FOR HP-APOLLO USERS BY MID YEAR

Having seen Lotus 1-2-3 available on rival Sun workstations since last January (UX No 266), Hewlett-Packard has now announced a joint marketing and development agreement with Lotus Development Corp to move the popular PC spreadsheet over to its Unix-based HP Apollo 9000 Series 300 and 400 workstation family, which use the Motorola 68030 and 68040 processors. Under the terms of the agreement, Lotus will also port its DataLens technology, giving access to external databases directly from 1-2-3. The DataLens toolkit is a set of programming tools that allows third parties and corporate programmers to build connections or drivers between their data sources and Lotus 1-2-3 spreadsheets. It should become available in mid-1991, and will be distributed exclusively by HP through its worldwide direct sales and marketing channels. Lotus 1-2-3 is also available for Intel-based Unix machines (UX No 287).

GENERAL AUTOMATION HAS THE ADVANTAGE SERIES WITH PICK R91

Anaheim, California-based General Automation Inc, in which Sanderson Electronics Plc, Sheffield is the controlling shareholder, has introduced a new generation of Pick systems running the new R91 Enhanced Pick Application Environment and called the Advantage Series. The initial models, all based on the racey 50MHz version of the Motorola 68030, are the A600 for up to 256 users, the A800 for up to 512, and the dual processor A800/2 for over 1,000. The basic system end-user prices are \$93,950, \$164,950 and \$375,950 respectively. System A600 and A800 ships start this month; the A800/2 follows in June. The A600 has 64Kb cache, 16Mb memory, 376Mb disk, terminal input-output system with 16 ports, and a 150Mb tape streamer. The A800 comes with 64Mb memory, 1.5Gb disk, controller for 64 ports, half-inch and 1.2Gb digital audio tape. The A800/2 doubles all the random access storage; in full configuration for 1,024 users, it has 512Mb and 21.2Gb disk. All require an uninterruptible power supply. Feature enhancement kits to upgrade some earlier-generation General Automation and CIE Systems machines to Advantage technology cost from \$15,550 to \$61,950 and include the appropriate Advantage Series processor, memory and Pick R91 software and will be ready in April.

APPLE EXTENDS X-WINDOW SYSTEM OFFERINGS FOR MAC...

Apple Computer Inc has extended its X Window System offerings for its A/UX Unix with the launch of MacX 1.1 and X-Window System 2.1. The new versions are compliant with the latest release, X11.4; MacX 1.1 is an X-Window display server that runs under both Apple Macintosh and A/UX environments, conferring X-Window compatibility while retaining full Macintosh functionality, and adds full support for cut and paste of both text and colour graphics between environments to the 1.0 release as well as offering up to three times the performance. It has full MultiFinder support, support for multiple monitors, and a built-in window manager that enables X applications to appear in Mac-style windows on the desktop. X Window System 2.1 includes both MacX 1.1 and X11, the latter only for experienced Unix and X customers requiring a standard X environment; it does not provide the Macintosh functionality in MacX, but provides client applications, developer tools and utilities to develop X applications. MacX 1.1 needs a Mac with 2Mb, at least two floppy drives and Mac System 6.0.4 or later. X-Window System 2.1 for A/UX is for any Mac II or the SE/30 with a minimum 4Mb, 80Mb hard disk, and A/UX 2.0 up. They are all due to ship at the end of the month, at \$300 for MacX for MacOS. The X-Window System 2.1 for A/UX is \$350, plus \$55 for a right to copy, \$200 for the manuals and \$4,000 for a full site licence.

...AS PACIFIC PARALLEL OFFERS TRANSPUTER-BASED SOUP-UP FOR NuBUS MACINTOSHES

The Apple Computer Inc Macintosh remains a favourite host for a variety of unlikely back-end high-performance processing systems, and San Diego, California-based Pacific Parallel Inc has introduced a parallel processing system for the Macintosh based on its Transputer module. Parallel claims that a single NuBus board system with four of the Inmos International Plc microprocessors on board provides more than 23 MegaWhetstones of computer power, roughly 10 times that of the Macintosh IIfx, for under \$3,200, and occupies just a single NuBus slot. The hardware comes bundled with development tools for use with the MPW development environment, and C, Fortran, Pascal and Occam compilers are currently available, with C++ and Prolog to be available "soon". The company also offers UPool and Transtools for host access and processor scheduling; vector, matrix and signal processing libraries; and the Express and Strand-88 parallel operating environments as separately-priced options. The Transputer modules are daughter boards measuring 2.15" by 3.5" with one T-805 Transputer and 1Mb to 8Mb memory, and for the really ambitious, there is an external chassis that can contain 64 processor modules - costing under \$50,000 with 1Mb per processor, yet claimed to deliver the power of a Cray Research Inc X/MP-4 supercomputer if anyone can program it to release that kind of performance.

SUPERCOMPUTING SOLUTIONS CLOSES ITS DOORS

Supercomputing Solutions Inc, the San Diego company that was created to take over the development work that had been being done by Concurrent Computer Corp on the Princeton University Navier-Stokes computer, a 64-bit parallel processor, has run out of operating capital and is unable to pay interest on \$1.3m of notes due to the company's founders. It is closing its San Diego facility and laying off its entire technical staff. It lost \$3.2m in the third quarter and had been counting on an \$11m renewal of a Department of Defense contract to develop a 1 TeraFLOPS computer for the Direct Solution of Turbulence.

AT&T TO BUY FINAL TRANCHE OF SHARES FROM SUN, TAKING ITS STAKE TO 20%...

That cash junkie Sun Microsystems Inc is hungry again, but it has nearly exhausted its source of funds under its agreement with AT&T Co, but there are a few shares left to be issued in that kitty, and Sun is raising another \$13.7m by selling the final tranche, 491,755 new shares, to the phone company. Under the three-year agreement announced on January 6 1988, Sun was able to sell AT&T shares representing up to 15% of the enlarged equity at a premium of 25% to the ruling price in the market. The agreement allowed AT&T to take its holding to 20% - and no more - by buying additional shares in the market; it has indeed done so and now has 20%. Its thought that AT&T's stake would remain unchanged in the event that Sun does sell out to Fujitsu - see front page.

...AS NCR CONSIDERS A NOVEL RIGHTS ISSUE IN ITS EFFORTS TO SHAKE OFF AT&T

Following the news that a group of shareholders is suing NCR Corp in an apparent attempt to clear the way for a takeover of the Dayton, Ohio, computer maker by suitor AT&T, and the news that AT&T is planning to lay people off within its computer systems division, the New York Times now says that NCR is mulling over contingent value rights as a possible response to AT&T's bid. Under this type of rights issue a target price is set for company's shares to reach within a set time period. If the shares do not reach the price within that set time period, the company, in this case NCR, promises to pay a one-time dividend to shareholders to make up all or part of the difference. However, the NCR board is said to be only at the preliminary stages of making such a decision, which may be dismissed as too gimmicky. This rights issue is only one of NCR's possible strategies in what is being dubbed its "just say no" defence. Another avenue being explored is for a friendly company to take a stake to block AT&T. However, it is widely believed that NCR is having no luck in finding a white knight, which adds credence to tales of a contingent value rights issue. The brains behind such a rights issue is likely to be Martin Lipton, a take over lawyer at Wachten, Lipton, Rosen & Katz, who is advising NCR and who coined the idea two years ago calling it share price protection preferred stock. Such an offering has never been used before in a major US takeover battle although one was proposed by Consolidated Gold Fields Plc in 1989 in the hostile bid by Minorco SA. However, Minorco's bid was defeated in the courts and Consolidated was later acquired by Hanson Plc and so never honoured the dividend. While such an issue might stand a chance against a paper offer, it is unlikely to thwart AT&T's cash bid. Furthermore, NCR would likely have to borrow heavily to finance the issue. Back in Dayton, Ohio, NCR chairman Exley has told the Dayton Daily News that if AT&T completes its takeover, each NCR employee covered by a non-union-negotiated NCR retirement plan would be credited with an extra five years age and service if they were fired within two years of a management change.

BULL CALLS ZENITH TO PARIS TO TALK ABOUT FUTURE PLANS

The lords and masters of Groupe Bull and Zenith Data Systems, its 1989 American purchase, were all reportedly gathered in Paris last week sorting out their collective futures. Insiders left behind in the US said budgets, programmes and organisation were on the agenda. The emphasis was supposedly heavy on organisation which insiders expect to sharply contract given the French government's reluctance to continue underwriting Bull's losses past last year. Zenith people, believing Bull will try to tighten its grip over their company, figure there'll be a series of announcements made on the 18th of this month, but that is still pure speculation. The notation that Zenith will be bullied into submission probably holds water however. We hear Bull has gone to Olivetti to replace dismissed Zenith president, John Frank, and brought in its own product development vice president Phillippe Robert to replace Andy Czernak.

CONCURRENT WORKS FLAT OUT TO AVOID BEING FORCED INTO BANKRUPTCY

Concurrent Computer Corp of Tinton Falls, New Jersey last week fell prey to a petition to put the company into involuntary bankruptcy under Chapter 11 of the federal code, which has been filed by three of its bondholders. The holders say they took this action in order to maintain the positions of the holders and the bank group during the debt restructuring negotiation period - they fear that their interests will be subordinated to those of the banking group as Concurrent tries to satisfy its bankers and negotiate a new loan agreement. It now has up to 20 days, unless extended, to respond to this petition. Last autumn Concurrent revealed that it was unable to satisfy all the financial covenants of its new bank credit agreement - it currently has around \$55m owed in senior bank debt, \$110m in subordinated debt outstanding. However, the banks extended Concurrent's existing informal grace period indefinitely to enable the company to complete its revised business plans and capital restructuring proposal, a proposal that has not yet been made public. The company's most recent published results revealed first quarter net losses of \$10m - a loss that had grown from \$1.6m the year before - on turnover down 20% to \$70m. The current head of Concurrent Computer Corp - a company that was created on a buyout from Perkin Elmer Corp which then acquired Massachusetts Computer Corp - Denis Brown, said that he will intensify negotiations with the shareholder committee and the banks to develop a recapitalisation deal. He added that second quarter results reflect the company's achievement in exceeding its order goals and is confident that Concurrent can return to profitability following a successful debt restructuring. Brown also said that the company has proposed that the restructured shareholder debt be subordinated to its existing lines of international bank debt.

BANKRUPT JAROGATE ACQUIRED BY DATA DYNAMICS, WHICH THEREBY DOUBLES SIZE

Hayes, Middlesex-based Data Dynamics Ltd has acquired Jarogate Ltd of Surbiton, Surrey from receivership for an undisclosed sum, (UX No 309). Data Dynamics was founded in 1966 and is celebrating its silver jubilee this year - it manufactures single-user and multi-user computer systems under the SigNet brand name, as well as acting as a distributor for companies such as Mannesmann Tally and NCR's ADDS terminals. It staged a buy-out that left management holding 51% in April 1986, when its primary thrust was as a printer distributor. It had previously gone into receivership in 1981, when it was acquired and subsequently wholly-owned by venture capital group Innotech until the buyout. It has a £4m turnover - it had set £4.5m as its target for 1986 - and has approximately the same size installed user base as Jarogate, which means that post-merger Data Dynamics has a user-base of around 8,000. Ten people have been transferred over from Jarogate to Data Dynamics' offices and Jarogate founder Robin Tracey has become sales director for the enlarged company. The Jarogate name will disappear as the company becomes integrated within Data Dynamics but the Sprite range of Intel-based multi-user Unix systems will continue to be sold and supported under its brand name.

SEQUENT SEES DOWN Q4, WEAK 1991

Sequent Computer Systems Inc warns that earnings per share for the fourth quarter to December 29 will be lower than the \$0.23 per share for the corresponding period last year: the company says that while revenue for the quarter is expected to be at least 50% up on the \$47.8m for the period a year ago, net earnings are likely to be in the range of \$0.10 to \$0.20 per share.

SPARC NEWS

US and Pacific rim companies building workstations compatible with Sun Microsystems' Unix-based Sparcstation series left a disappointing impression of the so-called "Great Strategy" that Sun and its Sparc International supporters club have for the Risc part at last November's Comdex extravaganza in Las Vegas. Now two UK companies are setting out to prove that they can do better.

A FE OFFERS OpenStation TO EUROPE...

A FE Computers, Sutton Coldfield, West Midlands, is launching the OpenStation S20, built upon the LSI Logic/Opus Systems Inc Sparckit. The S20 is the first member of a planned series of workstations, and uses a 20MHz version of the Sparckit in what AFE Computer's Ian Smith calls an "expanded pizza box" design. Running SunOS 4.1-compatible Unix, with from 8Mb to 64Mb RAM, up to four 213Mb disks, CD-ROM, 3.5" floppy and a 19" colour screen, a base configuration with 8Mb memory, one hard disk and 19" monitor starts at £7,000. Although the workstation is being targeted at the European market, AFE Computers will debut the 12 MIPS S20 OpenStation on Sparc International's stand at the Uniforum show in Dallas later this month. AFE Computers is currently setting up value-added reseller channels across Europe for its box, and claims it will deliver a service and support organisation for OpenStation that the US and Pacific rim Sparc-builders cannot match - although it emphasizes it won't compete head-on with Sun. AFE Computers - part of the ten year-old AFE Group - was set up last year specifically to bring a Sparc system to market. It will also offer the OpenStation to the US market through its parent's subsidiary in Charlottesville, Virginia, and in Europe via a German operation just getting off the ground. AFE Computers has a team of 20 working on the Sparc project and is currently recruiting sales and support staff. Manufactured in Sutton Coldfield, AFE Computers expects to ship 2,000 S20 OpenStations over the next twelve months. It is also readying a Sun GX-compatible graphics accelerator board for the workstation which will be out in April. The AFE Group has around 100 employees and a turnover of £8m.

...WHILST MICROMUSE TARGETS UK

Meanwhile, 1989 start-up London-based MicroMuse Ltd - primarily known as a systems integrator - will be targeting the UK market with its 18 MIPS, Muse/ix 2000 workstation. It is built around Opus Systems' 25MHz LSI Logic Sparc board-set rather than the chip-level kit, and is comparable with Sun Microsystems' Sparcstation 1+, claims managing director Chris Dawes. With from 8Mb to 64Mb RAM, 207Mb disk, Ethernet, three SBus expansion slots, two serial ports, 16" colour monitor, SunOS 4.1 and X-Windows X11.4, prices start at £7,500. OSF/Motif, and probably IXI Ltd's X.desktop manager will be offered on the workstations, and MicroMuse also plans to offer X-Windows X11.4 server code, GNU C, GNU EMACS and XV imaging utilities free of charge - except for the cost of the tape - to Sparc system users throughout the UK. MicroMuse will configure and integrate the Muse/ix 2000 where required, and claims an eight-hour response time for maintenance. The firm is looking to ship up to 400 of the workstations this year.

FUSION IS LATEST US SPARC BUILDER...

The swelling rank of US Sparc builders is about to expand again with the addition of another member, a start-up by the name of Fusion Microsystems, an entity that's so new it hasn't even been incorporated yet. Fusion is apparently the brainchild of the Silicon Valley market consultancy Desktop Strategies, a two-year-old Sparc-focused operation started by Fujitsu's former business development director Greg Leonard and his colleague, Fujitsu's ex-worldwide marketing manager for Sparc Susan Mason after they left the Japanese company. They are setting up Fusion for a client they decline to identify right now who apparently wants a separate vehicle to distribute his Sparcettes worldwide - which is what Fusion aims to do starting in the US, and then moving on to Europe followed by the Far East. Leonard and Mason, while keeping Desktop Strategies going, intend to be Fusion's interim management, formally debuting the new concern at Uniforum in the Sparc International booth.

...AS PC MASS MARKETEEER NORTHGATE

SETS SPARC WORKSTATION FOR FEBRUARY

Northgate, the American personal computer mass marketer which has taken a licence for the LSI Logic/Opus Sparckit, (UX No 310), says it'll put a 20MHz version of the OmniSparc workstation on the market in February, following that up two months later with a 25MHz unit. It figures to move 150 systems a month initially, selling them strictly through telemarketing to accounts that already have Sun Microsystems boxes. Apparently the company has a couple of places that might be interested in taking the things in volume. A base system with 8Mb RAM, 200Mb drive and a monochrome screen should list at \$7,500, according to vice president Rob Ricks.

SPARC SPOTS

Nihon Sun Microsystems has reported that in the two months since the SparcStation 2 was released in Japan, orders for 3,000 machines have been taken. As a result of these impressive figures, Nihon Sun plans to increase its direct marketing activities and support of the activities of its distributors, including new distributor Matsushita. Sun targeted sales of 18,000 SparcStation 2s in 1991, and expects total workstation sales to be around 30,000 units, reported Nikkei Sangyo newspaper.

Redland, California firm Young Minds Inc is aiming to take advantage of Sun Microsystems' planned strategy to be distributing all software for its workstations and servers on compact disc by the end of this year, with its CD-Maker - a CD-ROM solution. CD-Maker comprises Sony CD Write-Once and YMi's own Makedisc formatting and driver software. The combined package costs \$35,500 for the Sun-3, Sun-4, Sparcstations and personal computers. Makedisc software is also available separately for the Sun line, Data General's AViiON workstations, Hewlett-Packard's 9000 series - and Apollo workstations, IBM's RS/6000, DEC Ultrix systems, the NeXT computer and MS-DOS-based personal computers: it costs \$7,000.

TeleSoft AB and Software Components Group have agreed to convert the Telegen2+ Ada Development and Run-Time System to Sparc-based workstations and servers from Sun Microsystems Inc: Telegen2+ will provide users of Sparc-based hosts with a merger of TeleSoft's TeleGen2 version 3.23 Ada development system and pARs, a validated run-time system based on Software Components Group's standard pSOS+ real-time operating system; Telegen2+ will be available for Sparc-based hosts at an introductory price of \$24,700, with target support for the Motorola 680X0 family, from February 1; the system is also available for Sun-3 and VAX/VMS host systems.

UK distributor Hawke Systems, Slough, Berkshire, is to begin selling Sun Microsystems Sparc systems following a deal signed recently.

Meanwhile, Frontline Distribution, Basingstoke, Hampshire, is to begin distributing Aurora Technologies Inc's Multiport boards for Sun Microsystems Sparcstations in the UK: a top of the range Multiport 1600S supports up to 48 users.

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Informix, which has sold its relational database products on to ICL systems for a number of years, has signed a two-year, £1m worldwide deal with the Fujitsu sibling to supply database software for its DRS 6000 Sparc boxes and 80486-based DRS 3000 machines.

Littleton, Massachusetts-based Alliant Computer Systems Inc reports that the University of Southern California has bought an 80860 RISC-based FX/2800 supercomputer, and has linked it to IBM, DEC and Sun Microsystems workstations over a high speed FDDI fibre network: Alliant and the university also plan to team on research into new FDDI technologies and applications. And Alliant has sold an FX/2800 to the Sandoz Pharma AG division of Sandoz in Basle, Switzerland, which wants the \$1.2m FX/2800 for design of new drugs. Meanwhile two FX/2800s have gone to Arco Oil & Gas Co, Plano, Texas, for seismic research and oil exploration.

The Open Software Foundation has organised a series of three-day seminars around Europe to promote its various technologies: opening in Munich on February 18, the show moves to Copenhagen and London before reaching Paris on February 27.

In addition to its plans for a low-cost, entry-level RS/6000 machine, (UX No 302), IBM is expected to offer upgrades for the higher-end models - possibly incorporating the 41Mhz Rios Risc part unveiled at Unix Expo, (UX No 307) - improved graphics performance options are also thought to be in the pipeline.

Correction: graphical user interface start-up Open Inc, Colorado Springs, Colorado, (UX No 315), dispatched a missive to the press last week saying that it is not related to Via Systems in any way - it just shares the same building as the Pick-popper and will be moving out as soon as possible - which explains why a telephone call to Open is answered "good morning, Via Systems."

Brussels-based communications software house Experteam SA has released a CCITT 1988-compliant version of its PAD and Host PAD applications for Unix systems: emulating CCITT X3, X28 and X29 protocols, the software supports remote logins and is available now on AT&T 3B2, ICL DRS 6000 and Siemens MX systems - ports for IBM's RS/6000 and SCO Unix-based personal computers will follow.

The European X User Group is holding its annual general meeting on January 24th at the Institute of Electrical Engineers in London.

unigram·x is published weekly by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH. Telephone +44 (0)71 528 7083. Fax: +44 (0)71 439 1105

Publisher: Simon Thompson. Circulation Manager: Brigit Ingham. Editor: John Abbott. Editorial Team: William Fellows, Mike Faden.

Subscription rates on request.

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Chairman of Groupe Bull SA Francis Lorentz was in Tokyo towards the end of last year, and was interviewed by the Nippon Keizai Shimbun, which challenged him to explain how Bull could be a member of the Open Software Foundation when its partner in Japan, NEC Corp, is a staunch member of Unix International: he saw no contradiction, since he expected the barriers between the two organisations would at some stage fall; he also said that Bull would follow customers' wishes with regard to operating system software - and in fact licenses System V.4 from AT&T; talking about the potential of the European market and especially Eastern Europe, Lorentz contrasted the situation of Japanese manufacturers, which have 70% to 80% of their home market, with the European market, where European manufacturers control only 20% to 30%.

NEC Corp has stepped up its commitment to MIPS Computer Systems Inc's R-series RISCs and is now promising samples of the VR4000 chip in April this year, followed by the high-speed ECL R6000 in July or August; NEC launched the 26.4 MIPS VR3000 in July last year, followed in December by the 32 MIPS version; at the same time, NEC is to release cache memory chips to boost RISC performance, including the uPD64741LP and the uPD46710LN; they have 15nS access times and sell for \$160 apiece in sample quantities.

Hull-based research company Butler Bloor Ltd, which caused a stir last year with its survey "Database: An Evaluation and Comparison", has started the new year by releasing what looks to be an equally interesting appraisal of "The Future of Software": its main findings are that traditional company structures must be changed in order to benefit from information technology - for example, a company's director of information technology should have as high a status as the managing and financial directors, and that object-orientated methods and metatools are crucial to the future of software; available from Butler Bloor, the report sells for £420.

Oracle UK reckons it sold more copies of Oracle and its tools for the IBM RS/6000 than for any other mid-range machines over the past four months: it claims sales to 58 companies, including blue chip British Airways Plc, British Telecommunications Plc, British Railways Board and British Petroleum Plc.

Rebel Unix user group, the User Alliance for Open Systems, is to publish its report "Overcoming Barriers to Open Systems Information Technology," (UX No 299), at the end of January according to US reports.

The Virginia Department of Health is installing a \$4.6m state-wide NCR Tower computer system - still a seller despite last year's launch of the Intel-based Series 3000: users will have transparent access across multiple networks, computers and software that will comprise a single system; the system relies on a network of Tower computers to collect and distribute information across multiple vendors' systems, and the Towers running Unix will be placed in local, district and regional sites throughout the state, as well as the department's division headquarters in Richmond, Virginia.

Turns out Unix hasn't lost as much money as we all imagined. According to financials Unix System Labs filed with the securities and Exchange Commission - the first official figures ever made public, we might add - Unix lost \$1.8m in 1988 but followed that up with \$4.2m in the black in 1989 and \$600,000 in earnings the first nine months of 1990. Unix revenues went from \$49.3m in '88 to \$48.4 the first nine months of 1990.

NEC has decided to use its Australian and Singaporean subsidiaries to develop software for the UNIX market. Both NEC Singapore and NEC Information Systems, based in Sydney, have until now developed mainly for mainframe, office and supercomputers. The plan is to bring 5 and 6 employees respectively from the subsidiaries for training in Japan, and then once they return, to begin full-scale software development activity. The move possibly points the way to the release of the workstations the NEC 4800 in the Australian and SE Asian markets.

Unix System Labs wants its marketeers to stop being such pussycats and start growling more like little tigers: it now thinks it has found an appropriately aggressive leader in Dutch-born Roel Pieper, newly recruited as USL's marketing VP from Software AG, where he was VP of product planning. At least he'll be easy to spot in a crowd - the man is 6'6".

Risc has won another supporter, in the form of Asterix. No, not the Goscinnny and Uderzo-created cartoon character Asterix the Gaul, who always licked the Romans after imbibing copious quantities of a magic potion, but Asterix the document preparation package for Unix, developed by Applix Inc, Westboro, Massachusetts: available for DEC's Mips Risc systems Sparc-based machines and X-terminals, Asterix includes a graphics-based word processor, macro tools and a spreadsheet. Supporting OSF/Motif and Open Look, Asterix costs between \$700 and \$1,000.

unigram·X

24 JAN. 1991

The weekly information newsletter for the UNIX™ community worldwide

London, January 21-25 1991

Number 317

OPEN SOFTWARE FOUNDATION FACES ANTI-TRUST INVESTIGATION BY US GOVERNMENT

The United States government is investigating the Open Software Foundation for possible antitrust violations, specifically targeting the consortium's vaunted RFT scheme for acquiring technology. Lawyers at the Federal Trade Commission's Bureau of Competition Litigation Division are seeking interviews with third-party software vendors that may have been adversely affected by OSF's controversial business practices, looking for evidence of violations of the US antitrust laws. It has yet to be ascertained whose complaints instigated the "non-public" investigation or how many ISVs and other firms are being approached. FTC investigators are telling third parties that all information and documents voluntarily provided to the investigation, including the identity of the informants, will be treated confidentially and are even exempt for disclosure under the Freedom of Information Act. The government investigation comes amidst mounting industry reports that at least one disaffected ISV is preparing to launch antitrust litigation against OSF.

Sensitive

Sources close to IBM, the most high profile of OSF's famous founders and the company most sensitive to antitrust charges, report that IBM legal counsel has cautioned IBM executives to modify the company's relationship with OSF. IBM lawyers have reportedly recommended that joint technology submissions by OSF sponsors to the OSF RFT process should be curtailed, in part to minimise exposure if OSF technology is legally encumbered. Such a position could jeopardise the joint IBM/Hewlett-Packard submission of a single network management API, made to OSF recently in response to its request for Distributed Management Environment (DME) technology, one of its latest and still undecided RFTs. Criticism of OSF's RFT procedures, business terms and conditions and technology selections began to surface last March when a group of 13 software companies, concerned with their continued viability, met in California to discuss amongst themselves how to deal with an entity as powerful and potentially lucrative as OSF. The Foundation allegedly offered ISVs less than fair market value for their technology, priced finished product below market value as a competitive hedge and ultimately threatened the very existence of a software industry (UX No 275). The group decided to petition OSF "to adopt a business model for acquiring technology that is economically viable to end users, OSF and technology providers." Since then, however, OSF has done little to change the way it operates. ISV's continue to be disaffected by the amount of sponsor technology and the amount of money it pays for the technology it adopts.

UNPRECEDENTED SHOW OF USER POWER SETS THE SCENE FOR UNIFORM

What Unigram.X offered readers as a good bet back at the end of last year has proved a winner, (UX No 314). The myriad of organisations representing corporate and government Unix users around the world - with a combined purchasing power of over \$100 billion - will sit around a table in a Dallas hotel on the eve of this week's UniForum, for a meeting "without an agenda." The assembled groups will try and establish some common denominators in their respective attempts to speed up the development and adoption of open systems-based strategies in the information technology industry. The get-together has been convened under the auspices of an X/Open group user council meeting, and will be led informally by Walter de Backer, director of informatics at the European Commission. As a starting point, De Backer is expected deliver his views on the need for the groups to begin converging their often duplicated activities, explore common ground, differences, and methods of persuading vendors to satisfy their demands. At the very least it is hoped there will be enough agreement to go forward to another meeting, but as an X/Open spokesman warned last week, "if they all disagree on the big issues, then there are problems." Faced with rapid advances in open systems technology there is growing pressure from corporate and government users for computer suppliers to adopt, and make open systems solutions generally available. Groups attending the meeting include the User Alliance for Open Systems, the Petrotechnical Open Software Corporation and the Corporation for Open Systems from the US, Japan's Sigma User Association and ETIS '92, a newly-formed association of European telecommunications companies, which includes British Telecom plc and Telfonica de Espana SA.

SIEMENS SIGNS WITH AT&T UNIX LABS TO DO SECURE UNIX FOR INTEL 80386

Yet a further indication that the hearts of the two Open Software Foundation sponsors that make up Siemens-Nixdorf Informationssysteme AG are not really in the alternative Unix club, the Munich-based manufacturer has joined forces with AT&T Co's Unix System Laboratories Europe to develop the Enhanced Security extension to Unix Systems V.4 for Intel Corp 80386-based machines. Siemens-Nixdorf will add the features and functionality needed to enable the operating system to achieve F4/Q4 certification from the German Information Security Agency, as well as B2 certification from the US National Security Center. The German standard has been established because the US standard is primarily a military standard and it has been difficult to get security certifications for equipment from Europe.



88open "Soft Wares" Giveaway

UniForum
Dallas, TX
January 22-24

88open is giving away "soft wares" at UniForum! Just look for neon displays at booths of participating companies throughout the show, or see 88open to find out how you can collect five different "soft wares" - FREE!

We're at booth #1942 on the main floor.
See you there!

HP PUSHES COMPUTER ASSOCIATES TO UNIX COMMITMENT AT LAST...

Computer Associates, the world's largest independent software vendor with \$1.3 billion in sales and a strong distaste for Unix, climbed down off its high horse last week and seriously entered the Unix lists for the first time. At the instigation of Hewlett-Packard, the two are joined in a strategic alliance that will see CA port its existing and widely used systems management, database management and business software to HP-UX, develop more from scratch and sell everything it churns out directly to its sizeable installed base. Properly managed, their co-marketing agreement will put HP's 9000/800 Unix boxes in striking distance of IBM's large commercial mainframe accounts, 90% to 95% of which currently run CA software. The same is true of commercial DEC VAX sites. CA's change of heart about Unix is complete enough for it to have also joined both Unix International and the Open Software Foundation, where a former CA executive, Dave Tory, is now president. CA's arrangement with HP comes as much from HP's vigorous courtship and the feeling of synergy they have as it does from the diffidence towards commercial Unix other potential partners such as IBM and DEC have exhibited. Still CA's relationship with HP is in no way exclusive and the company says it is evaluating moving its software to other species of Unix besides HP-UX including OSF/1 and SVR4. It must also evaluate how it will handle the Transarc OLTP technology HP adopted last week (see page 3). Until it makes those decisions, CA will focus on the first stage of its HP pact: the co-development of systems management software including production control, storage management, security, control and audit, data centre administration and performance management and accounting. Products are expected in 12 months. The second phase will focus on financial accounting, manufacturing, warehouse and logistics management and human resources as well as a database management software. The latter may result in the development of a standalone HP-UX DB system.

...AND WINS MAJOR OEM, SOFTWARE DEAL FROM MAI BASIC FOUR

This week Hewlett-Packard is expected to align itself with the old MAI Basic Four in a pact that will see MAI, a long-time Unix holdout, gradually retire its proprietary hardware, substitute HP 9000 boxes instead and move its juicy applications software base, mostly manufacturing packages, over to HP-UX. HP sources say the hardware deal will be worth \$250m to them over three years. The alliance, like the one last week with Computer Associates, is one of a series of agreements HP intends to enter with major third parties as a way to expand commercial sales of 9000 boxes. Others in the works reportedly involve Information Builders and possibly Software AG.

PRIME TO RESELL EPOCH SERVERS AND SOFTWARE

Epoch has signed Prime Commercial Systems and Compu-tervision CAD/CAM Systems to a worldwide VAR agreement to resell Epoch-1 InfiniteStorage servers and Renaissance software. Epoch's server line, which now includes a new 20-series single cabinet configuration integrating the family's optical disk jukebox, are NFS and TCP/IP compatible.

BULL WEIGHS IN WITH 80486 PROSTATIONS

Bull HN Information Systems Inc is introducing a new range of Intel 80486-based Unix workstations at Uniforum this week. The DPX/ProStation runs SCO Unix, and Bull's DPX graphical user interface, which allows users to run MS-DOS applications in multiple windows. Like the NeXT Inc computer, DPX/ProStations come bundled with a database, desktop publishing, spreadsheet and electronic mail software. Prices start at \$13,000 in the US - a UK launch is not expected until sometime next month. Bull says that its DPX/2 Model 510 minicomputers based upon Mips Computer Systems' R6000 ECL Risc chip are now shipping - the first went to a Nokia Data customer: however deliveries of the multi-processing DPX/2 Model 360, based upon Motorola's 68040 are not expected until March.

PRIME ADDS TO EXL LINE; PICK, NETWARE ON ALL ITS UNIX KIT

Prime Computer Inc last week expanded its open systems offerings by announcing that its Prime Information Plus version of the Pick operating system database, which is already available on its high-end MIPS Computer Systems Inc RISC-based machines, is now available on all its Unix systems, as its Prime EXL implementation of Novell Inc's Portable NetWare communication software. Prime has also added the EXL MBX 486 at the top of its lower range of Intel iAPX-86 family Unix machines. The software is source and object code-compatible with the version of Prime Information on the 50 Series minis so that applications can run under both Primos and Unix without conversion or recompilation. Prime Information Plus on the EXL line is from \$350 for one user to \$145,600 for 512 users and will be available on the EXL MBX Series systems in April. The EXL Portable NetWare incorporates SPX/IPX to TCP/IP gateways and it is claimed to be unique in that it integrates into one system communication gateways that link NetWare local nets to the entire network. Full systems start at under \$30,000. A typical configuration on an R3000-based EXL 7330 with 24Mb memory, 64Kb cache, 663Mb disk drive, 120Mb cartridge tape, Ethernet controller, console, 16 asynchronous lines, RISC/os Unix, TCP/IP, Network File System, Portable Netware, ARCserve back-up software and Monitrix Network Management is \$38,027. A similar configuration of the EXL MBX 486 system is \$31,884, and both start shipping in April. The EXL MBX 486 runs Unix System V.4 and supports up to 74 asynchronous connections and up to 64Mb memory. It has synchronous support for X25 and SNA, Ethernet controller, parallel printer port, nine-track tape, a 150Mb cartridge tape and up to 876Mb internal disk. Out now, it is from \$15,900.

ALL ROLL OVER AT IBM

IBM last week announced a re-shuffle amongst its top officials. Ned Lautenbach, formerly general manager of IBM's applications solutions division becomes managing director of operations for Asia Pacific in Tokyo. He is succeeded by Bernard Puckett from the data systems division, who in turn is replaced by Nicholas Donofrio, who, as president of the advanced workstation division, was responsible for the RS/6000. William Filip, assistant general manager, personal systems and advanced workstations marketing, moves into the position vacated by Donofrio. Filip's position is filled by Joseph Guglielmi, though its renamed general manager of marketing and business development for the personal systems line. Analysts regard the moves as rewards for jobs well done.

DISTRIBUTED COMPUTING IS PART OF UI'S LATEST UNIX ROADMAP

This week Unix International publishes its 1991 edition of the Unix System V Roadmap, the document that plots the direction Unix development will take and the timeframes in which the technology will be ready. This second edition outlines UI's plans to pursue three market segments. Accordingly, UI is supposed to have its version of Distributed Computing architecturally defined by early in the second quarter, with the first pieces of the technology integrated into the system by the fourth quarter of this year. UI claims its Distributed Computing answer will be a superset of rival consortium OSF's provocative Distributed Computing Environment. Mainframe characteristics such as transaction processing and multiprocessing have been gathered together under the sobriquet Corporate Hub, which will be architecturally defined some time this year. Lastly, Unix International will actively go after the desktop, starting with a late '91 release incorporating an API for a Mac-like look supporting both Open Look and OSF/Motif and running on all platforms. The Roadmap also indicates a tightened schedule on deliverables with OSI, for instance, moving from 1993 to the third quarter of this year. Add-on products such as the commercial file system will be licensed separately and not require a full release of the operating system. UI also plans to announce availability of generic ABI test suites for chip vendors to ensure conformance.

MIPS INTRODUCES NEW SYSTEMS, CLAIMS 1000th APPLICATION

MIPS Computer Systems Corp last week added two new server systems to its line of RISC-based computers, as well as new applications software, including the Sybase RDBMS and Novell Inc's Portable Netware. Sunnyvale, California-based MIPS also introduced board level CPU and memory products, and reduced prices on current boards and SCSI disk drives. The company previewed its new RC3360 RISC-Computer, the highest performance CMOS system in its product line, and the RC6260, a lower-cost more compact version of its existing RC6280 - both are to be formally introduced at UniForum this week. The RC3360 uses a 33MHz R3000A CPU, delivering 26.4 SPECmarks of performance - it has our Ethernet links and seven VME I/O slots. Base models, from \$65,000, come with 32Mb main memory (expandable to 256Mb), and 633Mb of disk (expandable to 2Gb). The RC6260 uses the R6000 ECL CPU, delivering 44 SPECmarks performance. Similar base configurations (with disk capacity expandable to 44Gb) start from \$139,000. Available immediately. The Sybase RDBMS and development toolsets, becomes the 1,000th application available for the MIPS architecture - it will be ready in the second quarter. And the MIPS RISC/os version of Portable NetWare, which the firm licensed from Novell last May, (UX No 283), now begins deliveries, with prices from \$3,300. MIPS also introduced its own data management software utilities, a Visual Debugger and ANSI C, along with the RB3133 RISCARD single board computer and two new memory boards using 4Mbit DRAM technology.

NCR'S TOP-END GOES

HEAD-TO-HEAD WITH AT&T TUXEDO...

Although it will be a direct competitor to AT&T's Tuxedo software, NCR says the launch of its own Top End on-line transaction processing application, due at Uniforum this week, has nothing to do with the bid AT&T has made for its business, and that the release was planned some time ago. NCR says Top End will allow mainframe users to move their transaction processing applications from proprietary mainframes - like IBM and Tandem machines - across to its Intel-based 3000 series of Unix systems. It supports distributed applications with components running on multiple Unix servers with Unix workstations and MS-DOS-based personal computers as clients and includes transaction management, message tracking and network management modules. Top End is written in C and Cobol, and NCR is currently trying to get fourth-generation language software companies to port their application development environments to the package. Available from the second quarter, on a range of Unix machines prices go from \$3,500 to \$150,000 depending on configuration.

...AS TRANSARC'S TP SOFTWARE GETS MAJOR BACKING...

IBM, Hewlett-Packard and Stratus said last week that they would each take all the new on-line transaction processing base technology on offer from Pittsburgh, Pennsylvania start-up Transarc and incorporate it along with DCE into their various hardware lines. The Transarc technology, a collection of modular software components that IBM and HP have taken a hand in developing, promises to commercialise core parts of the Open Software Foundation's Distributed Computing Environment such as the RPC and authentication, (UX No 316), and is essentially enabling technology that can be used to build products like AT&T Tuxedo and NCR's Top-End - see above. Paramount in what Transarc is putting together are the Transactional RPC, a Distributed Transaction Service to coordinate multiple networked servers, and Transactional C for interfaces. IBM intends to pair Transarc's technology with its own Customer Information Central (CICS) for AIX, in some indeterminate timeframe. Stratus plans to phase in Transarc-based technology, integrated with its own software, over the next two years on both its proprietary VOS operating system and its System V-compatible FTX. HP expects to have a full-blown commercial implementation of the technology during the first part of next year on its 9000 and 3000 boxes. The technology is designed to comply with evolving and existing standards, including X/Open Co Ltd's distributed transaction processing model and XA interface. Transarc's technology also got the backing of database companies Sybase, Informix, Ingres, and software houses Independence Technologies Inc and JYACC. Transarc also says that its AFS Andrew distributed file system, a version of which is used by OSF in its DCE, now has 20,000 to 30,000 users spread over 100 sites.

...WHILST "HEWLETT BESTS IBM, DEC" WITH TPC-A UNIX BENCHMARKS

Hewlett-Packard Co has released TPC-A on-line transaction processing benchmark results for its HP 9000 Series 800 Unix systems running Release 4.0 of Informix's On-Line relational database. Hewlett claims the results show that its computers outperform IBM and DEC's comparable proprietary systems. A Model 842S clocked at 33 transactions per-second - or \$25,500/TPS - and the Model 852S at 43.3, \$24,100/TPS. The TPC-A benchmark has been developed by the Transaction Processing Performance Council as combined measure of on-line transaction processing performance across all components of a computer system plus five years of maintenance costs. The top-end IBM AS/400 Model B70 came in at 27.1 TPS and \$31,300/TPS, whilst DEC's VAX/VMS Model 6000/510 with five VAXserver front-end performed at 32.5 TPS, or \$35,900 TPS. Meanwhile IBM says it will disclose TPC-A results for its RS/6000 AIX workstation line on Tuesday at Uniforum.

SUN TO INTRODUCE VIDEOPIX VIDEO CAPTURE FOR SPARCSTATIONS

Sun Microsystems has a new product to allow Sparcstation users to capture and share still frame video images across a Unix network. The product - called VideoPix - consists of a postcard-sized S-bus add-in board along with software that lets up to four users capture and share colour or black and white images from a video source. Images, captured as 8 or 24-bit colour or greyscale images, can be cropped resized, and adjusted to remove motion blur or improve contrast. The video board contains standard RCA and S-Video jacks so that video still cameras, camcorders, televisions, video disk players or video cassette recorders can be connected. NTSC/PAL Composite or S-Video standards are supported, and the JPEG joint photographic expert group compression algorithm is included. Suggested application areas for the product, which runs under Sun's Open Look interface, include the creation of a database of images for real estate, parts catalogues or insurance claims forms. Prices in the UK start from £650. Other Sun announcements expected at UniForum include more applications and platforms for Open Look, and repricing of Sun's SunNet network management system.

VERITAS TO LAUNCH VxFS FOR "COMMERCIAL STRENGTH" SVR4

Veritas Software Corp will this week bring out the Veritas File System, VxFS, the second product developed under its four month old strategic relationship with AT&T's Unix Systems Labs aimed at developing a commercial strength file system for Unix System V Release 4 (UX No 301). VxFS supports fast two to three second file system recovery, online administration and enhanced performance. Veritas says that together with its first product, the Veritas Volume Manager, it satisfies the Unix International Roadmap requirements for commercial file system support in SVR4. VxFS will be generally released this quarter.

MICRONICS ADDS MS-DOS X-TERMS

Micronics Computers Inc, Fremont, California, will be showing off X-terminals that double as MS-DOS workstations in Dallas this week - although users will not be able to run X-Windows and personal computer applications simultaneously until more Unix/PC windowing software is added. The colour graphics systems - the 3X and 4X - use Intel 25MHz 80386 and 80486 processors respectively, store X server software in memory on the motherboard, and boot up as X-terminals. To turn them into personal computers, users need to add a VGA card, hard disk and a floppy drive, which are not bundled. With from 2Mb to 8Mb RAM, Ethernet, two parallel and two serial ports, the 386 model starts at \$3,500 with a 14" colour screen, or \$4,500 for a similarly configured 486 system.

JYACC, New York, will announce a version of its JAM application development environment for OSF/Motif: JAM/Presentation, which goes from \$400 to \$2,000 will be followed by Open Look and Microsoft Windows 3.0 versions in the second quarter.

Lohara Software Systems Inc, Simi Valley, California, is to unveil Odyssey, a computer-aided software engineering environment for developing distributed applications running on SunOS, SCO Unix and 80386 and 80486-based personal computers.

X-terminal builder Visual Technology Inc, Westboro, Massachusetts, will announce the X-19PQD imaging display station, using 16MHz Motorola 68020 and 32MHz Texas Instruments TMS34020 processors. With from 2Mb to 26Mb RAM, 256 levels of greyscale, a 19" monitor, Visual's XDSware X server, Ethernet and a serial port, it is compatible with OSF/Motif, DECwindows, Open Look and Xview graphical user interfaces and starts at \$4,500.

TATUNG TO LAUNCH 2D/3D SPARC CLONE THIS WEEK

Tatung Science & Technology this week will spice up its Sparc clone line by adding a graphics-enhanced member. The TWS-5020-CX includes a 19-inch colour system with a TI34020-based Megatek graphics card and 8MB RAM. The company says it's suitable for 2D and low-end 3D environments, priced at \$10,000 and available immediately. The card offers an active display area of 1152 x 900 or the higher 1280 x 1024. The pixel map ranges from 1640 x 1280 standard or 10240 x 8160 with optional pixel map memory.

GIPSI CO-OPTS NINE PARTNERS INTO EUROPEAN WORKSTATION EFFORT

As well as Chorus Systemes, Paris, and Portuguese research institute INESC, Lisbon, French manufacturer Gipsi SA has seven other partners collaborating in its effort to develop a European workstation based upon Cypress Semiconductor's 33MHz implementation of Sun Microsystems' Sparc Risc processor, a project part-funded by the European Commission's Esprit programme, (UX No 315). Gipsi and INESC's Basic WorkStation module is rated at 22 MIPS and 3.5 MFLOPS, and will come with up to 64Mb RAM and an optical disk. The workstation will incorporate a Co-processor Communication System - CCS - for integrating various application-specific hardware modules that the project partners are working on. The CCS, based upon Chorus' multi-processing, distributed version of Unix and the Multibus II transport protocol, includes a driver toolbox called the Procurator designed by Siemens AG, which is built around a general purpose processor board. A graphics co-processor engine - Grace - includes a three-dimensional geometry and rendering, image-generation subsystem designed by Siemens and FhG-AGD, Darmstadt, Germany, and an object-orientated Interaction Framework dubbed IF, based upon an extended version of X-Windows developed by Rutherton Appleton Laboratory's User Interface Design Group in Didcot, Oxfordshire. A Fortran paralleliser, which adapts sequential programs to run in parallel, is being built by Bull DR PA in Paris. Siemens and Brunel University's Department of Electrical Engineering and Electronics, Uxbridge, Middlesex, are working on an electronic simulation accelerator, ESImAc, a subsystem based upon multiple transputers for speeding up computer-aided design applications. And Grupo APD SA, Madrid, is working on TBSQL, a distributed database for technical applications, which consists of an object-orientated SQL server running on top of the Chorus operating system. A geometric modelling system application exploiting Grace and the Fortran paralleliser has already been developed for the database - and the computationally intensive software can also be used as a tool for benchmarking other systems, the group says. The workstation is due to be completed in March.

TRANSPUTER TOPS RISC PROCESSOR SHIPMENTS FOLLOWED BY SPARC, MIPS.....

RISC processor shipments more than doubled in 1990 compared with the previous year, rising from 411,000 to 858,000, according to the RISC Management Newsletter. It says the installed base of RISC systems now exceeds 1.5 million. Transputers came out tops with 240 processors shipped, followed by the Sparc with 185m, Mips Computer Systems R series with 90m, Advanced Micro Devices' Am 29000 at 85m, Intel's i860 and i960 with 65m each, Acorn's Computers' ARM with 55m and Motorola's 88100 trailing at 50m.

Meanwhile the Electronic Industries Association of Japan reports that the market for semiconductors in Eastern Europe will not start materialising until the end of the decade. The EIAJ estimates Eastern Europe's demand at \$710m in 1989 - 1.4% demand of total world demand.

And after snatching the lead in sales of semiconductors, US chipmaker's trade organisation, the Semiconductor Industry Association, predicts that by 1998 Japan will account for 42% of the worldwide computer hardware market, compared with the US with 41% - it says Japanese manufacturers will assume control of the total data processing business soon after: the Association's gloom is compounded by the fact that the electronics sector is the number one manufacturing business in the US, bigger even than the auto industry.

VISIX CUTS DEAL WITH SUN - SHOWS 2D/3D OPEN LOOK INTERFACE

Visix Software Inc has quietly cut a co-marketing deal with Sun Microsystems for its Looking Glass user interface product. Visix Chairman Jay Wettlaufer, who's been trying to snare the deal for some time, hints the relationship is more intimate than run of the mill co-marketing deals, and thinks that Sun's help will triple a claimed \$4.5m worth of business Visix currently derives from selling into the Sun base. At UniForum, Visix expects to announce a run-time Open Look version supporting 2D and 3D. He says Visix spent \$250,000 developing a product that supports the Open Look look and feel and Sun's strategic Open Windows environment. And Visix also has a co-marketing pact with AT&T Computer Systems for customers of AT&T's high-end Pyramid-based symmetrical multi-processing System 7000 and its new X terminals, the 730X+ and 750CXX. And under an OEM pact, Evans and Sutherland will sell Looking Glass as an option on its EVS series of boxes.

IXI GETS NEW FUNDING, LAUNCHES X.DESKTOP 3

Celebrating "substantial" seven-figure equity investments from two European financial institutions, UK software house IXI Ltd is to introduce X.desktop 3 - the latest version of its X-Window desktop graphical user environment - at UniForum. IXI, which claims that there are now some 25,000 users of X.desktop, has won backing from Save-Rosler Bank AG, a private Austrian bank that includes the Active Book Company and DataEase International amongst its other investments, and the UK's Sumit Equity Ventures, based in Birmingham and run by ACT founder and chairman Lindsay Bury. IXI managing director Ray Anderson says the money is needed to help the company make the transition from a primary focus on the OEM marketplace - where most of the decisions have now been made - towards corporate end-user business, which requires a larger support operation. IXI's end-user customers include the Ford Motor Company, Daimler Benz, the European Commission, Barclays Bank and Rolls Royce, with many of the customers wanting to run X.desktop on Sun Microsystems and Hewlett-Packard hardware - two companies with which IXI does not have an OEM deal. X.desktop 3.0, which is backward compatible with previous versions and similarly conforms to the OSF/Motif 1.1 toolkit and style guide, comes with three preconfigured desktops, one designed for the "terrified user" as a launchpad for applications, one for the Unix aware user, and a third systems administration desktop which assumes superuser status. The desktops can be further tailored by the user. Other features include animated, multi-coloured and shaped icons, pull down menus, "rubber band" icon selection, and hypertext-based help. It also includes a drag and drop protocol to support the dragging of objects from the desktop onto other applications, and hooks that support future distributed object models such as those proposed by the Object Management Group. Price is \$795 in the US, £595 in the UK: available immediately to OEMs, with shrinkwrapped versions for Sun, HP, Interactive Unix and others within two months.

OMI GETS £200m FUNDING TO DEVELOP 100 MILLION TRANSISTOR PROCESSOR

The European Commission's Open Microprocessor Initiative to find, design and develop advanced microprocessor technology in Europe, (UX No 315), is set to lift off in April, on the back of £200m funding from the EC's Council of Ministers. The aim of the five-year project is to develop processors with over 100 million transistors, which compares very favourably with other chipmakers' plans. Intel Corp for example doesn't plan to deliver a 100 million transistor product until the end of the millenium, (UX No 289). Components are expected from more than one European chipmaker, as the idea is to reduce Europe's dependence on foreign suppliers. European firms backing the plan - which does not exclude foreign manufacturers, although they cannot draw upon OMI's funding - include SGS Thomson Microelectronics BV's Inmos International Ltd subsidiary, Groupe Bull, Siemens AG, Ing C Olivetti & Co SpA and the UK's Acorn Computers, and, at least initially, the plan is to support Unix. Despite OMI's ambitious plans for the hardware, World Electronic News reports that processor development will account for only 10% of the budget, the majority going on operating systems, compiler technology, systems development tools and applications. One of the project's first applications could be the European Nervous System - a proposed pan-European network to manage the movement of goods following the arrival of the single European market in 1993. Following layoffs at major European computer companies, a report examining ways of stimulating growth in the European information technology industry is being put together by the EC. Layoffs mean more pressure is inevitably coming to bear on initiatives like the Esprit information technology development programme - the report, due by the end of the month, will examine all of these issues.

RDI TO MAKE MAC EMULATION SOFTWARE AVAILABLE TO ALL SPARC USERS

Scorning Sony's new 18-pound R3000-based News 3250 Laptop Workstation, (UX No 316), as more a luggable than a friendly little laptop, San Diego start-up RDI Computer Corp - better known as Research Development Innovations - claims work on its own Mips-based laptop is well advanced, (UX No 297). RDI next week will publicly show Macintosh software running on its Brite Lite Sparc laptop for the first time. And RDI is set to make the software emulation product - developed by an unidentified Californian company - available as a product for all Sparc-based workstations, acting as the exclusive distributor. It hopes to call the software Softmac 1.0, but at press time it was haggling with Apple lawyers over the name, and may have to change it. Emulating the 68000 processor, Softmac 1.0 will give Macintosh users the ability to migrate to Sparc-based systems and carry over their software. It runs under Sun Microsystems' Sun-View or Open Windows, and supports any Sparc-compatible display, keyboard, mouse, hard disk, floppy disk and CD-ROM drive. No prices were given. RDI's Brite Lite, manufactured by TriGem Computer Co of South Korea, also runs Unix and DOS. The fledgling firm, which only a few months ago employed 11 people, now has a payroll of 60, and promises to be 100-strong by the end of the month.

MARKET ROUNDUP

It was looking grim for NCR Corp's hopes of maintaining its independence last week as AT&T Co reported that at the second close of its \$90 a share tender offer, some 70% of NCR's shares had been tendered by the close of business on Tuesday: the offer has now been extended for a whole month, to close on February 15; AT&T also said that it had received written requests and letters of instruction from the holders of substantially more than the 25% of NCR's outstanding shares needed to require NCR to call a special meeting of shareholders.

And NCR Corp has another straw to clutch in its desperate battle to elude AT&T Co's unwanted embrace - the House of Representatives Subcommittee on Telecommunications & Finance has called for an evaluation of the public policy issues surrounding the bid by the Federal Communications Commission, which is requested to evaluate the potential impact on consumers, on the computer industry, and on US competitiveness; there is also concern that AT&T will take its eye off the telecommunications ball and that phone users might end up the losers; competitors in long distance also worry that AT&T will bundle telephone service with NCR's products.

AT&T Computer Systems has announced that Martin County in Florida and Wellmark Inc, a health information network based in Los Angeles, are two new System 7000 customers: the System 7000, a RISC-based computer bought OEM from Pyramid Technology Inc, executes more than 200 transactions per second, and it has a symmetric multiprocessing capability; in Martin County, the System 7000 will network the various computer systems located in departments spread throughout the county, and Wellmark will use it in its health care network, which links patients' insurance companies and employers, hospitals and clinics, doctors surgeries and third-party administrators processing health care claims.

Sybase Inc has added Oxnard, California-based Network Research Inc's Fusion Network Software to its Synergy programme for independent software vendors: Sybase says that the wide range of systems and protocols that Fusion supports gives Sybase users distributed access to new systems - Network Research will market Fusion as a TCP/IP system for DEC's VMS and for a wide range of major implementations of Unix.

Northumbrian Water Group Plc is developing a graphics-based geographic information system on an Intergraph UK computer system: the Group's Information Technology development group will develop the £1m system and it is to be used for data capture and management of the company's underground assets; Unix colour graphics workstations will run FRAMME, Intergraph's rule-based mapping and facility management software, and the workstations are to be installed in Northumbrian Water's five regional offices.

AIMsoft International Ltd, St Albans, Hertfordshire, has an external fax modem and software that allows users to send faxes to Group III machine from a Unix system: AIMfax integrates with a range of office automation software - prices start at £1,500 for an eight-user licence.

Protek, West Drayton, Middlesex, has been appointed exclusive distributor for Precision Visuals International's visualisation and analysis application, PV-Wave, on Hewlett-Packard's Unix workstations - prices start at £4,000 per floating point unit.

Alslys Ltd, Henley-on-Thames, Oxfordshire, is to bundle the runtime version of Ready Systems' real-time Unix kernel, ARTX/OS, with its Ada compiler tool set.

Software house Syntax Systems is to distribute Belfast-based Software Ireland's Unibol/RPGII software on the RS/6000 and PS/2 in Canada.

Bristol-based Meiko Scientific has installed one of its eight-processor Intel i860 and Inmos Transputer-based Computing Surface systems with 64Mb RAM and 20Gb disk at the California Institute of Technology, Pasadena, California.

Lynx Real-Time Systems says that version 2.0 of its LynxOS real-time Unix kernel - shipping this quarter - complies with the emerging Posix 1003.4 real-time extensions: LynxOS 2.0 was developed for NASA's Freedom space station, it costs \$1,500.

Network designer specialist ILAN, Columbus, Ohio, is to port its Oracle-based ImageBase document processing software to the NeXT computer: ILAN is also to become a NeXT reseller as part of the agreement.

Surrey-based IBM RS/6000 value-added reseller Data Systems Electronics Ltd, has acquired Versyss Ltd, the UK subsidiary of Versyss in the US.

Evans & Sutherland, Salt Lake City, Utah, is now offering its Mips Computer Systems-based ESV Unix workstations with Mips' 33MHz R3000A part - upgrades start at \$5,000 - a local server board is also available for the top-end boxes which adds three serial ports and doubles the number of SCSI devices that can be connected.

Digital Instrumentation Technology Inc - or DIT - Los Alamos, New Mexico, has introduced FloppyWorks, file transfer software for NeXT computer users, enabling them to import data directly from an Apple Macintosh, MS-DOS or OS/2 disks: it costs \$250.

Kingston Technology Corp, Austin, Texas, is shipping 16Mb and 32Mb upgrade kits for IBM's RS/6000 series - at \$4,000 and \$9,000 respectively they are claimed to be less than half the price of IBM's own upgrade solutions.

Synchronix Diffusion, Paris, asks us to point out that its agreement with Migration SA, (UX No 315), is for porting Prologue software to IBM's RS/6000.

MMB Development Corp, Manhattan Beach, California, has released version 2.0 of its MMB Teamate bulletin board software for Unix systems - it includes new text retrieval and windowing enhancements: prices start at \$4,600.

Wyse Technology Inc says it is to join the group of companies known as the MP Unix Consortium, which are jointly developing the multi-processing version of Unix in conjunction with AT&T, (UX No 301), Wyse says its will add the multi-processing extensions to its implementation of Unix V.4 due later this year: Informix and Oracle are to port their respective databases to Wyse's Series 9000i Intel 80486-based systems.

Eschewing its own systems in favour of IBM, Control Data Corp has chosen the RS/6000 as the basis of its Focus XP in-house data processing system.

nCUBE has moved its headquarters to its offices in Belmont, California, from Beaverton, Oregon.

Network Computing Devices, Mountain View, California, has turned in revenues of \$52m for 1990, its second year in operation, up from \$15m in 1989: it reckons to have shipped 29,000 X-terminals to 900 customers, whilst 20% of its sales have been to OEM customers, including Pyramid, Data General, Motorola, Bull HN, Solbourne and Convex.

Ashton-Tate Corp says dBASE IV version 1.1 is now shipping for Sun Microsystems Inc workstations and servers - it costs \$1,000.

Computer Associates has begun shipping release 11.0 of CA-Disspla - its distributed graphical applications builder - for DEC's Risc Ultrix platforms: supporting X-Windows and a range of graphical user interfaces, prices go from \$3,000 to \$69,000 depending on configuration.

Pittsburgh Powercomputing has licensed the source code to its X-Station/340 X-Windows server to Xerox's Palo Alto Research Centre, Workstation News reports.

Hewlett-Packard will begin manufacturing its HP 9000 and 3000 series systems in India from March when its \$9m plant in Keonics City near Bangalore is complete: the plant is a joint venture with Blue Star Ltd.

TOSHIBA "PLANNING ITS OWN MIPS CHIP" SAYS JAPANESE PRESS

Last Wednesday's edition of the Nikkei Sangyo Shimbun, one of the industrial newspapers in the Nikkei Group, carried a front page report contending that Toshiba would release this Spring the fruits of its design licence agreement with MIPS Computer Systems, in the form of its own RISC chip. This would be Toshiba's first RISC development, although it is already using Sparc chips in its recently launched Sparc laptop, (UX No 282). Toshiba, an Architecture Licensee for the MIPS part, (UX No 310), did not deny there was a relationship with MIPS, but said the report had resulted from questions asked by the reporter, and was not an official announcement of a new product. MIPS similarly had little comment on the report, aside from saying that Toshiba had been an original foundry for MIPS itself, and it held Toshiba's CMOS semiconductor process technology in extremely high regard. Toshiba was one of Sun's first OEM in Japan, and sells on Sun workstations as the Toshiba AS 4000 Series. It also has a long-standing relationship with Motorola, and the two companies recently began producing Motorola 68000 chips at their joint-venture plant Tohoku Semiconductor in Northern Japan. Japanese makers appear to be strengthening their hands in the RISC world; as well as the Fujitsu-Sun/Toshiba-MIPS alliances, Hitachi and Hewlett-Packard announced cooperation last year.

SUN HANDS OVER VME SPARC BOARD PRODUCTION TO FORCE

Sun Microsystems Inc has signed a technology transfer agreement with real-time specialist Force Computers Inc, under which the Campbell, California-based firm will second source Sun's Sparcengine 1E processor board. The 1E is a VMEbus version of the Sparcstation 1 motherboard, and will be available from Force, with integrated SunOS and real-time capabilities, from March. Sun hopes the deal will increase its presence in the real-time VME applications market. Sun's long-term intention is to phase out VME board production, handing it over to Force, from whom it will then buy-in boards to resell. Force is said to be already working on a VME version of the Sparcstation 2 engine that it will manufacture for both itself and Sun to market. Force - a committed supporter of the Futurebus+ effort - also plans to deliver a Sparc-based Futurebus+ CPU at a later date. In addition to SunOS, Force is licensing its Open Network Computing architecture and the Open Look graphical user interface, enabling it to offer a board-level solution with a real-time kernel and a development environment. Another real-time software vendor, Wind River Systems, is set to announce the availability of its VxWorks real-time Unix kernel on the Sparcstation 1 VME board, whilst other real-time players Microware Systems Corp and Uniflex also plan to deliver Sparc implementations later in the year.

ECS LINKS CASE TOOLS FOR DATABASE BUILDERS

ECS Associates, Torrance, California, is now shipping SQLink-Plus, software which connects Cadre Technologies' Teamwork computer-aided software engineering application with Six Sigma CASE Inc's Canonizer. ECS claims SQLink-Plus allows users to design relational databases by using Teamwork to model the database design, which is transformed into a database schema by Canonizer. The software is available for Sun Microsystems workstations and IBM's RS/6000, and supports most SQL-compatible databases. Prices start at \$5,000 - ECS says Hewlett-Packard 9000, OS/2 and DEC Ultrix ports will follow.

TEXAS LAUNCHES FIRST 68040 BOX

Texas Instruments Inc, whose Business Systems line of Unix machines includes both the iAPX-86 and 68000 family models, has added its first 68040-based machine, the 1507, derived from its 68030-based 1505 uniprocessor. Users can upgrade by swapping the processor board at a cost of \$7,000, and the machine - out next month - starts at \$18,000 with 4Mb. Memory can be expanded to 64Mb to support up to 64 active users. Texas says it is in no hurry to move to RISC, and will not necessarily use the Sparc chip it makes.

ANOTHER 500 JOBS GO AT WANG

Just about the biggest bloodletting in the current series of computer industry retrenchments has come at Wang Laboratories Inc, and the Lowell, Massachusetts company is not finished yet. From 31,000 in March 1989, it is now down to 19,000 employees, and another 500 are to go in the next three weeks. The company says that while its internal operations are back in balance and its bank debt is paid off, it is now having to adjust to recession.

NUMERICAL ALGORITHMS TEAMS WITH PRECISION VISUALS

The Numerical Algorithms Group and Precision Visuals Inc have announced that they are working together to develop interactive products for the analysis and display of numerical data. The two companies are to launch a product combining the visualisation techniques of Precision Visuals' PV-Wave visual data analysis software with NAG's statistical and mathematical techniques. PV-Wave:NAG enables access to NAG's subroutines and algorithms without editing, compiling, linking and executing programs. It will be available initially for DEC VMS and Ultrix-based systems, as well as Sun-3 and Sun-4 workstations and servers, including the Sparc family. Precision Visuals says that its existing users need analysis tools tied in with imaging software, and both companies plan to market it initially to their client bases in the UK. Typical application areas include test engineering, research and analysis, image processing, financial and statistical analysis, energy and materials research and other data-intensive operations. NAG, based in Oxford, was established in 1970 as a commercial offshoot from the University of Nottingham, although it remains a not-for-profit operation and reinvests its earnings in research and development. It is probably the primary supplier worldwide of mathematical software, and with a 10-year product development cycle, over 50% of its business is derived from research and development projects. It has libraries in C, Fortran, Ada, Pascal and Turbo and says its 900 callable routines are totally portable between different environments.

ALLIANT ADDS VMS UTILITIES EMULATION TO FX/2800 COURTESY OF BOSTON BUSINESS

Alliant Computer Systems Corp, of Littleton, Massachusetts has teamed with Boston Business Computing Ltd in Andover to implement Boston's DEC VMS-emulating software family on Alliant's Intel Corp 80860 RISC-based FX/2800 parallel minisupercomputers. Alliant is taking Boston's EDT+, VCL, Vnet, Vmail and Vbackup, all designed to help VMS users to coexist with or move to the Alliant systems easily. EDT+ emulates DEC's VAX EDT text editor; VCL features over 100 DCL commands and utilities with over 300 qualifiers, command files, symbols, wildcards, line editing and command history; Vmail is an emulation of the VMS Mail interface with VMS Mail commands and qualifiers; Vbackup is an emulation of the VMS Backup utility which enables users to read and write VMS Backup tapes on Unix systems using VMS or Unix syntax; and with Vnet, Alliant users can use DECnet syntax to access other networked systems. Alliant already offers DECnet and LAT networking, a DECnet batch system, and a VAX-compatible Fortran compiler that automatically optimises code for parallel execution.

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Atmel Corp, San Jose, California, has received the final design for the MISC - Minimum Instruction Set Computer - processor it is fabricating for TeraPlex, Champaign, Illinois, (UX No 290): deliveries are due in the second quarter.

As expected, (UX No 310), Tektronix Inc has teamed with touchscreen specialist Trident Systems Inc, Fairfax, Virginia, to develop a touchscreen X-terminal: the displays will incorporate Tektronix XP27 or XP 29 colour TekExpress X-terminals with Trident's Xtouch software. Prices go from \$7,400 to \$8,400.

Jupiter Systems, Alameda, California, has introduced a new X- Windows display station that allows two 19" colour monitors to be controlled from a single keyboard. The Model 412, which runs X-Windows X11.4 server code, is built around the existing 25MHz Motorola 68030-based 410, with a couple of graphics processors. With 4Mb to 16Mb RAM, it supports Motif, Open Look and DECwindows graphical user interfaces and is priced from \$14,000, including monitors.

Hewlett-Packard Co is offering a version of its SoftBench software engineering product for the Sun Microsystems Inc Sparcstation, the first time that SoftBench has been made available on workstations other than those made by Hewlett or its Apollo Systems Division: SoftBench is designed to co-ordinate and control the separate programs that software engineers use to design, build and test software products, integrating tasks for developing software in a similar manner to the way word-processing programs integrate dictionary, thesaurus and grammar-checker functions, Hewlett suggests; it is designed to integrate data among the programs and make it easier for programmers to make changes at any stage of the development process; it is also offering Encapsulator, which enables SoftBench to be customised by adding third party tools on the Sparcstation; the new versions are promised for mid-year at "less than \$3,000 per workstation".

IBM's PS/2 Wizard Adaptor, which uses the Intel 80860 Risc processor, now has application device drivers that enable it to operate with AIX PS/2 Unix as well as OS/2 operating systems. The drivers enable the development and use of numeric-intensive AIX applications. Two expansion slots and a 3.5" disk drive are required, and a 60Mb disk drive is recommended; the PS/2 Wizard Adaptor costs \$6,500.

Frame Technology Corp has announced French and German versions of International FrameMaker 2.1 for SunView and a French user interface version of FrameMaker 2.1-X for X-Motif-based systems; a German version of X-Motif will be available this year.

Sequent Computer Systems Inc is on the receiving end of two of those nuisance class action shareholder lawsuits: the complaints allege, among other things, that the company withheld material adverse information from the public during the period from July 18, 1990, to January 9, 1991 following its announcement on the latter date that it expected a fall in profits for the fourth quarter of 1990; "We believe that the claims are entirely without merit, and we intend to defend vigorously against them," said chief executive Casey Powell.

Bull SA duly appointed Enrico Pesatori, a 21-year Ing C Olivetti & Co SpA vet, to become president of Zenith Data Systems.

AT&T Co plans to form AT&T Software Japan Ltd in April as a joint venture with Software Research Associates Inc and backing from the Industrial Bank of Japan Ltd. The new company, to be capitalised at \$1.6m, will be majority-owned by the US phone giant and will develop computer and communications software.

Nashville-based board manufacturer Arnet Inc has reached an agreement to sell out to its competitor Digi International Inc of Minneapolis: Arnet's move into the systems business at the end of 1989 (UX No 258) was thought to have been badly timed.

VislonWare Ltd of Leeds in the UK, is talking about release 4.0 of its XVision PC-based server for the X Window system. Due in April, the new version will incorporate the features of interim release 3.2, due out in February, and will be based on the latest X11r4 released of the X Window system. PCs networked over TCP/IP to a host system can use XVision to display multiple X clients alongside local MS-Windows programs, with the ability to cut and paste between DOS and X. No prices were given.

Meanwhile, another UK company, Cheshire-based JSB Computer Systems Ltd, is to launch its MultiView X11/AT Microsoft Windows 3 implementation of the X display server, something it has worked on in conjunction with Integrated Inference Machines of Anaheim, California. JSB will also introduce MultiView Mascot, an OSF/Motif-like windowing system for character-based terminals. JSB is currently the driving force behind an effort to get terminal manufacturers to collaborate over a standard approach to windowing terminals.

Pyramid Technology has a major OEM deal up its sleeve and is promising the news will break this Monday (21st).

The Chips and Technologies Inc M/PAX multi-processor assembly kits for 486-based systems first introduced almost a year ago (UX No 270) are set to win support at UniForum. The Santa Cruz Operation, working with Corollary Inc, will launch multi-processing software support for M/PAX platforms at UniForum this week. Called SCO MPX, the software should boost efforts to produce hardware around the kit. Amongst other supports are BIOS supplier American Megatrends Inc and Archie Technology Inc.

And SCO is expected to come out with the new 1.1 release of its integrated Open Desktop software bundle this week at UniForum, but will concentrate most on emphasising the number of software packages that now support the package.

To demonstrate its devotion to internationalisation, Unix System Labs will be showing off a prototype of SVR4 with the system messages written in Devnagari, a Hindi script, that it co-developed together with two agencies of the Indian government and Sun Microsystems's Indian distributor Wipro.

Mach/Berkeley distributor Mt Xinu wants to spin off its Apple Talk-based products, Ktalk, KaShare and KaSpool into a separate subsidiary, and is looking for a well-connected partner to make it a joint venture.

The San Francisco Chronicle believes the NeXT/Businessland deal is falling apart, mostly due to Businessland's poor performance, and even quoted Businessland founder Dave Norman as being more hopeful than optimistic about the firms' continued alliance. NeXT has started signing up other retailers, starting with the four-store Computer Attic in Palo Alto, California.

According to the DMR research outfit, quoted in the Financial Times, at the end of 1989, more commercial users were using Unix than any other multi-user operating system - and that a quarter of those using it first implemented Unix in 1989.

Informix Corp has cut its 1,300-employee workforce by about 15% - about 195 people - and will take a fourth quarter charge of about \$6m to cover it.

At the Buscon/West show in the US at the end of the month, Sun Microsystems Inc is expected to introduce a new version of its SunOS Unix operating system implementation, together with some new multi-processing software support, according to Electronic News.

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28 JAN. 1991

The weekly information newsletter for the UNIX™ community worldwide

London, January 28-February 1 1991

Number 318

UNIX SYSTEM LABS INCHES TO SPIN-OFF VALUED AT \$325m

AT&T is valuing Unix System Laboratories at \$325m, according to the prospectus it has left with potential investors. The spin-off of 20%-30% of USL, worth \$65m-\$97.5m, should advance another pace later this week when USL management is expecting to receive signed investment agreements from those companies it has asked to become co-owners of Unix. Currently even USL managers do not know what amount of the company any of the potential investors will opt to buy. AT&T, however, has limited the total amount of ownership any other company can buy to 4.8%. It is believed Fujitsu could attempt to exert greater influence by buying a piece itself and voting that in concert with stock reportedly being bought by Amdahl and ICL, companies it also owns a considerable chunk of. USL is targeting its first post-sale board meeting with a new bunch of directors for mid-March. 10% of the stock is earmarked for USL employees, but as we understand it, AT&T gets to vote them. USL president Larry Dooling said that after this initial buy-in - and assuming that it doesn't not sell off the full 30% right away - the sale of further tranches are already being contemplated that will allow companies that currently might not have the cash on hand to get a piece of the action. It is still in AT&T's game plan to go public with USL in about two years time, market conditions being right.

INTEL HANDS ITS UNIX V.4 OVER TO INTERACTIVE

Interactive Systems Corp was named "Principal Publisher" of Unix System V Release 4 for Intel platforms at Uniforum last week, in a move that marks Intel Corp's retreat from software publishing. The deal puts Interactive firmly in the driving seat as the supplier of new generation Unix implementations on PC desktops - a position previously dominated by the Santa Cruz Operation. AT&T's Unix Software Labs will supply Interactive with a standard System V Release 4 base product, including coding, integration, quality assurance and documentation, allowing Interactive to market, package sell and support SVR4 for Intel-based platforms. And Intel will transfer its existing SVR4 customer base to Interactive. The first release from Interactive will emerge this April to developers, OEMs and advanced end users. A second release, due in the third quarter of the year, will be compatible with the iBSC-2 extended binary compatibility specification for Intel systems running Unix System V, when Interactive also promises to support multiple graphical user interfaces, such as OSF/Motif and Open Look, expanded networking and VP/ix DOS under Unix capabilities. To keep its revenue stream going, Interactive will offer existing and future customers of its base V.3.2-based products the option to upgrade to SVR4 for \$195 at any stage before 1st January 1993. Intel's entry into the Unix operating system market in 1989, (UX No 255), which followed on from its acquisition of Bell Technologies in June 1989 received a poor reception from Intel's microprocessor customers - but Intel will continue with its iABI application binary interface development work with Unix Software Labs, supported by a new iABI Program with participation from AT&T Computer Systems, NCR, Toshiba, Tyan Computers, Dell and Unisys. SCO, which uses System V/386 Release 3.2 as the base for its Open Desktop desktop Unix software bundle, has not yet made its intentions concerning V.4 clear. Interactive will also be offering V.4 products for the Sparc market. Larry Michels, co-founder of the Santa Cruz Operation, gave every indication that SCO was not interested, either now or in the foreseeable future - or until the market forces him to do it - of adopting SVR4. He told Unigram that he was delighted Interactive got the contract as it is a non-player and holds no competitive threat for SCO.

COMPAQ TO USE MIPS RISC?

Tales making the rounds at the Uniforum show in Dallas last week have Compaq Computer Corp decided on the Mips Computer Systems chip for its Risc architecture. Sources close to the company claim that four weeks ago Compaq had draft contracts in hand for Sun Microsystems Inc's Sparc chip when Mips rushed in and upped the ante, offering Compaq a piece of the company, manufacturing and technology transfer. It's now said to be a done deal. A Compaq official, when asked about the status of things, tried to pooh-pooh the reports but never could bring himself to flatly deny them. The decision, if there is one, seems to put Compaq in conflict with its basic philosophies of only supporting standards and never begging third parties to write software. On the other hand, it may have a lot to do with OS/2, which is also being ported to the Mips chip, (UX No 310). Either way, it will have far-reaching effects. Uniforum roundup - see page 4.

SNAKE PREVIEW - NEW HEWLETT WORKSTATIONS SET FOR THE SPRING

Our spies have sighted the first of the new Hewlett-Packard workstation line, codenamed Snakes, (UX No 306), and reportedly officially named the 9000/700 series. They, supposedly running like lightning, will give Hewlett an 18 to 24 month lead over the competition and are already giving Sun Microsystems Inc a royal pain because of lost contracts even though they're still unannounced. The hardware is based on Hewlett's Precision Architecture and we're told - albeit with less than total confidence - that the low end runs at around 52 Specmarks. They should be out this Spring but await a production version of HP/UX8.0 which is still unfinished.

NEXT INCLUDED IN LIST OF QUALIFYING OSF DME MANAGEMENT HOPEFULS...

The Open Software Foundation has revealed the names of the organisations qualifying for its latest Distributed Management Environment Request for Technology, which resulted in 27 technology submissions. The deadline for full submissions was December 15th. The companies involved are: Bolt Beranek and Newman Corp, Fraunhofer Gesellschaft, Gradient Technologies, Groupe Bull, Hewlett-Packard, IBM, Legato Systems, MIT, NCE, NeXT, Quality Software Products, Quantum GmbH, Siemens Nixdorf, Stollman GmbH, Systar, UniSolutions, Sceptre, Tivoli, Torch Communications and Wang Laboratories. OSF was keeping tight-lipped about the submissions, saying only that the submissions entered fall into 18 technology categories, including core management services, underlying architectures and applications. There are a number of joint submissions. OSF now plans a members meeting in early March to establish a framework to continue and solicit member feedback, where submitters will demonstrate the technology. A final selection will be made in the second half of the year.

...DCE DEVELOPERS KITS NOW AVAILABLE

Meanwhile, the Foundation has announced the availability of Distributed Computing Environment (DCE) developers' kits, available for licensing from OSF members and non-members. The kit, costing \$5,000 for the source code and a further \$2,000 for support, consists of an integrated set of tools and services for developing and using distributed applications, including remote procedure call, local directory (naming) services, time services and threads for concurrent programming. Applications developed with the kit will run with Release 1.0 of the DCE, which is due for release in mid-1991.

* The Open Software Foundation has now satisfied itself that ANDF is a viable technology, and has apparently chosen a product from those submitted: it is now looking for someone to market and develop the product into a releasable format - more details to come.

SOFTWARE PROBLEMS WITH i860 "NOT YET RESOLVED"

Intel Corp is still having difficulties over the compiler technology for its problematic i860 RISC processor, according to Electronic News, which says that C and Fortran compilers are still being "enhanced" for the Intel Scientific Computers iPSC/860 128 processor system, announced a year ago (UX No 265). The work, originally undertaken by Green Hills Software, Santa Barbara, California, has now passed to the Wilsonville, Oregon-based Portland Group. Intel had hoped its investments in Alliant Computer Systems and Multiflow would speed compiler developments for the chip, but Multiflow is no more, while Alliant itself has severe problems producing workable software for the i860 - it attributed recent losses to the effort to produce compilers for its own line of systems. And industry gossip at UniForum suggested that the problems were not yet over. Other sources confirmed previous reports that the next generation i860 - known as the N11 - would fix some of the major weaknesses in the chip, but as a result might not retain compatibility with the earlier model. Meanwhile, the i860 development team has reportedly been shifted over to development work on the i586.

ALTOS SPINS OFF SOFTWARE INTERESTS TO ASP EXPRESS...

Altos Computer Systems is to help fund the foundation of a new company, ASP Express Inc, which will market, distribute and support Unix-based application and communications software for Altos customers worldwide. Based, like Altos, in San Jose, California, ASP will act as an independent subsidiary of Altos, and will be run by two former Altos executives, Ted Drysdale as president and CEO, and Richard Tung as VP, operations. Altos has previously put seed money into organisations such as Wyse Technology and Informix Software Inc, and did very well out of it, grossing some \$25m from the sale of its interests in Informix back in 1988, and \$17 million from Wyse in 1987. Altos president Ron Conway claims that ASP will do for Altos "what Claris did for Apple in terms of proliferating software applications". ASP will continue the ASAP Altos Software Availability Program. ASP Express will begin taking orders from February 1st.

SYSTEMS WITH HELP FROM ACER

Altos chose UniForum in Dallas to launch two new entry-level machines: the Altos system 400 and System 700, for businesses wanting boxes supporting from two to 16 users. The machines are the first to result from the Altos-Acer merger, and fit below the established Altos System 1000 and 5000 boxes, both use the ISA bus and an entry-level version of the Altos Unix operating system, based on SCO's Unix System V/386 Release 3.2.. The 400 uses a 20MHz 386SX CPU and has built-in VGA support. The system 700 is an 80386 system with a 32Kb cache controller. Pricing starts at \$4,700 for the 400, and \$7,600 for the System 700, though the actual price is dependent on individual dealers and distributors.

EUROPEAN COMMISSION'S COMPUTER CHIEF WINS INDUSTRY AWARD...

Dr. Walter De Backer received the 1991 Uniform Industry award at the opening session of the Uniform trade show last week. According to Ed Palmer, executive director of Uniform, through De Backer the Commission "has achieved an advanced position as a reference user in public administration, pioneering in open systems and standards implementations". The EC has 200 local and central databases, providing logistics for many EC policies and internal and external services. Over the ten year period from 1980-89 the EC successfully migrated from proprietary to vendor-independent architectures, introducing Unix and MS-DOS for departmental systems in 1984, and incorporating the computing centre mainframes into the open systems migration process in 1988.

...BUT MAY LOSE OUT IN RE-ORGANISATION

Despite the accolade there are rumours circulating that De Backer, who is director of informatics at the Commission of the European communities, and head of Direction F within the DG IX personnel and administration body, could be talking himself out of a job. De Backer is presently studying a plan to decentralise the running of most of the Commission's computers to the 23 directorates which make up its 15,000-strong organisation. The results are expected in March. Despite statements from a colleague of De Backer, and from Ted Rijke in the DG 13 informatics group, that indicate the rumour is "wishful thinking," and that De Backer is an "open speaker who no-one has tried to muzzle," both Rijke and De Backer's colleague say that the re-organisation will mean a re-shuffle of DG IX, and that its director general, Peter Hay, will leave the directorate as part of these changes. De Backer became director of informatics at the commission in 1981, following 15 years in the telecoms industry.

APPLE, AT&T AND PACER PUSH PORTABLE APPLLETALK

Portable Appletalk came a step closer at UniForum last week when Apple Computer got together with AT&T Computer Systems and Pacer Software to announce a specification for standardising the access of AppleTalk networking protocols from AT&T's Unix Systems C Release 4. The announcements, following on from preliminary details released last September, (UX No 299), mean that software developers will be able to create AppleTalk networking applications for Unix that perform file sharing, printing, electronic mail or client/server operations. AT&T is the first to implement the AppleTalk applications programming interfaces described in the specification for its StarGroup Server for Macintosh Clients, part of its StarGroup LAN Manager Server system. It will begin shipping in February. Apple will implement the APIs in the next release of Portable Appletalk source code, which it licenses to mainframe and minicomputer and networking companies, in an effort to extend AppleTalk to "all major computing environments". Pacer Software Inc, Westborough, Massachusetts, a long-term Apple networking specialist, has already completed ports of the AppleTalk protocols to Unix systems from Hewlett-Packard, DEC, Sun and SCO Unix. The first release of the AppleTalk APIs will be offered on NCR's new Intel-based System 3000. AT&T and Apple promise to distribute the AppleTalk specification beginning in the second quarter of this year.

USER ORGANISATIONS AGREE OPEN SYSTEMS STRATEGY

The 13 user organisations that met last week on the eve of Uniforum to begin flexing their collective muscle, and bring vendors into line, (UX No 317), agreed to cooperate on three key strategies as a coalition. After debating exactly how to word their charter, they came up with this verbiage: 1. facilitate the development of open systems knowledge at all levels of the enterprise; 2. accelerate the delivery of products that meet the business needs of interoperability and portability; 3. define a common process for satisfying user requirements. Spokesman Walter De Backer, chairman of X/Open's User Council, the sponsoring organisation, indicated the group has yet to flesh out the exact meaning of the words they wrote, but they are certainly strong enough to chill the bones of any vendor hearing them. The combined organisations collectively represent \$100m worth of buying power and they seem to be getting ready to exercise that clout in a way that could effectively blacklist products that don't meet their specifications. They intend to meet again formally on May 15 and by then should have a better idea of exactly how far they are willing to go.

WANG JOINS THE BEATEN PATH TO MIPS COMPUTER SYSTEMS' OEM DOOR

The dominance of Sun Microsystems Inc machines in the workstation arena seems to be blowing uncommitted manufacturers looking to add a high-end Unix capability quickly into the MIPS Computer Systems Inc camp. Where DEC builds its own machines around the R-series RISCs, the likes of Control Data Corp, Bull SA and Prime Computer Inc all buy machines OEM from MIPS, and they have now been joined by Wang Laboratories Inc. Wang says that many of its existing customers are now demanding Unix, so it is taking the full MIPS line to come in above its own Intel iAPX-86-based Dynamix models, with first models to be announced by the end of this quarter. Wang says it will convert its PACE database management system, its document management software and other key VS programs to run under Unix, but says it plans to continue to introduce new models in the VS family.

AMDAHL TAKES THE SPARC...

Amdahl Corp is expected to formally announce this week that it has chosen Sun Microsystems' Sparc Risc processor as the basis of the scientific Unix machine it is building using some of the technology from the failed Key Computer Laboratories project, (UX Nos 309, 311, 316). Amdahl will also join the Sparc International group of companies that are supporting Sun's Risc chip to affirm its commitment to the technology.

...AS FUJITSU SIGNS FOR ICL'S DRS 6000...

ICL has signed an OEM deal with Fujitsu Ltd, which will allow Fujitsu to sell the ICL Sparc Risc servers and its OfficePower office system. ICL has already signed OEM deals with Sun Microsystems and Acer Sertek for the DRS 6000 line. Fujitsu will market the machines as the DS/90 line. The systems will be marketed initially to international markets, including Australia, New Zealand, parts of Asia and Spain, as well as in the US through Fujitsu Systems of America to the retail industry. At last November's Unix Expo show, Fujitsu was reported to be working on its own line of Sparc systems, (UX No 307).

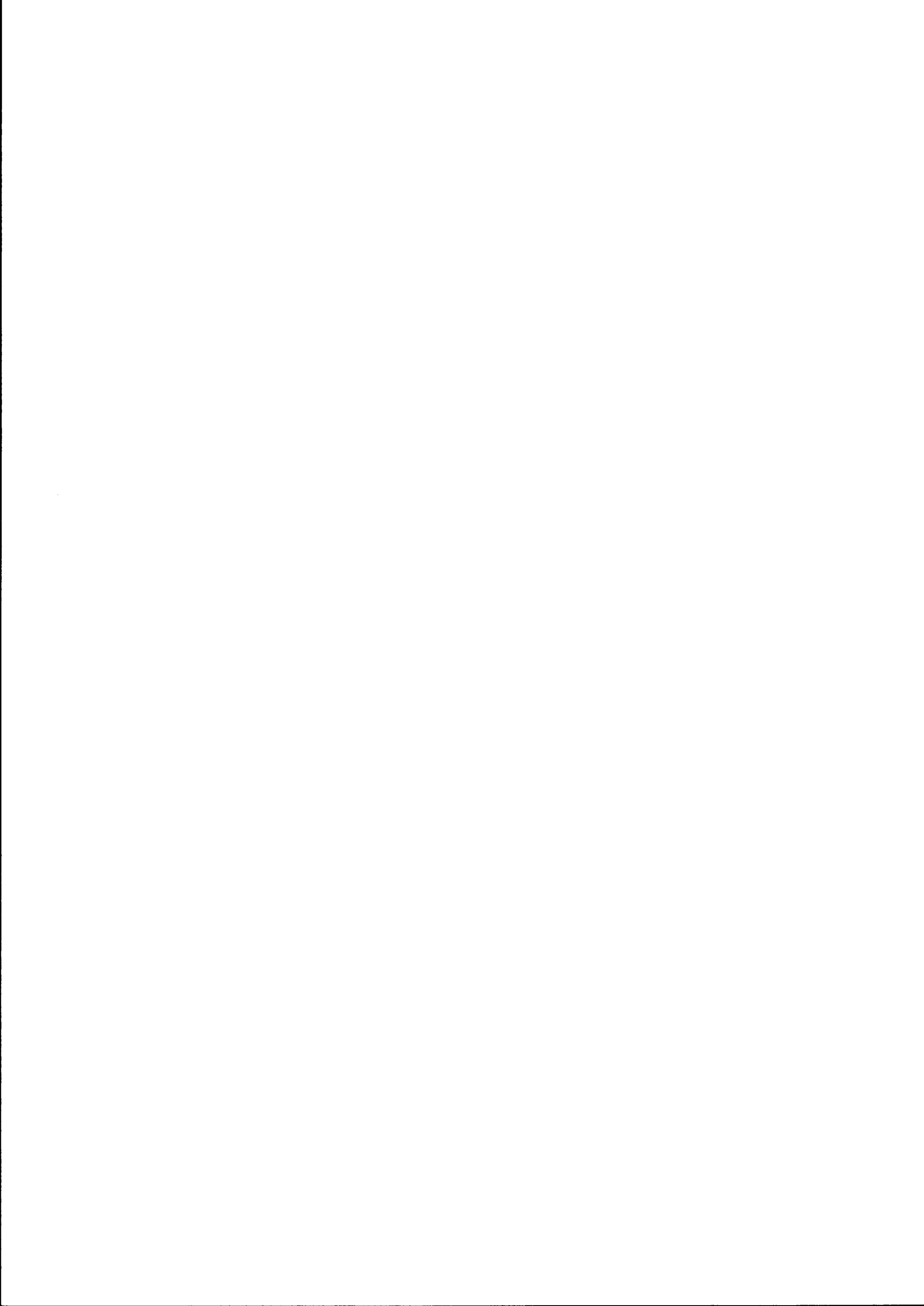
...AND TALKS WITH ICL, AMDAHL ABOUT OPEN SYSTEMS FUTURE

Meanwhile, following Unigram's story a couple of weeks ago that Fujitsu and Sun have begun talks that would bring the two firms closer together, (UX No 316), and that a Sun-Fujitsu-ICL combination with Fujitsu as the manufacturing hub could be a winner against IBM, it is reported that Fujitsu has now started talks with its siblings ICL and Amdahl, about the possibility of setting up a joint product strategy group focusing on open systems. This would presumably involve the Sparc chip in some way, as both Fujitsu and ICL - now Amdahl too - are licencees. According to US sources there have been discussions about the possibility of forming a joint approach to overcoming the technological and commercial difficulties being caused by the effects of open systems on the information technology industry.

OLIVETTI TO TAKE PYRAMID MISERVERS OEM
Pyramid Technology Corp, which so far has AT&T Co and Siemens-Nixdorf Informationssysteme AG as major OEM customers for its MIServer T-series multiprocessor RISC Unix machines, last week confirmed that Olivetti Systems & Networks is to take the machines to top off its Unix line, in a contract estimated to be worth \$110m to Pyramid over three years. Pyramid will continue its direct sales operations in the UK and the Netherlands but will collaborate with Olivetti, which gets rights to market in Europe, Canada and some Far East countries with varying degrees of exclusivity. The agreement also covers the next generation of Pyramid machines, expected to use the MIPS Computer R-series RISCs.

CONCURRENT REACHES AGREEMENT WITH BOND HOLDERS

Concurrent Computer Corp, Tinton Falls, New Jersey, has reached agreement with holders of \$100m of its bonds for a recapitalisation that will see \$110.6m of debt owed to bondholders replaced with \$55m of new senior subordinated notes and a full 70% of the fully diluted voting equity of the recapitalized company - in other words they will end up owning 70% of Concurrent, with the existing shareholders diluted to 30%. The new notes would be due December 31, 1997, and would pay about 13% - in additional notes for up to the first three years. The new notes would be subordinated to Concurrent's debt with its bank group and to its foreign bank credit lines as the company deems appropriate. Concurrent hopes that the agreement will lead to dismissal of the motion for involuntary bankruptcy.



IBM RELEASES PROMISED**TPC-A AND TPC-B BENCHMARKS**

As promised (UX NO 317) IBM released the results of its TPC-A and TPC-B benchmarks from the Transaction Processing Performance Council for its RS/6000 line at UniForum, claiming significant price/performance advantages over Hewlett-Packard, so far the only Unix vendor to release the figures. The RS/6000 Model 520 achieved 17 transactions per second, or \$20,600/TPS, while the Model 550 reached 33 transactions per second, or \$20,400/TPS. The Hewlett-Packard HP 9000 842S and 852S machines clocked at 33 and 43.3 TPS respectively, but the TPS per dollar ratings were higher, at \$25,400 and \$23,900. Both machines beat IBM AS/400 and DEC VAX/VMS ratings. One reason why other vendors have not yet declared is the considerable work and expense involved in running the benchmarks. TPC-A replaces the old debit/credit benchmark and measures multi-user transaction processing, while the less complex TPC-B replaces the TP1 benchmark, representing a multi-tasking database application. IBM's TPC-B figures are 28.7 TPS (\$3,300/TPS) for the 320 and 58.2 TPS (\$4,800/TPS) for the 550, beating ratings from HP and Sun Microsystems.

...ISSUES END OF YEAR REPORT ON RS/6000...

Meanwhile, IBM's C Michael Armstrong, senior VP and chairman of IBM's World Trade Corporation, told UniForum attendees that IBM's RISC workstation business topped a billion dollars in 1990 - against estimates of between \$500m and \$600m - with more than 25,000 customer shipments worldwide. 10,000 RS/6000s were shipped in December alone. The company claims that there are now some 2,500 major software applications from 1,000 companies worldwide - 1,000 above IBM's original estimates for the number of available applications by year end. The applications include packages for computational chemistry, geophysical analysis, electrical/mechanical design, computer-aided software development, databases, languages and office productivity packages, said IBM. Daniel Mandresh at Merrill Lynch & Co now reckons the RS/6000 will do \$3,000m this year.

**...BUNDLES BIGGER, FASTER
DISK WITH RS/6000-320...**

There may have been more at the show, but the best IBM could come up with for the first day of UniForum was an increase in the size of the disk drives that comes with the RS/6000 Model 320 workstations and servers to 160Mb from 120Mb; it also added the 160Mb Direct Attached Disk Drive and the 160Mb to 320Mb SCSI Disk Select feature on the Model 320, now. The company points out that 160Mb disk - which has 30% better seek time at 16ms, 18% faster data transfer rate at 1.5Mbytes-per-second, is still too small to use the 320 machine as a stand-alone workstation. The 160Mb disk comes with the machine, 160Mb to 320Mb SCSI Disk Select is \$3,000; the 160Mb direct attached disk is \$1,950, now.

...AS CAMBEX OFFERS PLUG-COMPATIBLE DRIVES

One of the first companies to offer plug-compatible disk drives for IBM's RS/6000 is Cambex Corp, Cambridge, Massachusetts, which has come out with the Certainty 6200 Series external SCSI drives in capacities of 330Mb, 670Mb and 1Gb. They cost \$5,100, \$7,800 and \$9,750 respectively and are shipping now. Cambex also announced that it is doing a version of its Certi-Stream tape back-up-and-restore utility for AIX 3.0 Unix on the RS/6000, which adds file and directory level operations, master or incremental back-up and restore, and back-up and restore by a specific date. It operates with IBM 7207 or compatible tape devices, including the Cambex Certainty 6800-60, at \$500 for a single machine licence. It will be available later this quarter, Cambex promises.

**DOLPHIN ABANDONS ECL 88000 RISC PLAN,
DECIDES TO WAIT FOR BiCMOS**

Norsk Data A/S affiliate Dolphin Server Technology A/S is re-focusing its effort to build a 1,000 MIPS, multi-processing server based upon an ECL version of the Motorola 88000 Risc chip, (UX No 262). The project, known as Orion, was originally slated for completion late in 1992, but the ECL CPU development effort has run into trouble - similar problems have already bedevilled other projects within the Risc chip fraternity, most recently Mips Computer Systems R6000 ECL part, (UX No 296). Dolphin and Motorola collaborated on the design of the ECL part, whilst National Semiconductor was to be responsible for the silicon. Central to Dolphin's long-term plan has been the use of SCI, the Scalable Coherent Interface bus architecture, which is similar to the Futurebus+ system in concept, but has attracted a good deal less attention. Dolphin already has the 88000-based Triton 88 server under its belt, and now plans to introduce an interim Triton SCI system early in 1992. It will be a 300 MIPS, multi-processor system combining SCI, cache and memory components from the Orion, with Motorola's much previewed 88110 Risc chip. The Orion - now not expected until 1993 - will use Motorola's post-88110, 100MHz BiCMOS technology, rather than the Dolphin-designed CPU. Dolphin, which says it has "peeped behind the curtain and seen what Motorola is up to," has both feet firmly in the Motorola camp, and expects single-chip, multi-processors with 100 million transistors clocking at 300MHz from the firm by the late 1990s, with a 4,000 MIPS part by the year 2000. Dolphin is awaiting final ratification of an SCI standard from the IEEE - expected later this year - and will then go straight into production of the Triton SCI. Dolphin is implementing SCI in a Token-Ring-like formation, which it claims, offers up to five times the throughput of Futurebus+. On the Triton SCI Dolphin will offer bridges to VME-based systems, to other types of SCI systems, and may also develop links to Futurebus+. Enhancements planned for the Triton 88 this year include the addition of Unix V.4, Novell and Banyan Vines networking support, increased storage options and a new plug-in CPU board with up to five 88000 processors. Following its OEM deal with Thomson-CSF SA subsidiary Cetia SA, (UX No 301), Dolphin says it is now finalising a European distribution channel, and will also make a UK announcement soon. Dolphin claims an installed base of 225 Triton 88s.

**SEQUENT DEBUTS 80486
SYMMETRY 2000 SERIES**

As expected Sequent Computer Systems unveiled its Symmetry 2000 series of Intel 80486 systems at UniForum last week, (UX No 316). With space for up to 30 CPUs - though the firm says it is unlikely to sell any with more than 20 - a 16-processor system is claimed to do 350 transactions per-second, running the TPS1 benchmark using the Oracle database. However, unlike some of its competitors, Sequent has no plans to put any of its systems through the Transaction Processing Council's TPC-A on-line transaction processing benchmark paces, but says it will do TPC-B tests later this year. A uni-processor S2000/40 starts at £20,000, the S2000/400 has from two-to-10 processors, whilst a top-end S2000/700 with up to 30 CPUs comes in at \$2.5m, £1.2m in the UK. The 2000 series runs Sequent's multi-processing Dynix/ptx version of AT&T Unix V.3.2, and includes OSF/Motif and AT&T's Tuxedo/T transaction processing monitor.

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NCR Corp's programme to return cash to its shareholders by buying in its own shares meant that although net profit for 1990 fell 24% to \$111m, earnings per share actually rose 1% to \$5.43 - and would have been better but for the cost of fighting the unwanted bid from AT&T Co - NCR says it spent \$9m on its defence, and analysts reckon the bid cost nine cents a share to the bottom line. Sales for the year were up 5% at \$6,285m, and the company says that this was achieved as a result of "significant growth in each of our international organisations".

Autodesk Inc's Japanese subsidiary is to begin selling an enhanced version of its parents' computer-aided software design package on Unix workstations. With improved memory functions, Autocad-Gx-5 is already sold on NEC, Fujitsu, Matsushita and IBM personal computers - the software will now be offered initially on Sun Microsystems workstations, followed by Hewlett-Packard, Sony, NEC and DEC systems. The company claims 30,000 copies of Autocad sold in Japan.

IBM Japan Ltd is setting up a new 300-strong sales force to sell the RS/6000 series. At present the AIX boxes are sold on a region-by-region basis alongside mainframes and other systems. The market is presently dominated by Toshiba and Fujitsu with OEMmed Sun Microsystems kit - IBM Japan reckons it can grab a 20% share of the market by value within three years.

In what is very bad news for Cray Research Inc as it scrambles to play catch-up and develop its own massively parallel processor, the Albuquerque, New Mexico-based Sandia National Laboratories, which has seven Crays, told the Wall Street Journal that it has probably bought its last vector supercomputer after converting all the 20 major programs that account for 95% of its computing time to run on parallel machines from either Thinking Machines Inc of Cambridge, Massachusetts, or Ncube Inc of Belmont, California - on which they run from 10 and 100 times faster; most observers had not expected parallel machines to take over before 1995.

NEC Corp says that it is planning to manufacture laptop workstations - presumably based on the MIPS Computer Systems Inc RISC - in the US: its NEC Technologies unit in Massachusetts will build a new plant and establish a sales network over the next 12 months or so, but its initial ambitions are modest with a first year target of just 6,000 machines.

Now that Fujitsu Ltd owns 80% of ICL Plc, the two companies are discussing exchanges of engineers and joint Unix systems development.

The shortage of system engineers in Japan is now such that NCR Japan Ltd is planning to offer jobs to 10 foreigners studying in Japan among the 130 graduates it plans to take on in April: the foreigners - from the UK, the US, India, China, Taiwan and Malaysia, will work for several years with NCR Japan and will then be offered the chance to transfer to the NCR company in their mother country.

Arthur Andersen & Co's Andersen Consulting has established a workstation laboratory with an initial 10 employees at its Tokyo offices to strengthen its consulting business: the lab will be equipped with a variety of workstations and will evaluate and develop workstation applications for the Japanese market.

Toshiba Corp, which reckons that it sold 2,600 workstations in the six months to September, hopes that when the figures come to be added up in March, the total for the fiscal year will be over 10,000, with 7,900 in the current half: the firm now builds its own stations around Sun Microsystems' Sparc.

The agreement for Businessland Inc to carry NeXT Computer Inc's systems is falling apart, the San Francisco Chronicle, suggesting the development is mainly down to Businessland's poor performance, and even quoted Businessland founder Dave Norman as being more hopeful than optimistic about the firms' continued alliance; NeXT has started signing up other retailers, starting with the four-store Computer Attic in Palo Alto, California.

Amdahl Corp is to support the Extended Data Processing image processing software from the Plexus Software Inc subsidiary of Recognition Equipment Inc on its mainframes under the UTS implementation of Unix System V.3.1. The optical jukebox support in the XDP has been enhanced to handle Data/Ware Development Inc's channel-attached jukeboxes.

Motorola Inc, Cupertino, California, has signed a \$3m agreement to sell its Delta Series 8000 RISC systems to Ontario Systems Corp, a Muncie, Indiana-based supplier of computer-based debt collection systems: Ontario Systems will sell its Flexible Automated Collection system software with Motorola's Unix computers; Motorola's Commercial Systems Division was awarded the contract and it calls for Motorola to supply terminals, peripherals, maintenance and technical support; FACS includes a computerised telephone dialler, and also provides letter generation, trust accounting, skip tracing, information retrieval and a feature that tracks the progress of legal proceedings; the Delta Series 8000 computer systems covered by the agreement include the Model 8408, Model 8608 and the dual-processor Model 8864.

In its latest salvo in the battle to get AT&T Co's tanks off its Dayton lawn, NCR Corp has filed a Federal anti-trust suit charging that the acquisition of NCR by AT&T would reduce competition in both computers and telecommunications - it claims that the combination would lead to an unhealthy concentration in the Unix systems market, in mixed-mode cell-based applications-specific integrated circuits, automated teller machine services and transaction processing systems.

Unix International has appointed Scott Hansen as managing director of its European operation. Hansen, formerly applications and development systems director for AT&T's data systems group, replaces Steinar Hoistad to head-up NCR's Norwegian operation, from where he came originally.

X/Open has appointed Montreal-based research firm DMR Group Inc to carry out its Xtra market research programme, help publish the Open Systems Directive and manage its annual Xtra conference, the next of which takes place in November in Washington DC. And X/Open says that it expects to double its number of user council members - which now stands at 30 - over the next two years.

ICL says it has adopted AT&T's Tuxedo/T transaction processing monitor - it will be the basis of a distributed transaction product which will be announced later this year.

AT&T salesmen last week were taunting NCR folks telling them, "you're toast." NCR insiders say the company reckons it only has a 10% chance of escaping AT&T's warming embrace. It's strategy is to delay any consummation of the marriage for as long as possible, maybe as much as two years, by dragging its unwelcomed suitor over as many hurdles as it - or its lawyers - can devise. One of the things it's hoping will happen is that "Ole bust 'em up" Judge Green will get involved, which will give NCR a chance to trot out its arguments that AT&T's semi-monopolistic position gives it an unfair advantage. NCR executives, who already claim AT&T's sales force is deflated because of job insecurity, figure this strategy might scare off the giant by threatening business. On the lighter side, they're saying that the entity that results from the combination of AT&T and NCR should be called Cash Registers And Phones, (CRAP).

unigram · x is published weekly by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH. Telephone +44 (0)71 528 7083. Fax: +44 (0)71 439 1105
Publisher: Simon Thompson. Circulation Manager: Brigit Ingham. Editor: John Abbott. Editorial Team: William Fellows, Mike Faden.

Subscription rates on request.

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- 6 FEB. 1991

The weekly information newsletter for the UNIX™ community worldwide

London, February 4-8 1991

Number 319

MIPS REVEALS PLANS FOR SMOOTH TRANSITION TO ITS TRUE 64-BIT RISC, THE R4000...

MIPS Computer Systems Inc has been lifting the veil somewhat on its third generation RISC processor the R4000, (UX No 261, 310), a full 64-bit implementation of its architecture, and according to Mips the first true 64-bit RISC implementation. In the view of MIPS, CISC technology "will essentially die at 32-bits - third generation RISCs imply multiple instruction issue processors". The R4000 uses superpipelining techniques to achieve this, and includes 64-bit virtual addresses, integer arithmetic logic unit, and integer registers, in addition to the 64-bit paths to cache and main memory and floating point ALU that often make up the sole constituents of claimed 64-bit implementations. The R4000 also includes 64-bit compatibility with 32-bit products, allowing it to take full advantage of current software technology. Its initial performance rating, expected to be around 50 Mips, will be improved when MIPS introduces its first 64-bit compiler later this year or early next - the initial product offering will come with a 32-bit compiler. Not all software will require 64-bit operation, says MIPS, which expects 32-bit and 64-bit software to be running side by side by the end of the decade. Large database applications, technical applications with display list graphics or large data sets, and next generation, highly complex applications will gain the most benefit. MIPS says that the R4000 will provide "a smooth transition through the 32-bit crisis", bought on by the need for leading edge applications to burst the 4Gb address space barrier of 32-bit systems. MIPS claims the crisis will occur "as early as 1991, but no later than 1994". Including on-chip 8Kb data and instruction caches and on-chip floating point unit, the R4000 also supports secondary caching and hooks for multiprocessing. MIPS hints at a second quarter announcement with "functional systems booting Unix", but less optimistic sources don't expect to see systems using the chip until the middle of next year.

...WHILST INTEL 80586 "WILL BE A 64-BIT SUPERSCALAR PART"

The forthcoming Intel 80586 part will be a superscalar 64-bit microprocessor according to intelligence picked up by Computer Reseller News. The US trade weekly reckons that the part will have two 64-bit arithmetic-logic units, a 64-bit bus, and "multiple" 80386 instruction units - and will be clocked at 66MHz in its first iteration. The multiplicity of instruction units mean that the part will be able to execute several instructions in parallel where the software allows, making it superscalar. It will also double the on-chip cache of the 80486, offering separate 8Kb instruction and data caches. It will have an 80387-compatible floating point unit on chip, and will also retain compatibility with the 8086 and 8088. The 64-bit design implies a new native mode that suggests that software will have to be recompiled and perhaps converted to some degree to exploit the full capability of the chip - and true native software could be a very long time coming because the 80386 has come and is going and the 80486, Intel's second generation 32-bit microprocessor, is well into its life cycle, yet the first 32-bit version of OS/2 is only now beginning to ship. The enhancements are expected to result in a part offering four times the power of the 80386 - which sounds very much like overkill on the desktop. It should also make life easier for software developers, offering two new on-chip features, Probe Mode to examine and modify the CPU and system state, and Performance Monitor to enable developers to watch their programs executing, showing up things like the cache hit rate. Intel says that it expects machines built around the 80586 microprocessor to start appearing next year.

OSF LEAVES ANDF WINNER IN DARK UNTIL TOP FIVE VENDORS COMMIT TO USE IT

The Open Software Foundation reckons its Architecture Neutral Distribution Format approach to the shrink-wrapped software issue is so revolutionary it's changing its Request for Technology process to accommodate the novelty. The consortium has already secretly picked the winner of the RFT, (UX No 318), but according to research and development vice president Ira Goldstein, it's not going to go any further until the world's top five computer vendors agree to sign-off on the idea and effectively agree to do something about it, starting with task groups. Goldstein identifies the critical manufacturers as IBM, DEC, Hewlett-Packard and NCR definitely, with maybe Bull or Siemens-Nixdorf in the number five slot. He figures he's got a pretty good shot.

HP'S SNAKE "TO BRING NEW GRAPHICS POWER TO DESKTOP"

Sources inside of Hewlett-Packard are getting more excited about the company's forthcoming Snake line of workstations, (UX No 318) as the launch, expected within a month, gets closer. The machine will apparently "redefine what a desktop workstation is, particularly in terms of graphics", it was claimed. Snake gets around the performance penalties associated with X-Windows by incorporating the graphics instructions from the highly regarded Apollo DN10000 RISC machine, which allows the graphics to be scaled along with the architecture. Also from the Apollo machine comes multi-processing support and compiler technology - software engineers working on the DN1000 have boosted the Apollo SpecMark from 12.8 when it originally came out up to 18.8, simply by improving the compilers, which incorporate an expert system back-end for dataflow and analysis techniques. ISVs "are falling over themselves to get at the machine", said an insider, who also claimed that Snake would be the first machine to pass the 1 SpecMark per MHz barrier, and unlike the rival RS/6000, which is strong on floating point performance but has trouble with compiler and memory management technology, would be "a well balanced machine".



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EUROPEANS ENTER INTO THE SPIRIT OF THINGS

Spirit, one of the European workstation projects being developed under the wings of the European Commission's Esprit II programme, (UX Nos 315, 270, 239), is due for release in the third quarter of this year. The first iteration of the multi-processing box - Spirit-O - will use up to 12 Motorola 68040 processors running at 25MHz across a VMEbus backplane. Rated at around 90 MIPS and up to 20 MFLOPS, it'll come with from 16Mb to 128Mb RAM, 12 expansion slots, Ethernet, Fibre Distributed Data Interface, SCSI, CD-ROM drive, tape streamer and floppy drives, supporting screen resolutions of up to 1536x1280 pixels. A Futurebus+ version, Spirit-I, is planned for the third quarter of 1993 - it will use up to 32 50MHz 68040s, and is rated at between 100-300 MIPS, 20-50 MFLOPS. A third iteration - if the project runs this far - Spirit-II, is pencilled in for the beginning of 1994. Its specification includes the use of up to 32 next-generation Motorola 68050 parts running at over 50MHz - delivering between 300-1,000 MIPS and 50-200 MFLOPS - plus RISC, presumably an implementation of Sun Microsystems Inc's Sparc chip, which is being used in other Esprit-derived workstation projects, (UX No 315). The Spirit will run Amsterdam-based ACE Associated Computer Experts bv's multi-processing Unix implementation. Partners in the project include Kontron Elektronik GmbH, Echting, Germany - responsible for CPU board development; British Aerospace Dynamics Ltd, Plymouth, Devon - artificial intelligence system; Caption, Chantepie, France - graphics subsystem; Eberhard-Karls University, Tubingen, Germany - three-dimensional image-processing; Queen Mary and Westfield College, London - graphics interface and object-orientated environment; School of Engineering, University of Sussex, Brighton - simulation and graphics subsystem architecture.

ORACLE SERVER FOR UNI-PROCESSOR, MULTI-PROCESSING UNIX PCs

In the UK, Oracle Corp is launching Oracle Server - an implementation of its Oracle 6.0 relational database management system - for multi-processor and uni-processor Intel 80386 and 80486 personal computers running SCO's multi-processing Unix/MPX, SCO Unix V/386 3.2.2 and AT&T Unix V/386 operating systems. The Unix version of Oracle Server supports MS-DOS, OS/2, Apple Macintosh and other Unix-based client systems over TCP/IP, with Novell NetWare SPX/IPX support scheduled for the middle of February. Oracle Case, programming interfaces and Oracle for Lotus 1-2-3 software are all available for the release. Oracle Server for PC Unix requires at least 6Mb memory and 80Mb disk to run. Prices start at £3,500 for uni-processor versions supporting up to eight users - £7,000 for the multi-processing copy - rising to £53,000 and £80,000 respectively for up to 96 users. A dual-80486 Compaq SystemPro with 32Mb memory was benchmarked at 42.4 transactions per-second by Codd and Date Inc using the TP1 performance tests. Oracle is also working on expanding its graphical user interface functionality - currently it only supports DECwindows and certain X-Windows implementations - OSF/Motif, Open Look, Presentation Manager and Apple Mac support will be added to its products by the end of the year. Following versions for OS/2, and now Unix, Oracle Server for the Apple Macintosh Inc computer and Novell NetWare 386-based systems will be out later this year - meanwhile Oracle is currently looking for OEM deals for the desktop software.

SQL ACCESS GROUP ADDS TEN - MEMBERS WORK ON PROTOTYPES

Apple Computer, DB Access, Gupta Technologies, Locus Computing, Lotus Development Corp, Micro Decisionware, Novell, Software AG and Sterling Software are the latest companies to sign on the books of the SQL Access group, based in Long Beach, California, the association that is developing a specification for the interoperability of SQL-based relational database systems from different vendors. The ten newcomers bring the group's total membership up to 33. The specification is now said to be complete, and members are now developing demonstration prototypes.

RDI BRITE LITE "ON THE WATER", BUT BACKLOGGED UNTIL MARCH

Research Development Innovations' name for its Macintosh emulation software, now available to any Sparc-based machine, didn't last very long. It's already gone from Softmac, (UX No 317), to Companion, even though Apple didn't give it any grief about it. Of all the Sparcettes, RDI's Brite Lite Sparc laptop also seems the fastest out of the blocks. President Rick Schrameck is valuing January sales at 5,000 units, or \$39m, a pretty hefty figure for a company that hasn't started delivering yet. As we went to press, Schrameck said the first 500 units were "on the water," coming to the states from RDI's manufacturing partner TriGem in Korea, and would go out to customers at the end of this week. The January sales flurry, a lot of it created by US government orders, means Brite Lite will be on backlog until at least mid-March. Schrameck said the delay is being caused by the inability of LSI Logic and Sun Microsystems to deliver motherboards, rather than any difficulties at TriGem's end.

TIVOLI SUBMITS WIZARDWARE TO OSF's DISTRIBUTED MANAGEMENT REQUEST

Tivoli Systems, a little Texas start-up, reckons it's got what the Open Software Foundation is looking for in the way of distributed management technology - all it has to do is beat out heavyweights like DEC, Hewlett-Packard and IBM in the race for the Distributed Management Environment plum, the consortium's latest Request for Technology, (UX No 293). Tivoli, the brainchild of two ex-IBMers, claims its Wizardware software, which has been submitted for OSF's consideration, will be able to increase administrator productivity to the point that the current ratio of systems administrators to distributed Unix machines - now in the range of 1:10 to 1:30 - could shoot to between 1:100 and 1:200. That's pretty big talk even for a Texas company, especially one that's only been in business since August 1989. But even with its software yet to go into beta-testing, albeit in Fortune 100 sites, the firm has had some impact, with a number of its systems management concepts already part of IEEE's 1003.7 standard. Wizardware, consisting of a management environment and complementary applications, is meant to automate a secure, heterogeneous distributed installation in a network-transparent fashion. Current Wizardware applications, each available separately, reportedly include user management, group management, host management, subnetwork management, Kerberos management, Yellow Pages management, authorisation management and notification management. Users can also substitute their own applications. Tivoli is currently focused on the Unix market but intends to expand to OS/2 and Netware. It also currently offers two user interfaces: one based on X-Windows, the other a command-line alternative. Other graphical user interfaces are supposed to be supported later.

NATSEMI UNVEILS "FIRST" FUTUREBUS+ CHIP SET

National Semiconductor Corp duly introduced what it claims is the first available chip set designed for the new Futurebus+ bus standard. The set consists of five devices - the bipolar DS3883 9-bit BTL data transceiver, BiCMOS DS3886 9-bit BTL latched data transceiver, DS3884 handshake transceiver and DS3885 arbitration transceiver, and CMOS DS3875 arbitration controller. Futurebus+ offers 10-fold better throughput than current buses such as VME, transferring at up to 3.2G-bytes-per-second. Available now, the full set costs \$73.35 for 100-up; each is available separately.

AT LAST, COMMODORE'S UNIX BOX MAKES ITS DEBUT

After spending an eternity getting its Unix System Release 4 Amiga gussied up for its formal debut, (UX No 287), Commodore Business Machines Inc, West Chester, Pennsylvania, finally had the 68030 machine make her bow at Uniform. The sexy commercial box, which has the Unix System Labs folks gleeful, comes pre-loaded with X-Windows and Sun Microsystems' Open Look as well as AmigaDOS. Commodore's Unix manager Paul Calkin, who said Open Look was picked because of its programming consistency and superior number of applications, suggested that there would be some sort of joint marketing done with Sun, but was not specific about how that would work out. There are two Amiga 3000 configurations: an entry-level UXB machine with 4Mb RAM and 100Mb hard drive, priced at \$5,500 and an upper-end UXD with 8Mb memory and 200Mb hard disk priced at \$7,000. Neither price includes a monitor. Calkin said 1,000 units have been shipped to beta-test sites. The company is also hopeful of upgrading a portion of its installed base, numbering around two million Amigas, to Unix. Despite the time taken getting the 3000 to market, and its existing international base, Commodore is not quite ready for offshore sales. This month it will add foreign keyboard support, but the defaults will still be in English. Commodore is also toying with the notion of adding an alternate operating system in a couple of months, but has not specified what that might be.

AMDAHL UNIX HOSTS SUPPORT ULTRA'S HIGH-SPEED NETWORK

Amdahl Corp has added support for Ultra Network Technologies Inc's Ultranet high-speed local area network on its large-scale Unix mainframes, facilitating their integration into supercomputer networks. The combination will be tested at the Ames Research Center's Numerical Aerodynamic Simulation facility.

TIS UNVEILS GLOBAL 3000, SYSTEM MANAGER INTERFACE

TIS Software Ltd, Bourne End, Buckinghamshire, this week releases Global 3000, an accounting and office automation application development environment based upon its Speed-Base fourth-generation language. Combined with a new interface-layer product called System Manager, users can build single object-code versions of accounting and office automation modules that will then run unchanged across a variety of hardware platforms, including the Mips Computer Systems boxes, IBM's RS/6000 and the Intel-based TIS i-Server, as well as on SCO Unix, MS-DOS and Novell-based systems. TIS says Global 3000 is fully compatible with the existing Global 2000 accounting suite - Global 2000 users will also be able to take advantage of System Manager to develop multi-platform applications.

OKI ELECTRIC CONFIRMS PLANS FOR 80860-BASED WORKSTATION

Oki Electric Industrial Co has finally confirmed our story that it is ready with a workstation based on the Intel Corp 80860 RISC, (UX No 302). The company says it plans to launch the workstation, which it rates at 45 MIPS, in both Japan and the US, and is hoping to sell 5,000 of the things a year. But it has not yet set a date for the start of marketing, and has not fixed prices. The workstation will be built around a 40MHz version of the 80860 and will come with Unix System V.4.

X/OPEN JUGGLES HOT POLITICAL POTATO AS IT CONSIDERS ADOPTING SVID

Towards the end of last year, the forces of AT&T, most notably Sun Microsystems, began a drive to get X/Open to formally adopt the System V Interface Definition. Now, since the SVID is nothing less than the System V specification, the manoeuvre is nothing more than a thinly disguised attempt to get the premier Unix standards group to standardise on System V Release 4 and snub the Open Software Foundation's OSF/1. OSF president David Tory told Uniform the week before last that this particular anti-OSF ploy was nipped in the bud. Well, we hate to burst his bubble, but the truth is the ball is still in play. According to X/Open president Geoff Morris and Unix International president Peter Cunningham, the notion wasn't deep-sixed, but sent to an X/Open subcommittee simply because it was brought to the last sitting of the X/Open board at the last minute rather than the required six weeks or so before it met. The motion is still in that subcommittee and will stay there - alive and well - until the X/Open board meets again, whenever that is. It was supposed to be right after Uniform on January 25, but that was scrubbed because of the war with Iraq and we last heard it was indefinitely on hold.

SUN OFFERS FIVE NEW PRODUCTS IN SPARCENGINE FAMILY...

Sun Microsystems Inc has expanded its Sparcengine IE Eurocard family of boards with five new hardware and software products. The 4E60-GX Graphics Expansion Board combines graphics acceleration hardware with SunOS and a graphics library, and is claimed to support interactive manipulation of complex objects with "significant realism and clarity". The 4.1e release of SunOS is aimed at Sparcengine customers and adds asynchronous input-output commands for multiple reads-without-wait, synchronous SCSI driver support for faster disk input-output, and 40% faster Ethernet driver throughput; it offers loadable device drivers, SBus and VMEbus support for Sun peripherals and devices, and full Posix 1003.1-1988 and FIPS 151-1 adherence. The Sparcclusters Software enables SunOS 4.1e to support up to 16 Sparcengine 1E processor boards on a single VMEbus backplane, and is included in SunOS 4.1e. The 4E60-SRX SBus/RAM Expansion Board enables developers to add a second SBus connector to a Sparc engine 1E and has sockets for memory expansion; and the 4E60-16 Board uses 4M-bit memory chips to offer 16Mb. The 4E60-GX graphics board is \$6,000 and is available now. Sun says that SunOS 4.1e will be available in 30 to 45 days, will be delivered on quarter inch tape and will cost \$350. The 4E60-SRX SBus/RAM board costs \$900 with no memory fitted; the 16Mb 4E60-16 costs \$12,000 including a two-user SunOS right-to-use licence, and both are available now.

...AS KL GROUP ADDS TO OPEN LOOK

The KL Group, Toronto, Ontario, has developed what it believes is the first commercial extension to Sun Microsystems Inc's XView Open Look windowing toolkit. XRT/graph adds plot, bar chart and pie chart objects to XView, and includes a prototyping and development tool called Builder. Builder generates C code from graphs designed by manipulating XRT/graph's objects, which can then be embedded into other applications. XRT/graph runs on Sun workstations with Open Windows, on X-terminals, personal computers with X-Windows server software and other workstations supporting X11 release 4. XRT/graph costs from \$1,300 and is available now.

MICROSOFT'S "NEW TECHNOLOGY" OS/2 COULD COMPETE WITH UNIX - BUT NOT FOR ANOTHER TWO YEARS AT THE EARLIEST

Confusion reigned last week over Microsoft Corp's intentions for OS/2, following a report in the *Wall Street Journal* last Monday that claimed the company was ready to drop its OS/2 operating system, due to widespread apathy from the computer industry.

Microsoft denied the Journal's charge that it would henceforth be concentrating on its bestselling Microsoft Windows, and at a seminar the next day revealed that it is working on a new portable version of OS/2 that would include support for 32-bit MS Windows technology, symmetrical multi-processing, compliance with the Posix standard and security to the Orange Book B2 level, (UX No 309). Due out within two years, OS/2 3.0 or OS/2 NT - for New Technology - will become available on non-Intel platforms for the first time, with the MIPS RISC chip tipped as the most likely initial port, (UX No 305), followed by Sun's SPARC processor, and hence provide viable competition to Unix for the first time. But critics claimed that the new product does mean that Microsoft has given up on OS/2 and Presentation Manager - NT will be a complete re-write and re-focus of original OS/2 to incorporate Windows and MS-DOS applications as well. Meanwhile, IBM, which took over responsibility for Intel-based OS/2 versions last September, (UX No 301), remains in charge of OS/2 1.3 and the 32-bit 2.0 version, which is now shipping. But Microsoft did not quite succeed in dispelling compatibility doubts over OS/2 2.0 and 3.0, and current and future Windows versions. An official statement claimed "we will absolutely have Presentation Manager support in OS/2 3.0. The 32-bit PM support is no issue. 16-bit PM support is a little more complex, and we are still working on the technical details". Microsoft continues to work on DOS 5.0 and DOS 6.0, as well as Windows and various development tools. Release 4.0 of Windows - known as Win 32 - should be out next year, but will eventually be included in the system kernel of OS/2 NT. But given Microsoft's recent record of keeping deadlines with OS/2, should we expect it to keep the two-year target for what is a major re-write of its operating system code from machine language into C and C++? Watch this space.

OSF LOOKS FOR DOCUMENT TYPE DEFINITION SOFTWARE

The Open Software Foundation has a call out for Document Type Definition (DTD) technology to aid in the interchange of OSF-produced documentation. Not a full-blown Request for Technology according to tools group manager Fred Dalrymple, OSF has nevertheless sent out something in the neighbourhood of 500 to 1,000 solicitations. Letters of intent to respond were due last Thursday (Jan 31st) and actual submissions are due on April 15th. A document type definition is a set of rules defining the semantics and structure of a particular document without dictating its format, usually the job of a proprietary applications package. Whichever DTD OSF chooses will have to conform to the rules of the Standard Generalised Markup Language (SGML/ISO 8879) according to a decision the consortium made last year. Dalrymple said the consortium was still unsure how the technology would eventually be provided or whether or not OSF's selection would be a composite of existing software.

X/OPEN DIRECTIVE PUBLISHED,

ROADMAP AND XTRA SURVEY TO FOLLOW

X/Open has published its Open Systems Directive, a compilation of industry-wide requirements for open systems as seen through the eyes of users, vendors and developers who took part in the organisation's 1990 Xtra market research endeavour. The X/Open roadmap of how these perceived requirements should be implemented and scheduled is to follow in the next three months. X/Open's 1991 Xtra survey, involving a dozen major user groups, a much larger sample than its first effort last year, will be carried out by the DMR Group, the Canadian company that carried out the multi-million dollar Strategy for Open Systems investigation for the UniForum user group last year. DMR will also organise X/Open's annual Xtra Requirements Conference set for November in Washington DC. Unlike last year, the survey results will be available before the meeting.

SIREN CALLS FOR NEW SOFTWARE PRODUCTS

Bruce Cleveland, the man behind the growth of Oracle Corp's Unix division before he left last year, is now the co-founder of a brand new Unix software distributor, Siren Software in Menlo Park, California. Cleveland aims to take what he learned creating one of largest Unix sales operations in the business and turn it to his own advantage. With Unix not yet a mass market, impeded as it is by multiple versions, he says the conventional rules of selling that prevail in the PC arena just don't apply, meaning a Unix distributor either has to write the programs himself or acquire them and basically create primary demand. If he acquires programs, as Siren has opted to do, the up-front money can't be as big as the DOS merchants are used to, but the initial sacrifice can net the authors much bigger royalties, maybe somewhere between 15% and 30%. What Siren is willing to pay for a program depends on its state of readiness. So far it's only got one program lined up, a thing called ZipMail, which author Dan Heller (a writer of a few of the O'Reilly-published Unix technical guides) has been working on for five years. ZipMail, due out of beta test by March 1st, is essentially a 4GL for processing, screening, and sorting electronic mail, running under Open Look, Motif or on character-based screens. It can stand on its own as a complete mail system or be paired with existing office automation software. It will sell for \$300 single user or \$2,400 for 16 users. Cleveland admires Frame as a software distributor and plans to modify the model, selling direct and through telemarketing as well as to hardware and software OEMs, starting perhaps with Pyramid and some of those he cut Oracle deals with. He has no solid plans for other products yet, but considers that Siren could handle 10 at most, with the monies from one funding the acquisition of the next. Everyone's looking for the "killer application" he says, but the way to build a \$100m business is by stringing together a bunch of \$10m lines.

AFTER ALL THESE YEARS, PLUCKY DATA GENERAL FINALLY MAKES IT BACK INTO THE BLACK

True to its word, Data General finished the calendar year with the first set of profits in eight quarters, appearing finally to be reaping the rewards of its investment in open systems. Net earnings for the first quarter amounted to \$12m, against a net loss of \$20.5m for the same quarter last year, on sales that rose 7% to \$312m. Product sales accounted for 64% of total sales, with service revenues making up the remaining 36% - proportionally mirroring the previous year. Of the \$200m product sales, Data General's AViiON line contributed 20% over the period with sales of around \$40m, and sales of the proprietary MV systems are reported to have stabilised with the introduction of the new Eclipse MV/3000 multiprocessor. Total AViiON sales to date are estimated to be worth \$150m - this figure includes part of the disputed \$127m contract with the US Geological Survey, and UK director and general manager Tom Weanie says the company has received another \$200m in orders, which presumably also includes part of that contract. Data General Europe is reported to have had its strongest ever quarter, in terms of revenues, especially in the UK where says Weanie there has been strong demand for the AViiON product line - which was expanded during the quarter to include the low-end AV 100 - as well as for the latest proprietary MV models, and an encouraging level of service contracts have been won back from third-party maintenance companies - including one worth £250,000. The company has been extending its services and working with third-party value-added resellers, with incentives to try and win back lost clients. Data General's cost reduction programme also seems to have paid off, with operating costs down by \$18m compared to the first quarter of 1990. The company is in a strong financial position, with only \$50m long-term debts, and \$55m cash in the bank, and points out that if the economic recession ever reached crisis point it could live off its balance sheet for two to three years. Wall Street reacted immediately to the company's return to profit by doubling share values from \$4 to \$8.25.

* Meanwhile, it appears that Data General's distributed office-oriented object management system business called Hyperdesk is to be 70% owned by Japanese software and publishing company Ascii, with the project's Data General management owning the other 30%. The new US company will increase its staff from 21 to 50 this year, and expects revenues of \$4m in 1992, and \$10m in 1993. A date for Japanese sales of the HyperDesk product, which resembles Hewlett-Packard's NewWave, hasn't been set, despite plans to start distribution in the US at the end of this year.

SPAIN OPTS TO DEMAND X/OPEN COMPLIANCE

Following the examples of West Germany and the UK and conversations last September between X/Open and the Eighth Plenary Session of the Spanish Higher Board of Data Processing, the Spanish Government has finally adopted the XPG 4 standard as a recommendation for all public procurement of multi-user systems. The decision was made as part of, and to promote, the Spanish Government's open systems strategy, which follows the European Community's policy of standardisation and is independent of individual procurement procedures. It is mainly aimed at new systems but the plan is to apply it also to centres with information technology based on proprietary systems by adding bridge products or "open" versions of operating systems. Centres are currently being advised to develop transition plans. It also promotes use of OSI-ISO standards in communications and is to be developed, updated and edited by the committee responsible for the acquisition of goods and services. The XPG 4 recommendation will not apply to orders under \$150,000.

DEC PLUNGES FORWARD IN SOFTWARE TOOLS WITH FRIENDLY UNIFIED SOFTWARE ENGINEERING

DEC is continuing to polish up its computer-aided software engineering act as it pursues its strategy of becoming a software and services company. To wit it has made some software tools announcements, (UX No 316), unveiling DEC Fuse - Fuse standing for Friendly Unified Software Engineering - which is a visual tool-set for DECstation and DECsystem environments; a suite of Ultrix RISC language compilers and additional third-party software tools for the Ultrix RISC environment; as well as announcing that VAX-set tools will be rewritten by the second half of this year to be portable across all DEC environments and will then be renamed DECset. Geoff Roach, European Cohesion marketing manager, says that as regards the cuts that DEC is implementing, he is not aware of any planned impact on IBM's CASE products or development because they are big revenue generators and help sell hardware. Fuse is important because it provides a uniform DEC OSF/Motif-based user interface for all of DEC's Ultrix software tools, ensuring that Motif replaces DECwindows over time. This suite of lower-CASE tools for Windows offers, among other things, a graphical program builder that sits on top of the Unix Make utility to help developers compile software, its debugger can transform a set of debugger commands into push-buttons, while the Call Graph Browser displays program calling structure and a code manager based on the Unix utility Source Code Control System, SCCS. For example, you can bring C code into Fuse and the Call Graph Browser will execute the program presenting a graphic picture as it does so. The product works for the benefit of project managers, enabling them to keep a centralised overview on application development so that they can spot bugs and system dependencies that don't work. Using Fuse, DEC believes, the time that's required to develop Windowing systems can be dramatically reduced, from, say, a fortnight to two days. DEC believes that the product will make Motif applications much more popular as it cuts out a lot of the requirement for specialised development knowledge. Furthermore, as the underlying User Interface Language is the same for all Open Software Foundation members, Fuse can run on other vendors' workstations as well as offering users the ability to convert DECwindows applications for Motif, since DECwindows and Motif share the same Interface Language. Fuse is priced at £1,460 and will ship in March. It currently supports DEC's C, Fortran and Pascal compilers for Ultrix and is ready to support C++, although no announcement has yet been made to this effect. It can be used with any database management system, but at present Ultrix SQL is the preferred option. Finally, DEC announced that Cognos Inc's Powerhouse and Computer Associate International Inc's CA-DB:Generator are now available under Ultrix.

MAINDEC MOVES TO OPEN SYSTEMS WITH ACQUISITION OF SYSTEMS OPTIMISATION

DEC reseller and maintenance company Maindec Computer Systems Ltd of Wooburn Green, Buckinghamshire, has established a new division focusing on Unix-based software - and plans to broaden its horizons by selling IBM AIX-based hardware and possibly other Unix machines alongside Ultrix-based DECsystems. The new division - called Maindec Open Software - started trading on December 1 last year, and takes over the operations and client base of 14 year-old Systems Optimisation Ltd, previously based in Reading.

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Rabbit Software Corp, Malvern, Pennsylvania, has changed the name of its entire range of Unix-based software from RabbitPlus to Open Advantage.

Locus Computing Corp Ltd, Aylesbury, Buckinghamshire, has signed up Dutch firm Foundation Software BV, to distribute its PC-Xsight and PC-Interface Unix/MS-DOS integration tools in Holland.

Sequent Computer Systems has appointed Peter Winder as European strategic account director - Winder was formerly general manager of Sequent UK, and is replaced by John McAdam, previously Sequent's sales director.

Siemens Nixdorf Information Systems Ltd, Bracknell, Berkshire, has signed up for Edinburgh-based Spider Systems Ltd's TCP/IP SpiderPort terminal servers, which it will market on its Targon and MX Unix systems: the deal is worth £250,000 a year.

Parc Place Systems, Mountain View, California, says that version 2 of ObjectworksC++, its object-orientated software development environment, now supports the latest X-Windows X11 R4 release. Previously only available for Sun View and Open Windows, ObjectworksC++ under X-Windows for Sun-3 and Sparcstations requires 12Mb RAM and costs \$3,000. Meanwhile, Parc Place's ObjectkitC++ collection of C++ libraries will be out in March, it costs \$500.

Interactive Development Environments Inc, San Francisco, California, says its Software Through Pictures development environment is now available on Data General, Mips Computer Systems and Silicon Graphics workstations - prices go from \$5,000 to \$21,000.

Computer Service Technology Ltd, Leeds, Yorkshire, the 1989 management buyout from Systime, claims it can offer DEC PDP-11 users an escape route to open systems with the release of TransBasic 1.4, which, it says, creates an RSTS/E Basic Plus environment under Unix, allowing Basic Plus applications to be moved over to single-processor Unix boxes with little modification.

Imperial Software Technology, Reading, Berkshire, has released a version of X-Designer, its OSF/Motif-based graphical user interface builder, for IBM's RS/6000: in addition, IST says it has won a \$500,000 contract with an unnamed major US computer manufacturer for a Unix V.4 application development environment based upon its ISTAR integrated project support environment.

Sintrom plc Group sibling, Micro Technology Ltd, Tunbridge Wells, Kent, is offering a package that links Unix systems and personal computers to IBM's SNA mainframe and BiSync environments and X.25 networks. CommLink combines Emulex's DCP-286i co-processor board with System Strategies' Express communications software. Micro Technology says the DCP card can off-load all the communications from the processor, whilst Express provides SNA 3270 emulation under SCO or Interactive Unix, together with gateways to X.25 and BiSync for program-to-program communication. Prices start at £3,000 per-processor.

Unify Corp, Dallas, Texas, has released an interactive, on-line debugger for its Accell/SQL fourth generation language - it ships on Sun Microsystems Inc workstations now, with other releases planned over the next twelve months, it costs \$1,000.

WordPerfect Corp, Orem, Utah, is readying version 5.0 of its word-processing software for NCR Tower 32, AT&T 3B2 and IBM RS/6000 machines for release this month - single-user prices start at \$500, multi-user versions go from \$1,000.

MIPS STOCK UP OVER COMPAQ RUMOURS

As we went to press, the Dow Jones newswire was reporting rumours that MIPS Computer Systems has struck up "some kind of business agreement with Compaq Computer Corp", confirming our own story last week, (UX No 318). MIPS stock rose 26.4% at \$13.75 on Thursday, although Dow Jones says that another reason for the rise could be the company's briefing on the R4000, scheduled for Friday morning, New York time (see front page). The wire quoted Alex Brown analyst Mark Stahlman as expecting Compaq to introduce MIPS-based products in 1992. Brown says he is "encouraged by recent reports that Compaq is close to resolving its entry strategy into the workstation market".

New Jersey-based Xecute Inc has ported its OSF/Motif-based Open Sesame! graphical user interface to Westboro, Massachusetts-based Applix Inc's Asterix document preparation software, (UX No 316): Xecute is to begin distributing the combined package in the US.

Kofax Image Products Inc, Irvine, California, has released a Unix developers kit for its personal computer-based KF-8200 document processor which controls scanning and printing and performs image compression tasks - the Unix kit includes a device driver and C language programming interface and is available for AT&T Unix V.3.2, SCO Xenix and SunOS; it costs \$700.

VenturCom Inc, Cambridge, Massachusetts, has developed an embedded version of its skinny real-time Unix kernel Venix/386, (UX No 267). It says the Unix V.3.2-compatible operating system fits into read-only memory, and is running on California-based Ampro Computer's Little Board/386, claimed to be the world's smallest AT-compatible computer. Little Board measures 5.57" by 8".

Nippon Sun Microsystems has reported that in the two months since the Sparcstation 2 was released in Japan, orders for 3,000 machines have been taken: as a result of these impressive figures, Nippon Sun plans to increase its direct marketing activities and support of the activities of its distributors, including new distributor Matsushita Electric Industrial Co; Sun has set a target of 18,000 SparcStation 2 sales in 1991, and expects total workstation sales to be around 30,000 units, reported the Nikkei Sangyo newspaper.

Omron Corp, builder of the Motorola 88000 RISC-based Luna workstations, has formed a new subsidiary to specialise in the sale of the Luna product: Omron is expecting sales of 6,000 units and revenue from the machine of \$73m in the financial year to March 1991, but feels that it needs to take a more overall approach to the marketing and installation of the workstations, especially to large customers and in fields such as CAD/CAM; the new company is called Luna Workstation Sales Co and is to be headed by a refugee from NCR Japan.

Japan Information Processing Co, a major systems house, has signed a value-added reseller agreement with PanaSequent, the joint venture between Matsushita Electric Industrial Co and Sequent Computer Systems Inc for marketing of Sequent's S series machines into financial institutions; Japan Information already sells Sony Corp and Hitachi Ltd work stations and recently signed up with Apple Japan to add the Macintosh to its offerings.

The legal battles between AT&T Co and NCR Corp are descending to the nit-picking level of squabbles in the nursery: in the latest skirmish, NCR objected to AT&T's proposal to combine the removal of all NCR's directors at an extraordinary general meeting with the election of a new board in a single agenda item, and AT&T responded that the complaint "raised the absurd possibility that all incumbent directors could be removed without being replaced, leaving NCR without a board of directors" - better no board than a board of AT&T's choosing, NCR top brass is no doubt musing.

Unisys Corp has demonstrated an early version of its Open/OLTP on-line transaction processing software, which is built upon an enhanced version of AT&T's Tuxedo monitor.

TransTools SA, Madrid, has developed a relational database management system for Unix, which includes a fourth generation language, forms and reports generator, and an integrated office automation package. It says the likes of Prime, Philips, Hewlett-Packard, Olivetti and Fujitsu are currently working with TransTool 3.0 in the Spanish Unix marketplace. The database runs on AT&T Unix, SCO Xenix and Unix, Hewlett's HP-UX, DEC Ultrix, Interactive Unix, IBM's AIX and MS-DOS.

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13 FEB. 1991

The weekly information newsletter for the UNIX® community worldwide

London, February 11-15 1991

Number 320

CHOTS PROJECT IN DOUBT AS BRITISH TELECOM WITHDRAWS

The long running saga of the Ministry of Defense Corporate Headquarters Office Technology System - CHOTS - project, took a new turn last week when British Telecom, one of the two prime contractors, pulled out, leaving the field open to its competitors, ICL and the Topix consortium. In a terse press release, BT claimed that it had "constantly conflicting commitments for skilled resources." CHOTS, it said, was "a substantial and complex programme", and BT had decided that its commercial interests would be "best served by deploying the required resources on other opportunities." CHOTS was specified as an OSI-based distributed office automation system with high level security, and was estimated to be worth some £300 million, incorporating 12,000 terminals and 3,000 printers when the two finalists were chosen in 1988, (UX No 195). BT's consortium also included Bull, Nixdorf and Secure Information Systems Ltd, while ICL's Topix - Trusted Office Partnership - included Hewlett-Packard, Data Logic, BICC and Coopers and Lybrand. Both were required to implement two prototype systems, which ICL completed last year and BT finished last month. The MOD's much delayed final decision on the overall supplier was due this April. But sources claim that CHOTS, not a priority in budgeting during the Gulf crisis, would be chopped altogether, or might re-emerge in a modified form over the next few years. ICL said it had always expected to win the business "as a mainline computer group with wider Unix expertise" than the BT group. "We look forward to working with the MOD", said a spokesman. But if CHOTS does get the thumbs down, the Topix consortium is apparently already putting in bids for "quite a number" of other secure systems contracts, not just for the defence market.

OSF ASSURES MEMBERS OVER ANTI-TRUST, BUT IBM GETS ITS LAWYERS WORKING

OSF was busy last week contacting its members and denying that it is being investigated by the US government for possible anti-trust violations, (UX No 317), comforting itself with the fact that it hasn't been notified that there's an investigation underway. Although it said it understands "that some ISVs may have been informally contacted," it told its members that "unless OSF is officially notified, we can assume that no official proceeding has been initiated." OSF has been pointing the finger at "a disgruntled ISV" that "in the past tried unsuccessfully to discredit OSF's RFT process" - a reference, presumably, to the meeting of disgruntled ISVs which took place back in March 1990, (UX No 275). Meanwhile, the story has been repeated and corroborated by various publications, including *Computerworld*, *Digital News*, the German *Computerwoche*, and last Thursday in the *New York Times*. Meanwhile, top-flight legal beagles Cravath Swain and Moore, IBM's long-standing counsel of record and its defender through all the long years of anti-trust litigation back in the 1970s, has been employing some of its highest ranking talent recently to scout around and find out if there are any anti-trust suits in the works against OSF. Cravath is reportedly aiming to keep IBM's skirts as clean as possible and wants to fix any problems before they hit the fan. It is said to realise that a suit doesn't necessarily have to be brought against OSF per se, but could be launched against any or all of its members, and is worried that IBM could be a target.

HEWLETT-PACKARD TO BUY UP TO 10% OF INFORMIX CORP

In a surprise move, given its equity investment in Ask Computer Systems Inc, parent of Ingres Corp, Hewlett-Packard Co last week revealed that it has agreed to buy up to 10% of Informix Corp to cement a five-year agreement for joint development, marketing and sales of faster versions of Informix software and Hewlett-Packard hardware, particularly in the fields of software engineering and transaction processing. At UniForum, Informix said it would take a licence to Hewlett-Packard's SoftBench technology to be the basis for its OpenCase/ToolBus, a graphical product integrating Informix OpenCase tools, and it appears that Hewlett has decided to rely largely on Informix for future software engineering tools. Under the investment agreement, Hewlett will buy up to 5% of Informix shares in open market transactions, and Informix can ask it to buy up to another 5% more in new shares.



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DEC PREPARES TO LAUNCH NEW LOW-END COLOUR WORKSTATION

Digital News hears that a new low-end workstation from DEC, the DECstation 4500, will emerge later this month. Using the MIPS R3000-A processor and an SCSI bus, the machine should have an entry-level price under \$5,000 for diskless colour configurations, says the US paper. The model should be a replacement for the DECstation 2100 and 3100 models, and board swaps to use the latest MIPS R4000 64-bit part, (UX No 319), should become available in 1992. According to figures from analysts Workgroup Technologies, published by the paper, DEC will ship only 12,700 DECstation 2100s worldwide this year (7,100 in the US), compared with 59,000 Sparcstation SLCs (37,000 in the US).

BRITISH TELECOM INTRODUCES ISDN-2 FOR SMALL FIRMS

British Telecommunications Plc launched its integrated voice and data digital services for small to medium sized businesses yesterday, offering fast facsimile and electronic mail, immediate call connections and video-conferencing charged at the same rate as phone calls. The services have been available to large companies in main cities that require 30 or more lines since 1988, and are a consequence of Telecom upgrading the public telephone network exchanges from analogue to digital - half of all phone exchanges are now digital. The new service, ISDN-2, is for companies that require fewer than 30 lines. It is currently available over 20,000 64Kbps lines, covering main UK cities. By the end of the year, British Telecom promises that there will be 90,000 ISDN-2 available.

NBI THROWS IN THE TOWEL AFTER FIVE YEARS OF LOSSES, FILES FOR CHAPTER 11

NBI Inc, once a lusty manufacturer of dedicated word processors and latterly an occasional Unix dabbler, has finally given up the unequal struggle to remain solvent on sales of its software alone, and after 21 consecutive quarters of losses, has filed for Chapter 11 bankruptcy protection. The Boulder, Colorado company showed assets of \$32m and liabilities of \$76.1m at the end of last year, and laid off 25% of its field service staff, 73 people last week. Matters were brought to a head by the company's inability to reach agreement with holders of its \$34m of 8.25% convertible subordinated debt due in 2007. NBI reported late last year that it had set provisions of \$5.4m to cover taxes and penalties in its last set of accounts, adding that it expected the tax claim to exceed that sum - and indeed, the Internal Revenue Service is demanding \$30m to cover claims that go back to 1980. President and chief executive Steve Jerritts, who once ran Honeywell in the UK, says unconvincingly that NBI's cash position is "very strong" with about \$72.5m in tax credits - but they are only of any value if the company has some prospect of future profits against which to set them. They would be of value to a company making large unsheltered profits, which suggests that NBI, which says that it will file a reorganisation plan within the next few months, may attempt to sell itself out to a company looking for a tax shelter.

NEW FDDI NETWORK MANAGER FROM FIBERCOM

FiberCom Inc, Roanoke, Virginia, has announced a new network management system, Viewmaster+, for its Fibre Distributed Data Interface-based RingMaster series of fibre optic local area networks. Viewmaster+ has an X-Windows-based graphical user interface, SQL generation features, and presents a graphical picture of networks that support standard network management protocols. Viewmaster+ for Sun Microsystems Inc Sparcstations costs \$15,000 - the database option is an additional \$5,000. FiberCom has also added new features to its RingMaster FDDI 7200 intelligent bridge, including an FDDI controller card for single mode fiber which can support distances of 20Km between FDDI nodes.

QUALIX - THE LATEST RISING STAR IN SOFTWARE DISTRIBUTION

The inadequacy of existing distribution channels to handle Unix applications is bringing a new set of players into the marketplace. The latest entrant is a start up called the Qualix Group of San Mateo, California, chartered to sell Unix-only products. Qualix is carrying established brands like Lotus and dBase, emerging products like Clarity and Asterix, and publishing new applications like Synchronize, a group meetings scheduler from Crosswinds and Common Link, a utility that allows Sparc machines to read DOS and Macintosh diskettes. Co-founder and president Rick Thau, a former vice-president with Micro MRP and an old alumnus of TimeShare, says the only way to move the product is to sell it - and the only way to sell it is to go direct since "there's no pull through." Right now he's ferreting out concentrations of workstations, mostly in engineering and software development enclaves, and adding his OA wares to their primary CASE or CAD/CAM applications. With under a dozen people currently on board, a figure expected to expand to 30 by year's end, he says he's already selling nationwide by phone or by travelling to the site. He claims the terrain is fertile ground, untrod by other peddlers. Qualix, he adds, is not a bootstrap operation. In November it got some \$2m from venture capital firms 3i, AVI and Quest, apparently on the expectation that it could be doing between \$50m and \$100m worth of business within five years.

SEQUENT ASKS ITS EMPLOYEES TO GIVE UP ONE WEEK'S SALARY FOR LENT

Even in the sexy world of low-cost systems for high volume transaction processing, the times are hard and getting harder, and so high-flyer Sequent Computer Systems Inc, of Beaverton, Oregon is having to take measures to reduce its costs in the face of its dwindling business prospects in the immediate future. It has instituted a one-time, company-wide pay reduction programme starting Monday. Under the Lenten fast, employees are being asked to invest five days of their salary in return for double the contribution in stock options that will vest over six months. The move should save \$1.5m to \$2m, and improve Sequent's first quarter figures, which have been affected by weak OEM business, mainly due to troubles at Unisys Corp. Sequent says it is still looking strong at end-user level where sales are up 300%, and expects OEM sales to pick up in time for the second quarter, when Unisys and others will have picked up the recently launched 486-based products, (UX No 318). Sequent UK said it had already had a positive reaction from its staff, with a reasonable number prepared to take up the offer.

SUNRIVER LAUNCHES FIBRE-OPTIC X-STATIONS

SunRiver Corp, Austin, Texas, has launched a range of fiber optic-based X-stations. The Xcel series is designed for use with Intel 80386 and 80486-based Unix systems running SCO Open Desktop and Interactive Systems' X11 X-Windows code. They use SunRiver's 32Mb per-second channel interface and include MS-DOS VGA compatibility. Sold without monitors, the three models include 2Mb RAM, 60MHz graphics processor, serial ports, keyboard, mouse and Xcel server code. The XL-8, which supports a screen resolution of 800x600, costs \$2,000. An XL-10, supporting a resolution of 1024x768, is priced at \$2,300, and the XL-12 comes in at \$3,000, supporting 1280x1024 screen resolutions.

NOKIA AND BULL TALK OF WIDER COOPERATION

Nokia Data and Bull are discussing a widened cooperation, if not a merger, claim Scandinavian sources. The companies have had a distribution agreement in Finland since 1964, where Nokia has been a successful Bull distributor. The agreement has now been extended to cover the Swedish, Danish and Norwegian markets. The companies, which have now established a joint task force, are "looking at opportunities to utilise the complementarities in customers and products and to build upon the strong European roots of both companies", according to an official statement. According to Bull officials, cooperation discussions are taking place at top management levels. Cooperation with Bull would give Nokia greater strength in south European markets, while giving Bull an inroad into Scandinavia and Germany.

IBM TO STRIKE PORTABLE NETWARE DEAL WITH NOVELL FOR AS/400, RS/6000

If IBM's relationship with Microsoft Corp appears somewhat strained following the revelations of Microsoft's change of direction over OS/2 recently (UX No 319), things may not be improved by an expected announcement from IBM at Boston's NetWorld '91 show this week. IBM is set to announce plans to take Portable NetWare from Novell Inc for the AS/400 and RS/6000. The move is official recognition on IBM's part that it must recognise and co-exist with Novell users in the world of local area networks, despite the competing IBM/Microsoft LAN Manager products. Novell took responsibility for the AS/400 port of NetWare, and has been working on it for the last two years. IBM is doing the RS/6000 work itself. And IBM is also expected to add NetWare Loadable Modules to its MVS-based mainframes, allowing them to act as Novell LAN servers.

ICL BOOSTS DRS6000 SERIES WITH MULTI-PROCESSOR LEVEL 65

Targeting large relational database applications, ICL has launched a new model in its DRS6000 Series - the Level 65. The Sparc-based Level 65 is a symmetric multi-processor which ICL says will support around 200 users. The new model is configured with two 33Mhz CPUs, 64Mb main memory, one QIC-150 cartridge magnetic tape and 660Mb formatted discs. It has 16 serial ports, support for up to 19 Gb of SCSI unformatted disc storage and 31 VME bus expansion slots for I/O controllers. Prices start at £150,000 and volume deliveries begin in April. Field upgrades of existing DRS6000 servers to the Level 65 will be available after April. In addition ICL has announced a new version of its SVR4 implementation of Unix - DRS/NX 6000. The new version includes a range of 'Roadmap' features which boost the performance of disc sub-systems giving users improved file-handling facilities. ICL now claims 20% of the UK Unix server market.

...AS SOLBOURNE ADDS MID-RANGE MULTI-PROCESSOR

Solbourne Computer, Longmont, Colorado has extended its line of Sparc-based servers with the Series5E/800i Network Server. The new system is a mid-range server targeted at the multi-user and client/server markets. Configured as a desk-side system, it supports up to four CPUs and has a claimed performance of 114 MIPS, 15.1MFLOPS and 71.6 SPEC-throughput. A two-CPU configuration with 32 Mb memory and 860Mb IPI disk is priced at \$84,900, with a performance of 60 MIPS. But both Solbourne and ICL could face increased competition from Sun Microsystems this Summer, when Sun is expected to launch servers based on the Texas Instruments Viking chip (UX No 316). Early reports hint at a 60 MIPS uniprocessor and 120 MIPS dual processor model in the pipeline.

FERRANTI EXTENDS ITS OEM AGREEMENT WITH MODCOMP

The ten year old agreement between Modular Computer Systems Inc (Modcomp), Ft Lauderdale, Florida, and Ferranti International Controls Corp (FICC), Sugar Land, Texas, has been extended for a further three years and as a result the two companies have announced a new system for the energy management market - the Vanguard Plus system. The FICC developed system is a supervisory control and data acquisition and energy management system which FICC says provides better performance than the previous Vanguard product for the electric utilities market. Vanguard Plus is based on Modcomp's Unix-based Tri-D models 9230, 9250 and Classic III/95 real-time systems.

MICROWARE ADDS TO REAL-TIME OS/9

The real-time operating system specialist, Microware Systems (UK) Ltd of Fareham, Hampshire, has announced enhancements to its Unixlike operating system - OS/9. Microware says that these enhancements will benefit systems designers. The company has developed a ROM-based debugger, ROMbug, which can be used to debug interrupt service routines. Support is provided for the 68332 32bit microcontroller BCC evaluation system. The Random Block File (RBF) manager - a module supporting random access, block oriented mass storage devices, with the ability to handle any number of these system types simultaneously and maintain the logical and physical structure of a file - can now support variable sector sizes of any integral binary power ranging from 256 to 32768, which increases disk I/O throughput. The RBF also supports write-through disk caching which again helps disk I/O throughput.

RUSSIANS JOIN UNIX INTERNATIONAL

Flipping through an updated list of Unix International members, we couldn't help but notice two Russian organisations: SPEKTR, a Leningrad-based consortium of 10 apparently independent capitalistically oriented hardware and software companies, whose membership in UI was sponsored by NCR, and the State Institute of Allied Chemistry (GIP), brought into UI by UI itself. Under a little used provision in UI's charter, membership is free to sponsored concerns.

...IBM AND ARIX WIN US COURTS INTEGRATION PACT

Struggling Arix Corp, which last week reported losses of \$4m on sales that crashed 75%, has something to cheer about at last - and something that should help to keep it out of bankruptcy court, somewhat wry since the customer is the US Courts - Circuit, District and Bankruptcy. Prime contractor is IBM's Federal Sector Division in Manassas, and the contract is worth an initial \$25m over five years but could grow to \$233m over nine years if all options are taken up. The requirement is for a US-wide data network with easy-to-use menu-driven user interface for exchange of files and electronic mail. The network may grow to some 2,000 small and 150 large local nets, and electronic mail nodes interconnected via the FTS2000 government net. IBM will supply PS/2s running AIX, while Arix will supply tightly-coupled multi-processor System90 machines at 14 locations, serving as electronic mail gateways and network management hubs. The other partner on the contract is Computer Sciences Corp's Network Systems Division. Over the last few years, Arix has suffered the twin blows of the ending of its giant OEM deal with Unisys Corp, plus the long delays in usable 68040 parts from Motorola Inc.

FPS COMPUTING OFFERS UNIFIED COMPILER TECHNOLOGY ON 500EA

Beaverton, Oregon-based FPS Computing - the legal name is still Floating Point Systems Inc - has introduced a Unified Application Compiler Technology, which it claims will enable high-end scientific and engineering applications to use all the features of the Model 500 Integrated Heterogeneous Supercomputer, which can be configured to include scalar, vector, and parallel matrix processor technologies to deliver a peak performance of 6.7 GFLOPS. The Compiler combines automatic optimisation techniques from Kuck & Associates Inc with FPS Computing's own code generator, and "the industry's first data locality optimisation" for maximising use of fast register and cache memories by enhancing data re-use, reducing the need to access slower main memory. The Kuck & Associates technology automatically directs sections of Fortran or C applications code to the most appropriate combination of processors on a Model 500EA - processors can include a 64-bit ECL RISC scalar processor, an ECL Sparc scalar processor, VectorPlus co-processors, and matrix co-processors for applications such as molecular modelling, geophysics, design engineering, signal and intelligence processing. The Sparc code generator in the Unified Application Compiler Technology is compatible with the Sparc Applications Binary Interface definition developed by Sparc International so that all Sparcware applications can run on the Sparc processor. The compiler also provides an integrated development environment for parallel applications. Application developers can create new codes for, or transfer existing codes to, an FPS Computing without manual coding or special purpose efforts, the company claims, and the compiler makes the Model 500EA fully compatible with Fortran applications developed for Cray Research Inc supercomputers and DEC VAX systems. The Kuck & Associates technology accepts the syntax of both Cray and DEC compilers, in addition to ANSI Fortran-77. The environment supports graphical user interfaces such as X-Window, Open Look, and OSF/Motif, and will be available in the second quarter of 1991. No indication of prices was given.

DATAPOINT ADDS 80486 MODELS AND LICENSES SYSTEM V.4

Datapoint Corp has introduced 33MHz 80486 models to its line of multi-processor servers and has licensed Unix System V.4 to run on them. The first version will be a single-CPU implementation that matches the current AT&T offering and Datapoint will add multi-processor support when it becomes available. The 7860 and 7960 servers will support up to two and up to six 80486 CPUs respectively. The servers support IBM SNA via X25 QLLC or SDLC; TCP/IP via X25 or Ethernet; Open Systems Interconnection with X400 via X25; Datapoint VCF via X25; asynchronous communications services with terminal emulators; and ARCnet-to-ARCnet connections with the ARClink internet-work bridge via HDLC leased or dial-up lines. The company did not give any prices.

ADVANCED MICRO TO CUT 200

Following the 200 that went last quarter, Advanced Micro Devices Inc will be laying off another 200 employees over the next few weeks and will close its 1971 vintage 3" and 4" wafer bipolar fabrication plant in Sunnyvale by the year-end.

SANYO ICON USES 88000 TO BUILD MONSTER 134Gb DISK SERVER

Sanyo Icon Co, now based in Irvine, California has put the Motorola Inc 88000 RISC chip set to work to create a line of giant Intelligent Disk Servers. The LANser 1980 supports up to 28 SCSI disk drives on a single local area network disk channel for disk storage capacity of up to 134.4Gb per file server and is accompanied by LANser 1580 and 1880 models. As well as the master Disk Cache Processor, built using the 88100 with two 88200s and rated at 17 MIPS, it supports up to four slave 20MHz Motorola 68020s, each caching up to seven SCSI drives. With expansion cabinets, the 1980 provides up to 67.2Gb storage on 56 drives; the 1880, 33.6Gb; and the 1580, 8.4Gb, and two 1980s can be combined on a single file server to get the full 134Gb. The 88000 has up to 128Mb cache and each 68020 has 2Mb. The processor array is run by the LANser/OS multitasking operating system; the RISC processor allocates disk requests and can service the incoming disk requests from cache to provide effective disk access as fast as 0.1mS. LANser/OS also includes an intelligent formatter so that new SCSI devices can be used as they come along. The new RISC-based disk servers will continue to support multiple file servers from a single system through the company's Shared Memory Interface For Local Environments so that the 1980 IDS can support fast disk services for up to eight separate file or database servers. The company's existing LANser 1500, 1800 and 1900 models can be upgraded to the new RISC-based systems, which support all features of NetWare 386, including disk mirroring and disk duplexing. OS/2 1.21, LAN Manager and IBM LAN Server support is planned for later this year and the LANsers can be used with stand-alone personal computers. With all disk processors, memory and disks external to the file server, if a failure occurs in the personal computer running the file server operating system, Shared Memory Interface cables can be attached to another node configured similarly to the file server which could then be booted as the file server. The company gave no indication of prices for LANser.

DELL ADDS NEW DESKTOPS, CUTS PRICES

Alongside its entry into the notebook computer market, Dell Computer Corp has introduced new 80386 and 80486 desktop systems, the 80386-based low-profile, small footprint 325P, 333P and 33MHz 80486-based 433P, each measuring 15.1" by 15.6" by 4". The 325P is \$2,500 with 1Mb and 40Mb disk, the 325P is \$2,900 in the same configuration; the 433P is \$5,000 with 2Mb and 100Mb disk. All include floppy and VGA Color Plus monitor. The 80386 models can be field-upgraded to 33MHz 80486 at \$2,400, and an optional 32Kb cache is \$300. The company also announced three SCSI hard disk drives and Adaptec's 1542-B host bus adaptor for all its desktop systems except the 210 and 316SX. The 200Mb 3.5" disk is \$900; a half-height 330Mb 5.25" drive is \$1,500, a full-height 650Mb 5.25" disk is \$2,500, and the 1542-B HBA is \$300. And Dell cut prices across its full existing line by up to \$900. The 316SX with 1Mb and 40Mb disk, floppy and mono monitor is off 5.4% at \$1,750. The 33MHz 80486-based 433TE with 8Mb, 330MB disk, floppy and VGA Color Plus is off 8% at \$10,300.

GENERAL MOTORS CHOOSES IBM AND DEC FOR 4 YEAR OPEN SYSTEMS CONTRACT

IBM and DEC are the two suppliers chosen by General Motors Corp for a giant vehicle design and engineering system called C4, reports Business Week - which says that the two beat Hewlett-Packard and Sun Microsystems to the four-year open systems contract, the price of which is still under final negotiation. IBM and DEC will work independently, but their machines will collaborate, and must also connect up to GM's existing office and manufacturing systems.

**NEXGEN ALMOST READY
WITH "80486" CHIPSET -
BUT IS IT TOO LATE?**

NexGen Microsystems Inc, the San Jose, California company backed by Compaq Computer Corp and Ing C Olivetti & Co SpA to develop a chip set that emulates the Intel 80386 and 80486 architecture but delivers much more power, (UX No 221), is reportedly only a few months away from bringing out its first products, an eight-chip set dubbed the F86 and a 64-bit bus for use with it. But the company may have a very narrow window of opportunity to exploit the development, because the set is claimed to offer only twice the performance of the 80486 - and 50% more than the RISC in the Sun Microsystems Inc Sparcstation 2 - but Intel Corp itself is only a few months away from launching the 80586, and that is expected to deliver four times the power of the 80486 (UX No 319). NexGen expects to have chip sets ready by mid-year; Intel is talking of computers using the 80586 appearing next year. The 64-bit NexBus is claimed to offer peak throughput of 267Mbytes per second and sustained performance of 150Mbps. Edgcore Technology tried to pull a similar trick with a chip set to emulate the Motorola Inc 68020, but Arix Corp, which now owns the technology, has shown little interest in developing it.

**SMT-GOUPIL TAKES CONTROL
OF METROLOGIE THIRD PARTY
MAINTENANCE BUSINESS**

SMT-Goupil SA has paid the equivalent of \$12m for a 73.6% stake in Metroservice SA, hitherto the French third party maintenance subsidiary of Metrologie International SA. Metrologie says it sold because its strategy is to major on hardware and software distribution and systems integration across Europe.

**WANG PREPARES NEW TOP-END
VS MODEL FOR LATE THIS YEAR**

Wang Laboratories Inc continues to develop the VS line upwards and is preparing a top-end uniprocessor only successor to the VS 10000 for launch later this year, to deliver up to 18 MIPS against 13 MIPS for the 10000, Electronic News reports.

**ORACLE PUTS ITS SOFTWARE
ENGINEERING TOOLS UP UNDER MVS**

Oracle UK has finally implemented its computer-aided software engineering tools to the IBM environment with the notable exception of an AS/400 version. Oracle says this is partly because it doesn't have a database for the AS/400, and that's largely because IBM did not make the C compiler available to third-party developers when the box was first launched. However, Oracle is unwilling to say when its database will be on the AS/400, which suggests there are technical obstacles, while some sources suggest that the C compiler itself is too slow. As regards the new products, Case*Dictionary V4.1.6, a repository providing access and version control as well as utilities for default database design, is now available for MVS, VM, the RS/6000, MS-DOS and OS/2. There will be support for AIX on the PS/2 and RT at the end of the month. Case*Designer, available on the RS/6000 and under OS/2, is a graphical workbench linked to the repository providing multi-window, multi-tasking graphical modelling and manipulation of repository data. Case*Generator is an applications generator driven from the repository information to provide portable applications, and runs on all the systems with the PS/2 AIX and RT versions also coming at the end of the month. Oracle plans to release Case*Bridge and Case*Connect sometime in 1992. The first facilitates batch transfer between the Dictionary and the IBM Repository Manager, and the other provides an on-line interface to Repository Manager. There's also speculation of a third offering, Case*Project, for overall management of an entire project, which sounds suspiciously AD/Cycle-ish.

**IBM PUTS NUMERICAL CONTROL
ON RS/6000, ADDS X FOR DOS**

Second line AIX Unix products featured heavily in IBM's Tuesday announcement last week and the company also added a couple of models to its InfoWindow line of display terminals. IBM took AIX Unix closer to the factory floor with the introduction of AIX APT Workstation/6000 for the RS/6000 and APT Workstation/2 for the PS/2 under OS/2, two programs designed to assist users in creating part programs for numerically controlled machine tools. Out on March 29, the RS/6000 version is \$10,000; the OS/2 version is out on February 22 at the same price. The Numerical Control Post Processor Generator Execution Library has also been enhanced to provide RS/6000 support: the new version is out February 22 at \$3,000. A new version 2.1 of the X-Window System for MS-DOS supports up to 16Mb memory and supports MS-DOS 4.0; it enables users to run X client applications on machines with an 80286 processor up under MS-DOS 3.1 up; it's \$400 from the end of March. AIX Access for MS-DOS Users Version 2.1 extends the user's MS-DOS file system into the AIX file system and provides access to AIX printers and is \$500. IBM also added AIX/370 2.1, but it still runs only under VM, and just adds support for Multiple Byte Character Sets and support for top-end 3390 disk drives.

**CRAY SIGNS CANON SALES
AS EXTRA JAPANESE CHANNEL**

Cray Research Inc has enhanced its marketing muscle in Japan by signing Canon Sales Co to market the mid-range Cray Y-MP2E supercomputer in Japan, which costs some \$3.4m. Cray will continue to market the box itself in Japan as well; it has so far taken three orders for it.

**INGRES INTELLIGENT RDBMS
NOW OUT FOR DEC, HP AND IBM**

Ask Computer Systems Inc's Ingres Products Division, based in Alameda, California, has announced immediate availability of the Ingres Intelligent relational database management system Release 6.3 for the DEC Ultrix, HP-UX and IBM AIX environments. Ingres' Intelligent Database for Pyramid Technology OsX and Data General AViiON will be available later this quarter. The Ingres product includes a database manager and distributed SQL database management system, application development tools, decision support tools, networking products, and data management extensions such as input-output reduction techniques and on-line back-up and support for two-phase commit. Ingres Knowledge Management and Object Management product extensions are offered separately, pricing for the Ingres Intelligent Database ranges from \$4,000 to \$450,000. Both the Knowledge and Object Management extensions cost a percentage of the applicable licence.

**MOTOROLA ADDS 32Mb 88000-BASED
SINGLE BOARD COMPUTER**

Motorola Inc's Computer Group based in Tempe, Arizona has introduced a single board computer, the MVME187, based on the M88000 RISC which consolidates on a single board drawing, 20W features that previously required five boards - achieved by using new applications-specific circuits. The MVME187 is rated at 32 MIPS on the Dhrystone 2.1 benchmark using the 25MHz 88000, and includes VME D64-compatible interface transferring at up to 40Mbytes per-second, and up to 32Mb RAM, 8Kb of non-volatile RAM, 128Kb static and 512Kb of ROM, EPROM and EEPROM. It has an SCS Interface, Ethernet and X25 interfaces, one parallel and four serial ports, and fits a single-width slot in a VME 6U form factor enclosure. It samples in May with volume in October. No price given.

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Locus Computing Corp Ltd, Aylesbury, Buckinghamshire, has signed up Dutch firm Foundation Software BV, to distribute its PC-Xsight and PC-Interface Unix/MS-DOS integration tools in Holland.

Metrologie SA's UK Unix division, Amarante, High Wycombe, Buckinghamshire, has signed up with Chase Research plc to distribute its range of input-output boards.

Level V Distribution Ltd, Matlock, Derbyshire, has been appointed as an Open Desktop distributor by the Santa Cruz Operation.

Hertford, UK firm Real World Graphics Ltd's Super Reality three-dimensional imaging systems, (UX No 269), which use arrays of 40MHz Intel 80860 Risc processors, are now available.

Silicon Graphics says it has won contracts totalling \$2.4m in the People's Republic of China. The first is with the China Machinery Industry Computer & Technology Corp. Funded by the World Bank for the Karamay Oilfield, CMICT Corp will use Silicon Graphics' Iris 4D/220 high-end workstations running DISCO seismic processing software from Cogniseis Systems Development Inc, Houston, Texas. The second is with Hong Kong-based systems integrator Geotech Ltd, which will supply Iris 4D/25 Turbo workstations and Stratamodel three-dimensional modelling software from Stratamodel Inc, Houston, Texas, to the China National Petroleum Company's oil exploration sites at Da Qing, Shen Li and Liao He. The last deal is with the Department of Construction Coordination, Ministry of Machinery & Electronics Industries, which will use Iris 4D/210 GTX workstations to design manufacturing plants using Sonata software from T2 Ltd, Eagle from CARBS - both UK firms - and Pro-Engineer from Parametric Technology Corp in the US.

SBT Corp of Sausalito, California has put its Database Accounting Library on Unix under dBase IV, following the release of dBase IV for Sun Sparcstations.

OpenForum Europe 1992, the proposed joint show between EurOpen (previously the EUUG) and the US UniForum Unix association, is now to take place in Utrecht, the Netherlands, during the week beginning 25th November 1992; the show was originally to be held in Amsterdam a month earlier (UX No 306).

Hewlett-Packard is at last able to ship its Motorola 68040-based workstations, and will offer upgrades to customers of its 68030-based range: the company had hoped to have the machines available last Summer, but Motorola only began shipping 68040s in volume at the end of last year.

Uniplex, Unix office automation specialist of Hemel Hempstead, has added to its DOS catalogue with Uniplex DOS Version 7, which brings the DOS offerings up to the level of the Unix implementation.

Microsoft Corp's OS/2 3.0 "New Technology" effort (UX No 319), which will involve a completely new kernel, is being led by David Cutler, the creator of DEC's VMS operating system - work has been progressing for two years.

Unix System Labs president Larry Dooling says he can't say who's buying into USL or how much of it they're buying until he gets his lawyers 20% of the subsidiary, which it has valued en toto at \$325m (UX No 318), and is believed to be at the contract-signing stage.

Ing C Olivetti & Co SpA says that while it will be in the black when it reports results in April, profits will be sharply down because of redundancy costs: sales are expected to be about flat with the \$8,100m Olivetti did in 1989.

Sony Microsystems Co has added a new server to its News RISC workstation series. The 3870, rated at 25 MIPS and 3.4 MFLOPS, uses a 25MHz MIPS Computer Systems R3000 as CPU, and a Motorola 68030 as input-output processor. With 64Mb, 1.3Gb disk and Unix System V.4, prices start at \$35,000; volume ships begin in May.

Fort Lauderdale, Florida-based Encore Computer Corp has now completed the rescue transaction under which Nippon Mining Co's Gould Inc agreed to exchange some of Encore's debt to it with \$50m of new convertible preferred shares and \$10m of new redeemable preferred shares; the transaction cuts Encore's debt service burden by about 40%, \$6.7m; the new convertibles are exercisable at \$3.25 per share; Gould also granted Encore a \$25m revolving credit facility at favourable rate.

Later this month, Language Processors Inc of Framingham, Massachusetts is expected to reveal the fruits of a commission from IBM, to develop a PL/I compiler for the RS/6000 Unix machine - it is to be marketed by Language Processors itself rather than by IBM, which markets LPI's Fortran/400 for the AS/400.

Sun Microsystems Federal Inc has won a multi-year contract to supply the US Air Force with workstations and related products under the \$48m four-year Air Force Computer Acquisition Center Project 308 contract: Sun will supply Sparc-based work stations, including the new Sparcstation 2, and servers to air force locations worldwide, including Tempested workstations and a secure implementation of the SunOS Unix.

Radius Inc says it is developing a central processing unit acceleration technology for Apple Macintosh II computers and that a product based on the technology will be announced later this quarter; the Radius 68040 is designed to be transparent to Mac software applications and the company claims that it will significantly increase performance of 68030 and 68020-based Mac IIs.

MIPS Computer Systems Inc, which lost \$546,000 on sales of \$43.1m in the last quarter of 1990, says it is cautious about the outlook for the first half of this year because of pressure on gross margins and the overall economic picture: gross margins were hit by costs associated with the RC6280 delay, and a decline in licence royalties compared with the third quarter.

Amdahl Corp warns that it expects lower earnings per share than in 1990 in each of the four quarters of 1991, but sees much higher earnings from 1992 on; in 1990, research and development took 14% of sales; it has been as high as 20%.

Ultimate Corp expects to report a "strong return to profitability for its fiscal third quarter to January 31" on sales in the region of \$47m: it lost \$1.7m on sales of \$50.7m in its third fiscal quarter last year.

Sun Microsystems Inc reports that in the UK, Barclays de Zoete Wedd Investment Management and the Securities & Investments Board have each ordered Sun Sparc systems: the investment manager will use a Sparcserver 470 to run a decision support system built with the Sybase relational database, consolidating data from an Amdahl mainframe, a DEC VAX and an IBM AS/400 and supporting about 120 personal computers via Ethernet running PC-NFS file sharing system; the Securities & Investments Board will use a Sparcserver 470 to re-develop its central register inquiry system and other services, which currently run on a time-shared bureau system.

The Osinet Corp affiliate of the Corporation For Open Systems reports that IBM and Unisys Corp are the first to pass the test on their Open Systems Interconnection file transfer products - AIX OSI Messaging and Filing/6000 for RS/6000, OSI FTAM for Unisys 2200 mainframes - and have registered them in Osinet's Test & Registration database.

AT&T Co's AT&T Computer Systems reports that it has won a contract to provide a "multi-million dollar" central reservation system for Euro Disneyland SCA, which is currently building its theme park near Paris: the reservation system will run on the AT&T System 7000, the proprietary RISC machine that AT&T buys OEM from Pyramid Technology Corp.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

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27 FEB. 1991

The weekly information newsletter for the UNIX® community worldwide

London, February 25-March 1 1991

Number 322

US REPORT SAYS IBM IS "READYING A SUB-\$5,000 RS/5000 UNIX WORKSTATION" ...

IBM has decided to mix it in the gutter with Sun Microsystems Inc and is said to be working on an RS/5000 Unix workstation that can be sold for from under \$5,000 to \$35,000 at the top, **Computer Reseller News** reports. The paper quotes Phil Hester, IBM's director of advanced workstation engineering, saying that the company plans to shrink the seven custom VLSI chips spread over multiple boards in the RS/6000 down to a single planar board for use in the RS/5000. The new small-footprint Micro Channel workstations will offer scaled-down features in a compact design, but will retain application binary interface compatibility with RS/6000 line and run existing applications. The RS/5000 is being designed to compete with the Sparcstation SLC as an office workstation, and will have less capacity and more limited graphics than the RS/6000. The RS/5000s will use a higher-integration version of the chip set in the RS/6000 and will incorporate the Micro Channel Level II bus from its big brother. A modular version of AIX Unix will be offered with the new machine so that users can take only the modules they need and don't fill the limited memory and disk up with unwanted operating system code. IBM is said to have targeted a summer 1991 launch for the RS/5000 but observers expect the same kind of delays that beset the RS/6000, and that it may not start shipping until January next year. Prices being talked about for the RS/5000 will make the high-end PS/2 look very overpriced.

..."FALSE AND MISLEADING" SAYS IBM...

But following the paper's revelation, IBM leaped in to characterise it as "false and misleading to customers" - but when you sort through IBM's fire-breathing, you find the only thing it is actually saying is wrong is the name. We always thought it sounded a bit odd that IBM would want to call a low-end RS/6000 the "RS/5000" and it seems to be just name that IBM is rebutting, so we can assume that the other details in the story are as correct as anything can be months before a new product is released to the market.

...BUT MORE DETAILS EXPECTED THIS WEEK

However IBM's rebuttal really got under the skin of **Computer Reseller News**, which leaped onto the wires to say it stands by its story, intends to publish additional detailed information on the machine this week. It suggests that RS/5000 is being regarded as a business code name, since final naming of the new product has not yet been established. The paper says that information for the story came from a number of sources and that - contrary to an IBM assertion, IBM and its external public relations agency were contacted in preparation of the story.

USL's SYSTEM V PRINCIPAL PUBLISHER MOVE STIRS TROUBLE

Unix Systems Labs may have put its foot in it when it declared Interactive Systems "a principal publisher" of SVR4/386486 last month at UniForum (UX No 318). Looking left out in the cold, Microport, Esix and UHC, which also publish SVR4 for Intel machines, immediately started complaining to USL and Unix International about the favoritism inherent in the Interactive designation and the damage done to their respective corporate images. In addition, Interactive's appointment, understood by some to be "the principal publisher," has, say sources, delayed porting work to SVR4 by major ISVs such as WordPerfect and Lotus, among others, while they wait for Interactive to deliver the "definitive" version of the operating system. Esix, however, says the notion of an "official version" is nonsense and that all four companies have exactly the same code and are now only fixing bugs and adding device drivers. The smaller publishers are concerned that any porting delays by ISVs, even temporary ones such as Lotus', slow down operating system sales. USL "shot itself in the foot" by helping create these delays with the Interactive gambit, one claimed. Meanwhile, those who attended last week's UI Members Meeting in Arizona were unimpressed by the results of UI's ISV programme. UI reportedly acknowledged that it had only 120 software companies actually committed to porting to SVR4, even though it had 376 enrolled in the programme.

HP'S VUE TO GO ONTO SUNS

Hewlett-Packard Co is invading the enemy territory with a freelance contribution to the Open Software Foundation campaign in the battle between Open Look and Motif for the hearts and minds of Unix users fancying graphical user interfaces. It has signed Science Applications International Corp to convert, distribute and support the Motif-based HP Visual User Environment on the Sparcstation machines built by the onlie begetter of the Open Look arch-rival to Motif, Sun Microsystems Inc. Hewlett says that the Environment will support Open Look as well as Motif applications, and traditional Unix applications without modification. The Sun machines will be the first non-Hewlett-Packard boxes on which the Environment has been made available: it is a component of the company's NewWave Computing strategy and the X-Windows- and Motif-based product is claimed to be the only user environment that offers multiple workspaces, a front panel containing frequently-used applications, full customisation and a system-wide Help facility. Hewlett already offers its OpenView network-management server software; SoftBench software engineering integration framework; and TaskBroker network optimiser on Sun machines. The Environment for Sun will be \$550 this summer.

STRUGGLING GIPSI PINS HOPES ON NEW BACKER

Paris-based X-terminal, and would-be Sparc workstation-builder, Gipsi SA, was ducking for cover last week as sources close to the company were saying that it had gone bankrupt. Although these reports appear to have been premature, "bankrupt? Not yet," replied one senior Gipsi official, Gipsi president Jean-Francoise Abramatique admitted that the firm has been in financial difficulty following the collapse of talks with an investment partner at the end of last year. "We got in to a hole in January and February, and were having difficulty trying to raise capital," he said. Talks at the end of last week threw up a new backer according to Abramatique, and an announcement is expected in mid-March. The X-terminal marketplace, now packed with players, is widely thought to be due for some kind of shakeout, and the relatively young Gipsi, with a 60-strong staff, is undoubtedly feeling the pinch. Its efforts to bring a Sparc workstation to market, jointly developed with several European partners and part-funded by the European Commission's Esprit programme, (UX Nos 315, 317), is one of the ways in which Gipsi is fighting for its ground, though the project still lacks a major manufacturing backer.

"HIGH-FLYING IDEAS, LACK OF CAPITAL"

The first of two reports from Mark John at Berlin's Unix Forum

The second Berlin Unix Forum, which took place over two days in the city's International Congress Centre, was being touted as the event that could confirm the existence of a truly pan-German Unix market. It was not, firstly because the atrocious weather scared away many potential visitors from the East, secondly because, as consensus at the Forum had it, such a market cannot exist until the East German information technology sector is privatised. A new enabling law is expected soon that will speed this process along, but in the meantime there is growing scepticism that deregulation can be expected in anything like the time-frame hoped for.

In his "Power to the Integrator" speech on the first day, iXOS Software GmbH's Hans Strack-Zimmerman hit the nail on the head when he described the German market for open systems as being typified by "high-flying ideas, and lack of capital". For an open systems market to develop, the systems integration sector has to grow in the same way that it did in France and the UK. This, he said, has not happened in Germany. First because of "user pride," where data processing departments want to retain full control on large projects. Second, because manufacturers like Siemens have resisted this kind of development, fearful that their influence would be undermined; and third, because despite the absence of any real venture capital, banks have not come forward to invest in this sector.

1991 - toughest year so far for the East

1991 will be a tough year, probably the toughest so far, for the Unix Entwickler und Anwendergemeinschaft, EAG, (Unix Developer and User Association). Formed in 1987 as a platform for the growing numbers of Unix users in the former German Democratic Republic, EAG currently has around 400 members. It is resigned to the fact that this figure will drop significantly as some of the users and developers it serves go out of business faster than new companies are created. EAG's Gottfried Pescheck blames the government for being too slow in pushing through privatisation. Asked about the prospects for progress in 1991, he confessed he remained "sceptical" that the state has the commitment to overcome those lobby groups within the government that are opposed to change. It is a distinct possibility that EAG may not even be around next year to offer its Xnet information network, monthly newsletter and Unix seminars. However one glimmer of hope is that EAG has finally patched up its ideological and political differences with the East German division of the German Unix User Group that was formed last year to serve the Eastern Lander. EAG's Margit Bohme says, "we don't want to be in competition with the GUUG-East. We need to work together".

A market for small-scale Unix systems would not have happened in East Germany without Elektro-Apparate-Werke GmbH, the largest computer company in East Berlin, with 250 staff. EAW pioneered this market sector with its System 3-based, 16-bit P-800 machine that was built around the Z800 processor. The expensive P-800 was withdrawn, or rather forced out of the market last year as customers switched to cheaper Groupe Bull machines, and clones. State owned EAW's ambition is to become a proper systems house in the Western tradition, and in order to do this it has gone back to its roots and teamed up with AEG - before the second world war, EAW was the East Berlin division of AEG.

It now offers EAG ModComp GmbH's 32-bit real-time Tri-D MC 97XX VME-based computers the Real/IX real-time Unix operating system. From AEG Olympia it takes 80286, 80386 and 80486-based personal computers with SCO Unix V/386 3.2 and SCO Xenix V/386 2.3, and it is also trying to get itself established as a systems integrator, offering turn-key and customised systems, project management and training. Ulrich Oefler, manager of EAW's Computertechnik division says that EAW is ready to talk to any Western firm as a potential partner. "To survive, we need to increase our turnover dramatically, and this we cannot do from the old DDR alone. Other Eastern markets will remain a problem for some time, and so we are concentrating on the West German market." Accordingly, he appears to relish the prospect of being bought up by a large Western firm - European, US or Japanese, he doesn't mind - as long as EAW is allowed to get on with its business, preferably with a nice cash injection. On the whole, Oefler is pessimistic about the chances for Eastern firms in 1991 - "we haven't reached the bottom point yet, and this will last longer than most people expect."

Large contracts up for grabs in Poland

IDC's Wilfried Kohler-Frost examined the potential of the various Eastern economies for the development of an open systems market following relaxations in the CoCom list. East Germany, he claimed, will experience a growth rate of 44% a year in open systems procurement over the next three years. He characterised Poland as "the market for multi-user systems", with large contracts up for grabs in the financial and transport sectors. In Czechoslovakia, Kohler-Frost believes the "fundamentals had been laid" following a reformation of distribution channels in 1989 - local firms such as ZPA and ZVT were eager to co-operate on open systems projects - and "the Western value-added approach should succeed here." Without elaborating, he earmarked Hungary as the "architypal Unix market," claiming that here is to be found the "most active and mature personal computer market in the East." Yugoslavia has seen "strong Western penetration" and in the Soviet Union he sees "revolutionary potential". Kohler-Frost promised more details in the "Unix in East Europe" report, available from IDC around August.

1991 will be the "year of internationalisation" for the open systems integrator Garmhausen & Partner, Bonn. It has already opened up two East German offices in Dresden and Halle and does around 6m DM of its 33m DM a-year turnover in the East. There it has formed partnerships with Robotron and Texas Instruments' East German subsidiary, and is currently working on a large project with the Bundespost. It is set to increase its payroll by 30 to 160 this year, and has its sights set first of all on the Netherlands and Austria. Garmhausen's Charlotte Steiner says that talks with SCO and Informix are in an advanced stage for the Dutch market, and that Garmhausen is ready to set up an office there and has already started talking to potential resellers.

ALLIANT BOOSTS TOP-END, INTROS LOW-END SYSTEMS

Alliant Computer Corp has introduced enhancements to its high end FX/2800 supercomputer line, and at the same time launched a new entry-level model, the FX/800. Alliant, which uses the Intel i860 RISC processor, has boosted the input/output throughput, memory capacity and networking capabilities of the FX/2800 to make it more attractive to users of I/O and data intensive applications such as seismic analysis, image and signal processing, computational fluid dynamics, and visualisation. The system, which supports from eight to 28 i860s, can also be used as a file server for networked workstations. The improvements include multiple I/O channels, each with a peak bandwidth of 100 megabytes per second, a design based on the ANSI X3T9.3 High Performance Parallel Interface (HIPPI) standard. This allows for high performance I/O connection between supercomputers, high speed networks, disk arrays, frame buffers and switching devices. Up to five pairs of I/O HIPPI channels are now supported on the FX/2800. Alliant is working to interface its HIPPI device with others from Maximum Strategy Inc, Network Systems Corp and Ultra Network Technologies Inc. And Alliant has increased the main memory capacity from 1Gb to 4Gb by using 4 Mbit DRAM technology, which it claims beats the current 2Gb limit of competitive machines from Convex, Cray and DEC. Other enhancements include the use of faster IPI2 disk drives and software interface support for multiple large scale disk arrays of up to 500Gb, FDDI support and systems resource accounting software. HIPPI and FDDI are not available until the autumn. The new FX/800, available immediately, is intended for distributed installations with satellite machines clustered around a central FX/2800. Rated at 320 MFLOPS peak, 121 MFLOPS (Linpack 1000) and 328 VAX MIPS, the FX/800 supports from two to eight processors, up to 4Gb memory and is priced from \$189,000 to \$600,000.

ONLY 4.1% OF DEC MACHINES IN THE UK RUN UNIX, SAYS REPORT

OTR-Peddar - the market research group formed by the merger of the OTR Group with Peddar Associates in January - has published a new survey on the state of the Unix market in the UK. According to the company's latest report on "Operating System Trends", Unix was used on 21% of all UK machines in 1990, a figure which rose from 16.9% in mid-1989, and should stand at 25.4% in mid-1991. The Peddar report took account of UK installed systems costing £15,000 or more. But, says the report, although Unix is now the preferred option for departmental systems, the entrenched positions of DEC's VMS and IBM's MVS and VM are still a major obstacle to the penetration of Unix in the large computer arena. In mid-1990, only 4.1% of DEC installations were Unix-based, compared to 15.9% of IBM kit, 17.4% of HP and ICL, and 58.1% of Unisys hardware. Peddar surveyed some 13,000 systems in the UK for the report, which costs £1,750. Call Peddar on 081 940 4300 or 071 402 3574 for details.

DEC TO BRING VAX 9000 DOWN TO UNDER \$1m WITH MODEL 110

DEC says it plans to expand the catchment base for its top-end VAX 9000 family with a Model 100 that will cost from \$920,000, \$997,000 with the vector processor fitted, compared with the \$1.3m base price for the present line-propper, the VAX 9000 Model 210. The new model will have the same raw processing performance, but will be delivered with less memory, less bundled software and fewer services, the company said.

MICROPORT OFFERS "GO-FASTER" UNIX FROM PROLOGIC

Microport Inc, Scotts Valley, California, has begun shipping what it says is a high-performance version of Unix System V.4. System V/4.0 is claimed to offer performance advantages of up to 50% over vanilla Unix V.4, when running multi-user applications. It was produced in conjunction with ProLogic Inc, Somerset, New Jersey - formed by a group of developers from AT&T's original System V.4 design team - and includes "fundamental" changes to V.4's basic kernel algorithms. Microport has exclusive rights to market ProLogic's go-faster Unix on Intel platforms - a development kit costs \$1,000, available now. Although it bears the same name, the new Microport is an entirely different company to the one that competed in the third spot behind Interactive Systems Corp and Santa Cruz Operation for Unix operating system business in the late 1980s. Following a disastrous downturn in its fortunes during 1989, Abraxus Software International Inc stepped in for its business last May. Following Intel Corp's recent decision to hand over its Unix V.4 operating system business to Interactive Systems, (UX No 318), naming the firm as one principal publisher of Unix V.4 on its platforms, see page one, Microport faces stiff competition in the Intel-based shrink-wrapped Unix marketplace not only from Interactive Systems and SCO, but also the likes of 1990 start-up UHC Inc, Houston, Texas. However Microport president Spike Kasper is confident that this value-added implementation of Unix V.4 will give his company a window into the crowded market. Whilst Interactive Systems and SCO have indicated they will be moving further into the Unix application market in an attempt to diversify from their core operating system business, Kasper says Microport will concentrate on providing operating system level enhancements to its products. Compiler and graphical user interface technology will be amongst its priorities, and further performance enhancements from ProLogic, expected shortly, will also be offered.

NCR TAKES GLOVES OFF WITH \$500m EMPLOYEE SHARE PLAN, \$1 DIVIDEND

Having relied on a "just say no" defence and all the usual legal options open to a company under siege from a hostile bidder, NCR Corp took the gloves off yesterday in its efforts to frustrate AT&T Co's \$90 a share cash offer for the company. It has adopted a \$500m Employee Stock Ownership Plan which should ensure that it has about 8% of the votes in its pocket in any ballot called by AT&T. It also moved to win over a few more waverers by declaring a special dividend of \$1 a share, on top of its regular quarterly dividend of 37 cents, up two cents on last time. The employee plan will be adopted March 28, which also is the date the company has set for its annual meeting - the earliest it could have been called to minimise the time AT&T has to solicit proxies. The moves may be enough to ensure AT&T fails to get the 80% vote it requires to replace NCR's entire board of directors.

HP ADOPTS HITACHI EXPERT TOOL FOR UNIX LINE

Hewlett-Packard Co is getting closer to Hitachi Ltd, which has already signed to make the Precision Architecture RISCs, help on development of new ones, and announced plans to build a high-end Unix machine around the Hewlett RISC. Hewlett has now agreed to joint development of Hitachi's ES/Kernel expert-systems technology for use on its full line of HP 9000 Unix machines. Hitachi said it plans to extend availability of ES/Kernel to international markets, and therefore wants to make it an open product. The joint development focuses on an enhanced version of ES/Kernel and the initial HP-UX version will be available on HP 9000 systems in Europe, with product availability and details planned to be announced in the fourth quarter 1991. The new ES/Kernel will provide user-interface-building facilities based on Motif; a knowledge-based development environment; a set of high-performance tools for building operational systems; a model that provides for distributed-computing implementations; integration with database and other applications; and supporting methodology.

REAL-TIME UNIX SNAGS COMPOUND CONCURRENT PROBLEMS...

Concurrent Computer Corp, Tinton Falls, New Jersey has postponed shipment of its 68040-based real-time multiprocessors because of continuing problems in getting a version of the RTU Unix system to run on the new machines. Electronic News reports that the 7000 Series was due to ship this quarter, but late May or June now seems more likely, and the release of RTU Version 6.0 on its existing Unix machines won't be available until April although it was originally scheduled for September last year. Concurrent, which doesn't need production problems compounding its crippling debt repayments, (UX No 312), says that it needs at least 45 days after RTU 6.0 ships to add support for the 68040-based 7000 Series. Concurrent's fiscal year ends in June, and that means that the financial impact of the 7000s this year will now be very limited. Given Concurrent's recent losses, the research and development problems are unwelcome, and the company is threatened with an involuntary Chapter 11 bankruptcy petition unless it can get a satisfactory settlement with its lenders - last week it got an additional one week extension to the deadline by which it must respond to the bankruptcy petition brought by three of its bondholders at the end of last year. Apart from holding up shipments of the 7000, the delays are affecting sales of the high-end Series 8000 RISC line - they are shipping, but they require RTU 6.0 in order to operate at full capacity in simulation applications, which is a key market for Concurrent.

...AS IT REARRANGES THE FURNITURE

And Concurrent reorganising US sales and marketing on vertical lines with units for government, real-time technical systems and real-time commercial systems, each with financial accountability for its target markets. Asia/Pacific is now under a single management, a new Continental European operation has taken over some country functions in Benelux, France, Germany and Switzerland. The UK is unchanged.

AT&T ADDS NEW NETWORKING, CONNECTIVITY TO STARSERVER LINE

AT&T Computer Systems has enhanced its StarGroup network computing offerings with the addition of new SNA connectivity options and management capabilities. Its SNA Gateway now includes support for X.25, Token Ring and the ability to connect multiple hosts via a single SNA Gateway workstation. Host Connectivity software, for integrating Unix into SNA environments, also gets X.25 and Token Ring support. On the management side, Systems Manager gets support for StarGroup LAN Manager server, StarLAN 10 Network SmartHub and Banyan Vines. AT&T has added Computer Management Agent applications to its System 7000 and StarServer FT systems, and a StarGroup Network Manager Agent for remote management of StarGroup LAN Manager Server networks, which means that AT&T's entire Unix system range can now be centrally managed, the company claims. In addition Westboro, Massachusetts-based Banyan Corp says its Vines network operating system will now be offered across AT&T's full StarServer E range following a recent deal between the two.

TATUNG'S MARINER SPARC MAKES UK DEBUT AT CADCAM SHOW

Much previewed in the US, Tatung's Sparc workstation, the Mariner 4i, is being unveiled in the UK by Birmingham-based Workstation Technologies Ltd on its stand at the CADCAM Show in Birmingham's National Exhibition Centre which opens on March 19. The 16.8 MIPS machine uses a 25MHz Cypress Sparc, and has an optional MS-DOS module with a 25MHz Intel 80386 CPU which allows Unix and MS-DOS applications to be run simultaneously. The Mariner runs Sparc/OS 1.0, a compatible derivative of Sun Microsystems' SunOS Sparc operating system. With 8Mb memory, 20" colour monitor, 200Mb disk and 3.5" floppy drive it costs £6,375.

UNISYS MICRO A RUNS UNIX OR OS/2 ON 80386 Co-PROCESSOR

Unisys Corp has added an attached processor version of its Single Chip A Series Mainframe Processor, the microprocessor implementation of the A Series, so that users can develop and run A Series and Unix or OS/2 applications side by side on the same machine. Called the Unisys Co-operative Computing Platform, it uses 33MHz 80386s for the side designed to run Unix System V or OS/2, which will be integrated under the Unisys Co-operative Computing Environment with the MCP/AS version of the Master Control Program. Unisys claims that the Micro-A side compares favourably in transaction processing with the AS/400 up to the B45, and with the DEC VAX up to the 3800. The machine can also run MS-DOS and be integrated into a NetWare network. The base model combines a 33MHz 80386 with a second-generation Micro-A with 12Mb on the board, which goes into one AT slot, for \$26,750. It can be grown to 36Mb A Series memory, 16Mb on the 80386, 6Gb disk and two SCSI buses - that costs over \$100,000.

VISIONWARE READIES NEW XVISION RELEASES

UK personal computer-to-Unix connectivity specialist VisionWare Ltd, Leeds, is readying a new versions of its XVision software, which allows MS-DOS and X-Windows applications to be viewed on the console at once by enabling a personal computer to act as a local area network workstation and as a Unix-based X-Windows server. Previewed at the Windows Show in London's Olympia exhibition hall, XVision 4.0 ships in April, and will incorporate the features of release 3.2, which is expected next month. XVision 4.0 will support the latest X-Windows X11.4 release and includes new anti-piracy, editing and backup features - it costs £400.

WHAT, NO SMERSH? RUSSIAN BODIES JOIN UNIX INTERNATIONAL

An updated list of Unix International Inc members includes two Russian organisations, SPEKTR, a Leningrad consortium of 10 apparently independent capitalistically-inclined hardware and software companies, whose membership of the club was sponsored by NCR Corp, and the State Institute of Allied Chemistry, brought into the club by Unix International itself; under a little-used provision in the body's charter, membership is free to sponsored concerns.

ORACLE MANAGES TO ALLAY FEARS ABOUT CASH CRUNCH: INVESTOR IN THE WINGS

Oracle Corp's stock is on the up after the company reassured Wall Street analysts that its cash flow situation is under control. According to Computer Systems News, Oracle expects to be near a break-even cash flow this quarter, and to be cash positive by the year-end in May. The company reported a \$36m loss in the first quarter, and there was speculation that having exhausted a \$170m line of credit, it would have to dip into cash reserves of \$46m while negotiating a new credit agreement. However, keeping a hold on expenses and cutting back on customer credit has restored some confidence in Oracle's future, and that has been boosted by rumours that an outside party is about to provide additional funding. Larry Ellison, founder and chairman, won't provide any details on the anonymous investor except to stress it isn't a hardware manufacturer. There are still some doubting Thomases who believe that Oracle is not addressing its underlying problems, but most commentators agree that Oracle's market share and product portfolio is a very sound safety net still.

SUN UPS NFS PERFORMANCE ON SPARCSERVER...

Sun Microsystems Inc has added hardware and software enhancements to its high-end Sparcservers to improve Network File System performance "at the lowest price". The company now has special configurations of the Sparc server 470 and 490 that it says improve Network File System performance - measured by operations per second and response time - by 250% "and are priced below comparable systems" - but it had to go to Interphase Corp to get the boon. Dallas-based Interphase is supplying the the NC400 Network CoProcessor board and software "now available exclusively for Sun's high-end Sparcservers" as a result of a joint marketing agreement between the two, and Sun says that adding two more NC400s to servers boosts Network File System performance by 400% - they come with two as standard and also include Sun Prestoserve, a Network File System accelerator designed to improve server response by increasing disk in put-output throughput, and the configurations will be priced 15% below the separate components combined. The NC400 Network CoProcessor consists of an intelligent Ethernet controller - a separate microprocessor on a 9U VME board - with networking software, and Sun reckons that the new configurations will particularly appeal to computer-aided design, geophysical modelling, software development and spreadsheet analysis users. With the NC400, a Sparcserver 490 can support multiple Ethernets and more than 100 clients with fast response times. The Sparcserver 470 NFS is \$89,900 with 32Mb, 1.8Gb disk, 644Mb CD-ROM and tape, two NC400s and Prestoserve; the 490 NFS in the same configuration is \$114,900; NC400s cost \$8,000 each, Prestoserve is \$6,000, to existing users.

...AS PHILIPS SIGNS FOR SPARC LINE

Sun Microsystems Inc is a major beneficiary of Philips NV's decision to buy in rather than make its computer hardware: it signed to resell Sun's complete line of Sparcstations, using it as the basis of a new, integrated document management system for commercial users, for launch later in the year.

SECUREWARE GETS B1 CLEARANCE FOR A/UX

SecureWare has successfully run the gauntlet of US Government security ratings and won a B1 evaluation for an Apple version of its Compartmented Mode Workstation, the first CMW to make its way through the daunting procedure. It is also the first X-Windows-based system to get any kind of US security clearance. SecureWare's is the technology that OSF selected at the security element for OSF/1 which when ready will have to go through the National Computer Security Centre evaluation process on its own to qualify for an Orange Book rating. The System that qualified includes Motif, X-Windows and A/UX 1.1 running on a Mac IIx. The system has been in active evaluation since January of last year which may explain why an obsolete version of the Apple operating system was sanctioned. SecureWare and Apple are in the early stages of getting A/UX 2.0, the current version, evaluated. SecureWare president Michael McChesney said the networking component was not included in the evaluation. McChesney estimates there's a market for 100,000 trusted systems inside the US Defence Department. IBM, Sun, DEC and Addamax are all working on CMWs under the aegis of the Defence Intelligence Agency, though none is understood to be at formal evaluation stage as yet. Addamax for one is reportedly well-advanced in the preparatory design analysis phase, with CMW running SVR4 on a 80386. Because of the basic nature of a CMW, certain of its features actually qualify for B2 or B3 assurance.

IBM AND DEC VIE WITH AT&T FOR REBID**ON MONSTER AT&T NATIONAL SECURITY 3B PACT**

Following IBM and DEC's success in winning business from the C4 contract from General Motors, (UX No 320), Electronic News reports that IBM, DEC, along with AT&T Co, are awaiting a decision from the National Security Agency in Washington on a possible \$1,000m contract. The Project Focus host computer procurement will include replacing the existing AT&T kit and a significant number of old DEC machines that were to be superseded by AT&T's 3B2 systems. AT&T was awarded a \$946m contract in 1985 to replace the DEC systems and install additional networked systems, but sources say that there were a number of start-up problems, and the number of computers eventually ordered by the Agency was many fewer than AT&T expected. It was not until last year that Project Focus was put out to bidders, and the size of the award has reopened the battle between AT&T and DEC, with IBM now sticking its oar in. When AT&T won the original contract, DEC claimed the computers had been priced below cost and that the various systems were incompatible. However the General Accounting Office rejected DEC's protest.

NEWPORT TAKES UNIX FOR A SONG AND DANCE

Unix is about to revolutionise the sheet music business worldwide. A California integrator called The Newport Group has pulled together the pieces needed to put a Unix-based system, dubbed the MusicSource, in Music stores everywhere and put sheet music on-line. A Customer will be able to go into a store, browse through the computerised sheet music, listen to a rendition, change the key and print out his selection on high-quality paper on a double-sided Hewlett-Packard 3D laser printer, instead of having to wait months for conventional sheet music to be published. The system promises to deliver new releases via telephone the day they're out, maximising on the tunes popularity and doubling the revenues of what is already a \$500M to \$600M business in the US alone in three years time. The Newport system, which can reportedly store 500,000 or more titles and also accurately tracks royalties, solves the retailer's stocking, sorting, pricing and inventory problems while at the same time giving his clientele access to a plethora of out-of-print titles. The Newport Group has struck up an alliance with Tower Records, whose international chain of retail stores, among others, is expected to install MusicSource. Newport's long-term and exclusive hardware and software suppliers include Computone for its multiport board, SCO for its operating system, Informix for its 4GL database engine, Wyse for its terminals and 386/486 boxes, US Robotics for its 9600-baud modems, Mountain for its 300MB tape drives, Micropolis for its 780MB hard drives and Hyundai as a backup box source. TRW is to install and support the hardware with Newport supporting all software, which it designed itself along with a compression/depression board allowing the scores to be printed on 8.5" x 11" paper. Penny Estes, head of the Newport Group, says computerisation will not make sheet music more pricey. It will still cost \$3.85 and retailers will still be able to realise their 40% margins. The system can also be used for accounting and word processing as well as delivering software games on disk. Newport, which reportedly showed the system at the National Association of Music Merchants show in California a few weeks ago without a hitch, goes into beta in 30 days with the rollout following in May. Estes said 2800 retailers had already signed up, a figure she expects to double in two months.

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Here's a tidbit to contemplate: with Microsoft stock up over \$100 a share, chairman Bill Gates is worth over \$4bn, a personal fortune that, the San Jose Mercury News reflects, rivals the gross national product of Bolivia and Afghanistan. It also probably makes Bill the second richest man in America even though his salary is only \$261,000 a year. The Merc notes that the average American would have to work 100,000 to 150,000 years to amass Gates' kind of money.

Unix International is planning to open a Pacific Basin office in Singapore around the middle of March, adding to its current sites in the US, Japan and Belgium.

Sussex Police is to use a fault-tolerant Stratus Computer Inc XA2000 Model 260 for its on-line Operational Information System, which supports a 24 hour response service to calls for police assistance: the £1m system will support 100 terminals at the force's Lewes control centre and its 30 police stations - OIS is being developed by CGS UK Ltd.

Facts Software plc, Bedford, says it is confident that IBM has now ironed the bugs that have plagued AIX applications when running on its PS/2 line: it says it has completed a port of its Unifacts X accounting software to AIX, and the application is now available on the RS/6000 as well as the PS/2.

Paris-based GEC-Alsthom SA has installed a Convex Computer Corp C220 two-processor minisupercomputer in its computer centre to support its railway research projects: one of the projects the minisupercomputer will be used for is the design of the third generation Train de Grande Vitesse - the 220 miles-per-hour "bullet train"; technical problems being studied by computer simulation include compression effects as the train enters tunnels and crash analysis; GEC-Alsthom reportedly chose the Convex C220 because it has a third party software library of more than 700 packages, provides an open Unix-based environment, and at \$1.2m was an affordable system for the project.

UK company Sybase Ltd, which recently launched its first product - an image processing system called Sybase IMS, is about to be issued with an injunction to stop trading by the UK subsidiary of the US database company Sybase Software Ltd, which is apparently claiming that Sybase Ltd is trading under false pretences: however, the whole process could backfire on the better-known Sybase, since Sybase Ltd registered the name in the UK before the American Sybase, and consequently it is the latter company's UK operations that could end up having to change its name; Sybase Software Ltd declined to comment.

Cray Research Inc has introduced version 6.0 of its Unicos Unix-derived supercomputer operating system, saying that it offers improved performance and reliability as well as being easier to install, use and maintain: it will ship from today.

Via an agreement with Istituto per la Ricostruzione Industriale in Italy, McDonnell Douglas is to become a partner in CISAN, Consorzio d'Informatics per la Sanita, a consortium which provides computer-based health systems to the Italian marketplace: the Italian health service is similar to the NHS in the UK, and is experiencing the same kinds of changes - it will be spending up to \$30m on information technology over the next four years.

The UK's Southern Water computing subsidiary, IT Southern Ltd, Brighton, East Sussex, has developed an Ingres-based data capture and processing system for sewerage records called Mantell.

Sony Microsystems is to use Manchester, Connecticut-based Cadkey Inc's three-dimensional computer-aided design software on its News Unix workstations.

London N1-based MEC Information Systems Ltd has announced the European launch of Microsystems Engineering Corp's WysiWord product that combines word processing, drawing and business graphics to run under X Window: the product is initially available under MS-Windows, DECWindows/VMS and Apple Macintosh and the core code and ASCII-based file format are the same in each environment; versions for Unix-based environments such as DECstation, Sun Sparcstation, IBM RS6000 and HP/Apollo are scheduled for release sometime in the summer.

ICL Plc's Unix-based systems are to be distributed by Cesin SL, based in Pamplona, Northern Spain: the Spanish company says that it will be targeting medium-sized companies and will also provide a range of software and consulting services.

DEC has added OS/2 functionality to its DECWrite editor software and its Compound Document Architecture and announced All-In-1 - its Integrated Office Services for DECWindows; the announcement means that DECWrite users can access other OS/2 applications compliant with Microsoft's Dynamic Data Interchange, such as Excel: previously DEC supported VMS and Ultrix only.

ICL Espana SA has won a monster order from Spain's Ministry of Social Security and Labour: worth £9m it involves 225 of the RISC-based DRS 6000 machines, 3,000 terminals, 200 printers, Officepower and communications software to link to IBM mainframes: systems will be installed across Spain.

Atlantix Corp of Boca Raton, Florida has extended its OEM agreement with Integrated Business Computers Inc, based in Chatsworth, California, providing Atlantix Axxess interoperability packaged software product, which Integrated Business is to include in its Unix systems; the company manufactures 80386-based and 80486-based multiuser supermicros and minicomputers run ning under Santa Cruz Unix.

The Comite des Expositions de Paris is promoting a Sicob Moscow computer trade show planned for the VDNK Exhibition Ground, September 2 to 7 (political considerations permitting, presumably): 10,000 visitors from all Republics are promised.

San Jose, California-based Helios Systems Inc has launched its first data communications product, the PowerServe+, a terminal concentrator-server subsystem with 16 RS-232C asynchronous serial ports, designed to enable terminals, printers and modems to communicate over an Ethernet-TCP/IP backbone with other nodes or one or more host computer systems: designed to transform stand-alone computers running Unix or Xenix into multi-user hosts, PowerServe+ can be used with personal computers, workstations or minicomputers that run Ethernet-TCP/IP with an appropriate Ethernet board in each system; it can be implemented on either thick or thin Ethernet cabling and consists of two circuit boards - a processor board with a 16MHz 80C186 board with 1Mb and 2Kb non-volatile memory for network statistics and set-up data, plus 256Kb of EPROM for subsystem usage and the Ethernet driver chip-set; no prices given.

AEG AG's Modular Computer Systems Inc will supply its Tri-D real-time Unix machines to Information Networking Corp Sdn Bhd of Malaysia for use in a \$150m project for a national and international viewdata information and communications services system.

Open Systems Interconnection outfit Retix Corp, Santa Monica, California, has formed a new team to custom-build OSI software to order - the Retix Special Projects Group will be based at Retix's Dublin, Ireland centre: Retix has also introduced a new licensing program, allowing manufacturers to take a raft of OSI products on a one-time license fee, and is now offering OEM versions of its personal computer-based Unix and MS-DOS OSI software.

And Atlantix Corp, Boca Raton, Florida, has begun shipping its Microsoft Windows-based terminal emulation software WindowView, which, used in conjunction with its Axxess or CocoNet software, allows MS-DOS users to access multiple Unix and MS-DOS sessions and to transfer data between the environments over a local area network: WindowView costs \$200, and requires Microsoft Windows Version 3.0.

Applix Inc's desktop office automation package, Asterix, (UX No 316), is now available in Australia from the Australian Information Processing Centre Pty Ltd.

Privately-held, Austin, Texas-based CompuAdd Corp says that sales for 1990 rose 29% to \$515.6m, and its undisclosed profits set a record for the ninth consecutive year: it is a major manufacturer of personal computers, employing over 1,500 people, and it plans to move upmarket with Sparc RISC workstations.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau. (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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- 4 MAR. 1991

The weekly information newsletter for the UNIX ® community worldwide

London, March 4-8 1991

Number 323

HEWLETT, SUN PLAY ROMEO & JULIET IN BID TO END UNIX WARS...

The Byzantine tangle of alliances that is the very fabric of the Unix business these days, took an unexpected twist last week with the unlikely pairing of those two implacable foes Sun Microsystems Inc and Hewlett-Packard Co. The two are proposing to bridge the chasm that has threatened to divide users into isolated pockets of interoperability ever since the Open Software Foundation unveiled DCE, its Distributed Computing Environment, and pitted the HP/Apollo Remote Procedure Call against the wholly incompatible RPC fielded by Sun in its opposing Open Network Computing technology. Now the two - who, regarded as potentially big losers from the developing alliance between Microsoft Corp, MIPS Computer Systems, Compaq Computer Corp and their acolytes, (UX No 321), are beginning to look as though they reckon there is strength in numbers - have, for the moment at least, put their differences aside and teamed up to create yet another industry standard, this time in distributed object management, and will be lobbying for wide-spread industry support.

...WITH DISTRIBUTED OBJECT MANAGEMENT SUBMISSION...

They want to raise the level at which multi-vendor networked computers share information by creating a C++ based object-oriented Class Definition Language, CDL, a project in which Unix Systems Labs will also collaborate. This CDL is the first step on the road to a Common Development Application Environment, CDAE, that would give developers a single interface to write to. As Sun and HP conceive it, the CDAE would transparently iron out the incompatibilities inherent on their opposing RPCs and be independent of the underlying operating system, be it Unix or MS-DOS. The aim is to enable easy application interoperability on high-volume computers, so that users will be able to integrate data - for example, a spreadsheet, a graphic and a block of copy - from systems made by different vendors located on one or more networks. Concomitantly, Sun and HP promise to aggressively attempt to converge their RPCs into a common RPC that relies heavily on ISO guidelines set in the standards committees. The difficulty of the task Sun and HP have set themselves cannot be underestimated. Getting a converged RPC is like trying to stick a round peg in a square hole. However, their commitment is apparent. Ed Zander, the president of Sun's new Sunsoft subsidiary, told Unigram: "if it takes one year or five we'll do it," whilst Sun UK's Graham Lovell says the two will initially "massage the standards" in an attempt to bring the RPCs closer together.

...TO OBJECT MANAGEMENT GROUP TECHNOLOGY REQUEST

A springboard for the wide industry support the pair is seeking would be the blessings of the Framingham, Massachusetts-based Object Management Group, OMG, where both companies have been highly visible players for the last two years. Last Monday, HP and Sun responded as a team to the Request for Proposal OMG issued last fall for an object request broker, the mechanism that allows objects to transparently make and receive request and responses. OMG's Monday deadline for submissions was the reason Sun and HP went public with their alliance, which has been in the making for some 15 months and is now sealed with a signed contract. OMG must now formally evaluate the joint HP/Sun submission, derived largely from Hewlett-Packard technology and dubbed the Distributed Object Management Facility, DOMF, judging it against six others from DEC, Bull, NCR the New Jersey-based DSET, the Data General Corp-spinoff HyperDesk and the highly regarded proposal from the UK-based Architecture Projects Management Ltd. Its choice, following presentations and demonstrations beginning in March, is due by August. Hewlett-Packard and Sun however, made in plain last week that no matter how the OMG decision goes, they intended to productize their technology this year and license it to other firms on highly attractive terms. It was also equally obvious that a positive nod from OMG could catalyse the old enemies into even wider collaborations. More details on page 2.

BARCLAYS BANK SET TO BECOME "LARGEST EUROPEAN AIX USER" WITH HUGE IBM RS/6000 ORDER...

As part of a plan to upgrade technology throughout its branch operation, Barclays Bank is understood to be buying over 2,000 - and possibly as many as 3,000 - RS/6000 boxes from IBM, which will be used in its high-street branches across the UK. As well as marking the RS/6000's breakthrough into the corporate sector of the market, the order will make the bank the largest user of IBM's AIX Unix variant in Europe. According to the UK's IBM System User magazine, the RS/6000s, in server configurations, will form a major component of Barclay's four-year Branch Platform Project, and will be at the sharp-end of its operation, running applications to deal with customer enquiries via X-terminals located in each of its UK branches. Centrepiece of the project will be standard graphical user interface technology, under which all applications will run. The OSF/Motif graphical user interface will be used on the RS/6000s, with IXI Ltd's X.desktop manager running on user terminals. The interface technology, customised specifically for Barclays, and compatible with IBM's Common User Access standard, is currently being tested at one of the bank's development sites near Manchester. The systems are likely to be networked using the Open Software Foundation's Distributed Computing Environment, which Barclays - now an OSF member - has publically endorsed. News of the order, the value of which has not been disclosed, broke during the week that Barclays slashed 5,000 jobs after reporting 1990 profits down by 56% to £760m compared with the previous year.

...AS UNILEVER GOES THE IBM OPEN SYSTEMS ROAD TOO

Another corporate convert to IBM-type open systems we hear is the Anglo-Dutch consumer giant Unilever group. Like Barclays, Unilever has endorsed OSF's Distributed Computing Environment technology, and is believed to be completing a similarly large order for RS/6000 systems as part of an effort to move its information technology requirements over to an open systems environment.

HP AND SUN - AN UNLIKELY ALLIANCE THAT COULD UNIFY THE INDUSTRY

Sun Microsystems Inc and Hewlett-Packard Co's Romeo and Juliet collaboration, see front page, was initially urged on by Unix System Labs, which sees the proposed technology as a way of unifying the industry and opening up Unix to more users - and it could also loosen Microsoft Corp's grip on the hearts and minds of developers with Windows 3.0. The sudden convergence of industry giants Sun and HP, which together lay claim to 60% of the workstation market, on the Object Management Group, catapults the little organisation into unexpected prominence. It also suddenly diminishes the reverence of OSF, Unix International and X/Open, which must now make room for another arbiter in their midst. OMG president Chris Stone said he had no idea Sun and HP were planning a joint submission until they called him from the party celebrating their contract-signing on Friday February 22. That submission will take the place of the solitary filing made last year by HP to hold a place in the OMG queue while it bickered with Sun about the terms of their relationship. Sun and Hewlett-Packard both maintain that the basis of their new-found comradeship is a shared vision of open systems, originally brought to their attention by Don McGovern, director of distributed computing and desktop technology at Unix System Laboratories, who shepherded their alliance to fruition. Months of follow-up discussions convinced them that the only thing standing in the way of their collaborating was a highly divisive history, and they determined to overcome the past to avoid still another round of the destructive in-fighting that marked DEC, Motif, and the UI/OSF unity talks. HP, however, was quick to add that its newest alignment in no ways tempers its commitment to OSF, OSF/1, DEC or Motif. Both OSF and UI will be heavily lobbied to accept the distributed DOMF as part of their plans. While UI's adoption of DOMF was discussed as practically a fait accompli, OMG's choice puts OSF in a ticklish situation, since important members like NCR and DEC are also making submissions. The timing of the HP/Sun alliance is quite fortuitous considering the recent revelations of a Microsoft-led camp, packed with MIPS, DEC and Compaq, whose long-term goal is apparently to unseat Unix. Surprisingly, Microsoft, the Great Satan as far as the Unix community is concerned, did not submit its OLE technology to the Object Management Group's RFP. On the other hand, one company that could immediately benefit from the HP/Sun accord is Netwise, whose RPC technology, generally regarded as closest to the ISO standard, is not included in DOMF despite its ties to Sun. Even if the HP/Sun mating is not solely for the sheer glory of open systems, it is certainly a neat face-saving device. OMG for all intents and purposes owes its existence to Hewlett-Packard and its New Wave interests. The other most active participant has been Sun. Independently, however, neither could have met the terms of OMG's RFP alone, since neither's technology would work on more than one RPC. Together that embarrassing hurdle has been crossed.

...AS MICROSOFT JOINS OBJECT MANAGEMENT GROUP

One of our Deep Throats tells us that Microsoft upped and joined the Object Management Group last week. OMG, reportedly anxious to bask in the reflected glory of brand name members, has been pursuing the software company for months and months only to be rebuffed time and time again as unnecessary to Microsoft's strategy. Now it looks like last week's historic Sun/HP alliance, see front page, might have pushed Mr Gates into the OMG's waiting arms. After all, Microsoft is thought to see the standardisation process swirling around Remote Procedure Calls as critical. Then again we've heard Microsoft committed before Sun and Hewlett went public - but don't forget Mr Gates has very good surveillance.

ALLIANT WILL HAVE INTEL N11 "THIS MONTH"...

Alliant Computer Corp expects to take delivery of the next iteration of Intel Corp's i860 Risc part, the N11, by the end of this month, according to Allen Brain, president of European operations. Although it will not feature in Alliant's range of parallel minisupercomputers until the end of the year at the earliest - they currently use the initial version of the i860, the N10 - he says the part will be introduced on swap-out boards that will plug into the boxes. Moving to scotch rumours that the N11, whilst fixing some of the major weaknesses in the i860, might not retain compatibility with its predecessor, (UX No 318), Brain says that the N11 will be at least object-code compatible with the N10. The N11, second in the i860 series, is tipped to appear in 60MHz and 67MHz versions with a cycle time of 16ns - the N10 operates at 25ns - with some 3.5m transistors. Following the N11 will be, no, not an N12 part, but the N15, we hear.

...SOFTWARE PROBLEMS, PAX DELAY CONTINUE...

Whilst Intel Scientific Computers is reported to be having continuing difficulties with compiler technology for its i860-based, 128 processor iPSC/860 system, (UX No 318), Alliant says its proprietary compilers can now be used on the standard i860 part. However the Parallel Architecture Extensions standard, PAX, announced with great fanfare by the two firms back in October 1989, (UX No 254), as an effort to deliver both an application binary interface and an application programming interface to i860 hardware and software developers is still not complete, and means there is still no standard software available that will run across different i860-based platforms. Initial hopes for PAX were that it would promote the development of a raft of new software and hardware products that could run on a new generation of i860-based workstations, multi-processors, uni-processors and parallel systems. PAX is now said to be some nine months away from completion, and even Alliant is not yet able to offer any popular Unix database system on its computers. The dearth of application software available for its machines is not expected to ease until late this year. The FX series of minisupers currently run an implementation of the Berkeley System Distribution Unix variant - a V.4 implementation is still a year out, says Brain.

...HOPES TO BE BACK ON AN EVEN FINANCIAL KEEL BY SUMMER

Alliant finished its financial 1990 in December with a loss of \$34.4m, but says financial woes will be over by the end of its second quarter, by which time it expects to be breaking even. Brain attributes the downturn in fortunes to a delay before the new low-end FX/800 could be rolled out, (UX No 322), but at least some was also due to the problems the company had last year in getting its software compilers to work properly on the FX/2800. Brain says revenues of \$18m per quarter are needed to reach the break even point. With, according to Brain, some \$5m income now guaranteed each quarter from customer support services on its nearly 600-strong installed base, Alliant is banking on drumming up at least \$13m of new business each quarter to make that mark. Brain added that the only debt the company now has is debenture, which he says is being paid off at a manageable rate of just over \$2m a year. Commenting on last week's resignation of Ronald Gruner, co-founder of Alliant in 1982, now replaced as chief executive officer by president Craig Mundie, the other founder, Brain says the move had been planned for some time, whilst Mundie was "getting up to speed on executive functions." There was just "no space for the both of them," he added.

DEC LAUNCHES DEVELOPERS VERSION OF OSF/1 UNIX...

DEC last week became the first vendor to come out with a release of the OSF/1 Unix variant. Described as "an early release for developers" by UK open systems marketing manager Janette Hewitt, the software will pave the way for the next major release of Ultrix, expected in mid-1992, which will mark DEC's full transition to OSF/1 technology on its RISC-based systems. One reason for DEC's lead is that the Open Software Foundation used a DEC workstation as the reference machine for the OSF/1 operating system implementation. However observers doubt that DEC will ever migrate its Ultrix implementation for the VAX to full OSF/1 compatibility ahead of its Risc-based successor. DEC says it will begin shipping an early binary version of OSF/1 on March 8 - the kit includes OSF/Motif Version 1.1, X-Windows 11.4, the Gnu C compiler and development tools and an installation procedure, though no prices were given. According to Electronic News, the biggest headache for DEC was whether to call the thing OSF/1 or retain the Ultrix name.

...PLANS ADDITIONS TO DECSTATION LINE...

DEC says that it will bring out three R3000 RISC-based workstations in its DECstation line spanning the full performance range later this year. The new machines will use 33MHz and 40MHz versions of the chip and replace all existing models and will be designed with removable processor and memory modules so that they can be upgraded to the 64-bit R4000 RISC when that becomes available next year. The company said that the top model of the R3000-based line will deliver double the performance of the DECstation 5000 Model 200, which is rated at 24 MIPS. There will also be a new RISC server more powerful than the DECsystem 5500.

OLIVETTI'S FLEXIBLE WORKSTATION PORTABLES SUPPORT XENIX

Touting it as "everything in one - from a portable to a workstation and back again" Ing C Olivetti SpA has launched its Workstation range, comprising three notebook computers: the 12MHz 80286-based A12, 16MHz-based V16 and 20MHz 8386SX-based S20, and two laptops: the 20MHz 80386SX based S20 and the 33MHz 80386-based D33. The feature that distinguishes these products from anybody else's portable range, according to Olivetti, is the docking expansion modules on offer that enable the user to add units to the portable once back in the office, constructing a workstation by connecting to a "docking station" offering its own Centronics parallel and RS232C serial ports, VGA interfaces, two 16-bit expansion slots and room for a 5.25" disk drive. The machines also feature an integral mouse pad and paper-white liquid crystal display. True to its claims to embrace the workstation world the range is capable of running Xenix and OS/2 as well as being offered with MS-DOS and Windows 3.0. Bowing to German supremacy in precision engineering, the Workstations were designed, developed, and are being manufactured, by Olivetti's German subsidiary Triumph Adler. The notebooks weigh in at 6.5 lbs, A4 size and two inches thick, while the laptops weigh approximately twice as much. The range extends from the entry level 80286 notebook to the top of the line 33MHz 80386 laptop. A 12MHz 80286 notebook with 20Mb hard disk will cost £1,200, the 80386-based laptop with 40Mb disk, £4,100, the docking station £700, and they will be available in the UK at the end of April.

ADDAMAX CLAIMS FIRST SECURE UNIX V.4 IMPLEMENTATION FOR INTEL 80386

Addamax last week announced that it has installed the world's first SVR4/386 compartmented Mode Workstation, CMW, software at Contel Federal Systems in Virginia, and is in the process of shipping to 18 other customers in Europe, North America and the Far East. Addamax's is the only SVR4/386 system currently undergoing US government evaluation. Both Orange Book B1 and CMW security ratings are being sought and the company expects to be on the GSA schedule that gives the green light for government procurements to begin, by April. ACMW, as the software is called, reportedly supports both secure X-Windows and Open Look. A secure DOS encapsulation capability will be released soon and secure networking is in process. Addamax president Peter Alsberg says the 4.0 Application Binary Interface assures that "more than 800 applications available specifically for 4.0 as well as thousands of SVID-compliant applications developed for SCO, Interactive and other versions of Unix will run on ACMW." The system is also Posix and X/Open-compliant. Reportedly Addamax's beta customers have verified the operation of 75 popular shrink-wrapped programs. The government is evaluating ACMW on Zenith, Delta Data, Unisys and Datawatch 386 machines. Expectations are that Wang, Intel and others will be qualified thereafter along with 486 configurations.

NCR UNVEILS NETWARE/X FOR ITS SYSTEM 3000 UNIX SERVERS

NCR Corp has introduced NCR NetWare/X, which it describes as next generation networking software, for NCR's System 3000 processors running Unix System V.4 and Novell Inc's NetWare operating system. Based on Portable NetWare, NetWare/X is designed to be used as high-performance file, application and communications servers on local area networks and enables MS-DOS, OS/2 and Macintosh users to connect into one network to share files, printers and other hardware devices to combine the advantages of personal computer operating systems functionality of Unix systems. It supports internal bridging from the server and direct Ethernet and Token Ring support, and enables clients to access printers connected anywhere on the network. On a System 3000 server, it supports high order communications such as X25, SNA and Network File System that are not widely available on personal computer local nets. It can be used in conjunction with NCR's WIN/TCP and Network File System products to construct true wide area interoperability between NetWare and Unix. NCR NetWare/X is out next month and prices start at \$10,000.

DEC STALKS SUN USERS WITH MOTIF AND VUIT AT SUN EXPO

DEC was to be seen last week at the unlikely venue of the Sun Expo exhibition in Boston, where it is showing DECWindows Motif and DEC VUIT - for Visual User Interface Tool - presumably aimed at those Sun customers not satisfied with Sun Microsystems' own Open Look interface. DEC says that it is considering selling other software on Sun, IBM and Hewlett-Packard Co Unix machines, including software engineering tools, office and data base tools, and its suite of Network Application Support products.

X/OPEN'S GUI SPECIAL PROJECT TEAM SAYS A 'LAYERED APP' CAN SOLVE INTERFACE APPLICATION PORTABILITY PROBLEMS

Apart from whatever graphical user interface interoperability issues may be resolved by Sun Microsystems and Hewlett-Packard's new-found attraction for each other, (UX No 322), and see front page, latest news on the efforts of the international standards bodies to find a solution that would allow applications to run across various interface environments is an interim report submitted to the IEEE's 1201.1 windowing committee by X/Open's GUI special project team. It finds "a layered Application Programming Interface to be a credible approach for constructing applications that are portable across OSF/Motif, Open Look, Microsoft Windows 3.0 and Presentation Manager." As well as supporting these interfaces - and the applications that already run under them - the project team's list of requirements for such a layered API also says that access to underlying layers must not be prohibited - in other words that developers must be able to use the unique features, improve performance and provide backwards compatibility for each interface. Whilst supporting existing "look and feels," such an API must enable an application to be built independently of any particular look and feel, but nevertheless utilise GUI features when running. Importantly it also stipulates that the X-Windows Intrinsics tool-set will only be used in an API if the underlying toolkit is based upon X-Windows - therefore endorsing non-X-Windows-based interface environments. X/Open's GUI committee also perceives the future importance of interactive design tools - at the moment there are none that work across multiple GUI environments - it says that an intermediate language for such tools should be standardised.

INSTRUMATIC BRINGS IN CADRE'S TEAMWORK AS INDEPENDENTS PRESS IBM TO BRING AIX INTO SAA

A large crack has appeared in IBM's argument that AIX Unix and Systems Application Architecture will remain separate development environments - the crack comes courtesy of Marlow, Buckinghamshire-based Instrumatic Ltd which represents the US company and IBM Business Partner Cadre Corp in the UK and has announced Teamwork as the "first complete set of analysis and design tools common to both IBM OS/2 and AIX workstations". Instrumatic UK's marketing manager Richard Campbell explained that while a developer can take models developed under AIX and run them in the OS/2 environment, IBM hasn't yet reconciled the differences between AD/Cycle and AIX software engineering, and a developer would probably use one route or the other. However, whichever route was chosen, the skill set required to use Teamwork would remain consistent, thus eliminating "both the task duplication and risk formerly involved in developing along either route". In other words using Teamwork, a developer could write an application within the AIX environment that would run on an IBM mainframe and which would therefore ultimately be SAA-compliant. Yet Campbell prevaricated as to the implications this has for AIX and SAA, saying that if one rigorously upholds IBM's definitions then a developer cannot create an SAA-compliant application on the RS/6000 because the AD/Cycle process has not been applied to AIX nor has the approach to the Repository been clarified for AIX. But he implied that these were conceptual problems and did not constitute a real-life programming dilemma. He thinks it likely that IBM will announce some "association" between the two environments in the near future. An IBM spokesman said that "interoperability is the name of the game" and added that IBM is "obviously" moving towards AIX being part of Systems Application Architecture.

HEWLETT-PACKARD LAUNCHES NEW 80486 VECTRA, ENHANCES ETHERTWIST, OPENVIEW HUB SOFTWARE

Lest we forget that Hewlett-Packard Co is a successful vendor of personal computers, the company has announced seven new products: network management software enhancements and an on-site warranty for its 80486-based personal-computer products, all designed for the personal computer local area network market. The new products include an 80486-based HP Vectra running at 33MHz; a mass-storage subsystem enhanced with Extended Industry Standard Architecture; SCO-Unix and optical disk drive support; as well as new hubs, transceivers and integrated network-management software for the family of EtherTwist local area network products. The new HP Vectra 486/33T PC can support more than 200 users on a local network, or 100 users of terminals based on a Unix system in a multiuser configuration. Based on the 33MHz Intel 80486 chip, it supports a new EISA Small Computer System Interface 2 subsystem that Hewlett claims improves performance for LAN and multi-user environments. Hewlett's EISA SCSI-2 host bus adaptor can support up to seven devices, and multiple host-bus adaptors may also be used. Three enhancements to the Hewlett-Packard Storage System include the addition of an EISA host-bus adaptor, support on systems running Santa Cruz Operation Unix System V/386 and the availability of a rewritable optical disk drive for Novell NetWare 386 systems. The EtherTwist products eliminate the need for a card-cage chassis because the intelligent network-management capabilities built into each unit can be integrated as a smart-wiring system with Hewlett's OpenView network management. The company's EtherTwist Hub Plus/48 is designed to serve medium to large twisted-pair Ethernet workgroups with a single manageable network device. The Fiber Optic Hub Plus provides Ethernet connections among multiple workgroups within a building or among buildings on, say, a campus on a fibre network. The EtherTwist EISA Adaptor Card 32 connects PC-based servers with an industry-standard EISA bus to multi-vendor computer systems in work groups. The Fiber Optic Transceiver connects Ethernet devices to a fibre network. The ThinLAN Transceiver connects Ethernet devices to a thin coaxial network. Enhancements to EtherTwist, OpenView Hub and Bridge Manager software, include the automatic identification and mapping of network topology.

EUROPE LOOMS LARGE IN COMPAQ'S LEGEND AS IT CONFIRMS WORKSTATION TALKS

Despite industry-wide speculation about how Compaq Computer Corp will resolve its entry into the workstation market, the company remains, at least publically, tight-lipped about its RISC intentions. Eckhard Pfeiffer, executive vice-president and chief operating officer, over in the UK to talk about the role of the European market in the company's continuing fortunes, maintains that no concrete decision has yet been taken, and that the company is still putting the pieces of its RISC game plan together. However, in an attempt to pour some oil on stormy waters, he said that he hoped an announcement would "not be too long away." In addition, Andreas Barth, vice-president of Compaq's European operation, said that while the firm does not perceive any of the gang of current RISC technology suppliers as having created a standard for this type of processor environment, "if some of these people got together - then this would be interesting." And in what can only be assumed to be veiled reference to the so-called "Gang of Nine" that is understood to be working on the creation of a new workstation standard, (UX No 321), he added that such a collaboration wouldn't be "just at the the processor level, it's the operating system environment too." Two of that Gang of Nine, Microsoft Corp and Santa Cruz Operation Inc already have working agreements with Compaq - and "it would make sense" to work with existing partners, he said. As far as existing products go, Compaq reported that its European operation turned in sales of \$1,800m in 1990 - up from \$1,200m in the previous year - representing slightly more than 50% of its worldwide sales, and exceeding those of North America for the first time. Of that \$1,800m, sales of its flagship SystemPro computer totalled \$85m. The company looks for growth in Europe this year at least double the 13% forecast industry average, and expects to beat the 5% to 7% forecast for the US; he had no view on how profits would turn out but noted that the company looks for 8% to 10% net margins and achieved 12.6% last year. According to UK managing director Joe McNally, Compaq's UK sales for 1990 were \$504m, or 28% of total European sales last year, and the biggest single market outside the US. Overall the US accounts for 43% of revenue, followed by the UK with 14%, France 12%, Germany 9%, Italy, Canada, Netherlands and Switzerland 3% each, with others making up the remaining 8%.

INGRES TEAM QUIT FOR GENERATOR START-UP

In what looks to be bad news for Ask Computer Systems Inc's Ingres Corp, key members of the Windows 4GL development team - including Neil Goodman, who was one of the company's leading database architects - have left the company to join a start-up led by Marty Sprinzen, ex-international vice-president of Ingres. The new company funded by venture capital, is believed to be based in San Francisco and is expected to develop an applications generator product to rival Ingres. Industry sources have heard that the team left because the members disliked working on a product that was rightly or wrongly perceived as being optimised for just one vertical market - manufacturing. However, it looks as if the news could be worse for internal morale than for the Ingres product itself, since as UK managing director Mike Hedger says "the Windows 4GL product is already developed, out in the field, supported, and is a stable product". Furthermore, plans for the product's development over the next two years have been prepared and submitted so that the architectural side of Windows 4GL appears to have been safeguarded. A new version of Windows 4GL will be launched shortly as Ingres planned.

VENTURE CAPITALISTS TAKE CONTROL AT VISUAL TECHNOLOGY

On Friday February 22, the venture capitalist boys from Hambrecht & Quist walked into the offices of Visual Technology, one of their properties, and got the resignation of president and CEO Ron Smith and fired half the company's sales and marketing team including sales and marketing vice president Carman Reitano. The bloodletting, which shuts down certain field operations, substantiates rumours of renewed financial trouble at the struggling 12 year-old Massachusetts firm which escaped Chapter 11 only 15 months ago. H&Q has replaced Smith with Art Bruno, a past Visual president who until last week was running a health care chain for the venture capitalists. According to one of the fired officials, Bruno's charter is to assess Visual's current position and give H&Q a "go-no-go" estimate. However, vice-president of advanced marketing and technology Mike Braca, who remains with the company, claims the restructuring proves Hambrecht's determination to revivify the firm. Ironically the cutbacks were made the same week that Visual announced the first distribution pact for its X-terminals with international distributor Merisel, the merged Microamerica/Softsel operation. It was also the week Smith wrote a personal letter to the press announcing a strategic royalty alliance with Intergraph Corp to develop a high-end custom X-terminal that Intergraph would start manufacturing late this year and that both firms would sell. Hambrecht's action was reportedly taken to halt the cash drain at Visual, estimated at around \$1m a quarter for the last four quarters. The company's problems reportedly stem from inadequate funding compounded by Smith's failure, despite a widespread search to find an equity partner who could restore Visual's tarnished image and manufacture its terminals cheaply offshore.

...FOLLOWING DEVELOPMENT DELAYS

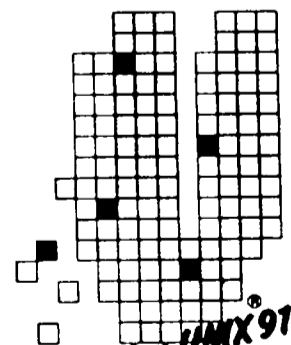
Shoe-string budgets have apparently stressed Visual's engineering department, delaying development of the so-called 14LE, a heavily redesigned next-generation descendent of the 64 OSDX, the very first X-terminal to make it to market. The low-end 14LE was supposed to be a highly competitive, if low-margin replacement for the company's current 14-inch line, regarded internally as only a short-term tactical measure. Due last month it reportedly couldn't make it out now until later this year. Visual has also had trouble delivering two models of its high-end colour line in volume because of bugs in a programmable oscillator chip, a key component coming from an outside supplier that allows models 11 and 12 to be unbundled, a prime selling point. Braca, who for the time being is dividing Reitano's responsibilities with executive vice-president Jerry Burke, an H&Q man on Visuals' permanent staff, says the restructuring will entail a complete re-appraisal of the company's current and future products, where the margins are, and how they are sold, perhaps resulting in a re-focus on OEM agreements such as Visual has with Kubota, Stardent and Syvision and a de-emphasis on distribution, which may be a premature market.

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- Folks who think there are simply too many Unix shows will be gratified to learn that Unix Expo West, set for May 7-9 in Anaheim, California, has been cancelled apparently for lack of support in the current economic climate. Show organisers National Blenheim Expositions said companies are consolidating trade show activities and focusing on larger, long-established national events. Meanwhile, Comdex/Paris, scheduled for April, has also been cancelled out of fear of terrorism and low attendance, according to its organisers The Interface Group.
- Clarification: Our headline writers got a bit carried away the other day with our front page story about bugs in Interactive's system (UX No 321). As our story clearly indicated the problem was with Unix System V 3.2, not SVR4 as the headline read.
- On Tuesday March 5, Interactive Systems Corp is supposed to announce an OEM agreement with \$515m-a-year CompuAdd, which will put Interactive's Unix V.3.2 on its 386/486 computers. Reportedly the main reason Interactive got the deal is its role as a "principal publisher" of SVR4 on Intel Corp platforms. CompuAdd, which is now also into Sparc clones, expects to standardise on SVR4. Interactive expects to furnish CompuAdd with SunOS consulting and custom development.
- Computer retailer Computerland has signed up to sell NCR's entire range of workstations in Dayton, Columbus and Toledo, Ohio, in a deal worth \$20m over the next three years.
- US reports say that Hewlett-Packard is expected to use Advanced Micro Devices' Am29000 Risc part in its next-generation LaserJet printer.
- Long-time Unix developer, Quantum Software Systems Ltd, Kanata, Ontario, will introduce a Posix-compliant, micro-kernel version of QNX, its Unix operating system variant in the summer.
- Applix Inc's Asterix desktop office automation package, (UX No 316), is now available in the UK from mbp Software & Systems Ltd, Berkhamsted, Hertfordshire.
- Sybase Inc, Emeryville, California, says its relational database is now available for IBM's RS/6000 series of Risc workstations: SQL Server costs from \$3,750 to \$40,000, SQL Toolset goes from \$1,430 to \$19,200 and Open Client ranges from \$450 to \$4,800.
- The European Forum for Open Systems, EurOpen, formerly the European Unix Users Group, is holding its Spring '91 conference and exhibition in Tromso, Norway, between 20-24th May.
- Already a leading partner in AT&T's symmetric multi-processing Unix development effort, Sequent Computer Systems is also teaming with the phone giant's Unix System Labs to get the firm's Tuxedo/T transaction processing monitor running in a symmetric multi-processing environment, using its latest Intel 80486-based technology, the Symmetry 2000.
- 88open has opened its fourth Certification Test Centre in Europe, the latest is in Paris: it's being managed by Thomson-CSF subsidiary CETIA, but has systems from various 88000 vendors.
- And 88/Open has certified Ryan McFarland's RM/Cobol-85 compiler and its many commercial applications as being compatible across 88000 systems.
- New York-based Objective Technologies Inc has begun shipping OT Palettes 2.0, collection of graphics, maths, editing, formatting and file management tools for use in building applications that will run on the NeXT Computer Inc workstation: GraphPalette is priced at \$1,500, MathPalette and SmartFieldPalette are both \$770, and ChooserPalette costs \$500.
- Also on the NeXT Computer front, Microtech International Inc, East Haven, Connecticut, says it is now shipping a range of hard drive, removable hard drive, CD-ROM and memory sub-systems for the NeXT system: the Eclipse range goes from \$1,900 for a 200Mb drive, to \$1,400 for a removable disk to \$1,100 for a CD-ROM.
- A new X Business Group report, 'Personal Computers and the X-Window System,' forecasts the market for personal computer-based X-Server products will be up more than 300% on 1990: last year the technology was only beginning to come to market, and was dominated by MS-DOS-based products from the likes of Locus Computing, Graphic Systems Software and Hummingbird Software - this year Windows-based products will predominate says the group.
- In what must be one of the biggest commercial Unix systems anywhere, Marshfield, Wisconsin-based Marshfield Clinic has given Amdahl Corp a \$5m contract for one of its new 5995-700A mainframes to run Unix alone: the system will run more than 1,000 commercial applications and serve over 1,200 users running transaction processing and mission-critical applications; the main frame, with 192Mb main, 128Mb expanded memory, and 130Gb on disk, replaces three smaller mainframes.
- Correction: Unix International VP Dave Sandel says our informants from the UI Members meeting the week before last heard things wrong. What UI president Peter Cunningham actually reported to the group was that 120 ISVs have completed their software to SVR4 while 250 companies are still moving their programs over. The way our sources heard it and read the foils only 120 firms are actually committed to porting to SVR4 though some 376 firms has signed up for the UI ISV programme (UX No 322).
- US reports suggest Data General has slated March 13 as the day it will unveil tightly-coupled multi-processing servers built around Motorola's 88000 Risc part that will go to 100 MIPS, running a V.4-compatible version of its DG-UX Unixalike - a future four-processor model is likely to top 200 MIPS, the same reports suggest: Data General's current 88000-based AViiON workstations top out at 27 MIPS.
- In addition to the responses to its Request for Proposal, see front page, the Object Management Group also announced 12 new members, bringing the total to 108: new ones are Stratus Computer Inc, Software AG, Informix Software Inc, Cincom Systems Inc, Cigna Inc, CSX LIS, Erisoft AB, Genesis Development Corp, Hal Computer Systems, HyperDesk Inc, Qualix Group Inc and Rational Consulting Co Inc.
- Latest news on the next iteration of IBM's RS/6000 confirms, as predicted, (UX No 322), that the box will not be called the RS/5000: sources familiar with the specification of the machine say it will combine, in one leap, many of the enhancements that were planned for the RS/6000 series over the next few months.

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Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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13 MAR 1991

The weekly information newsletter for the UNIX ® community worldwide

London, March 11-15 1991

Number 324

MULTI-PROCESSING 68040 EFFORTS "IN DOUBT"

Another possible setback in the roll-out of Motorola's much-delayed 68040 microprocessor was emerging last week as sources at Concurrent Computer Corp, the financially-worried Tinton Falls, New Jersey-based manufacturer, claimed that multi-processing 68040s delivered to it so far are "deficient," and do not conform "to the original product specification." And Concurrent went further, saying that Motorola, which has only recently begun to deliver good, single CPU versions of its 68040 complex instruction set microprocessor to system manufacturers - nearly two years after the launch (UX No 224) - may have thrown in the towel completely on a planned multi-processing version of the part, abandoning multi-processing 68040 system-builder hopefuls entirely. The missing element, it says, is the copy-back cache part, crucial to the effective working of multi-processing systems. Motorola, it says, "is not going to develop the multi-processing 68040 chip, and is re-writing the original product specification, omitting any reference to that [copy-back cache] part."

CONCURRENT MULTI-PROCESSORS "DELAYED UNTIL THE SUMMER"

To ensure the integrity of a multi-CPU environment, each processor needs to know that the information it holds about a certain piece of data is the same as that held by its companion processors. Write-cycles carry these details to and from memory. Conventional write-through cache techniques used in a multi-processing environment would mean each processor having to address memory simultaneously, taking up large and valuable amounts of space on the bus system to perform what are essentially administrative tasks, reducing overall system performance drastically. Copy-back cache elements pre-empt much of this traffic and, using bus-snooping techniques, stop so many write-cycles occurring. Concurrent, whose engineers are reported to have been working closely with Motorola's 68040 development team on multi-processing features, says it is having to build its own gate-arrays, clocks and other enhancements into the processor environment to get around the problem with the processor. However delays in receiving initial 68040 parts from Motorola and the extra development work needed mean that deliveries of multi-processing 7000 boxes will not now begin until some time after the summer - a five month delay. Another firm staking much on a multi-processing 68040 future is Arix Corp. While not aware of the lack of a copy-back element, Arix officials said its own, wider bus system, allows write-through caching to be supported on its architecture in a dual-processor environment. Backing this up, it says it will preview a dual-processor System 90 68040 box at this week's CeBIT Hannover Fair. Unisys Corp, Groupe Bull SA, Siemens-Nixdorf, NCR Corp and Thomson CSF SA's Cetia are other companies building multi-processing Motorola 68040 boxes. Calls to Motorola in the US were not returned, but Clive Gay, European Product Manager for Hi-End Microprocessors, said that although "it had been a point of discussion," Motorola "would retain the copy-back feature on the 68040 and 50."

COMPAQ-MIPS CONSORTIUM STRUGGLES TO MEET APRIL DEADLINE

The Microsoft/Compaq/MIPS/DEC/SCO social club apparently has a working title - ARCA, for Advanced Risc Computing Architecture - but apparently that's not how the Consortium is going to style itself when it makes its formal debut. As of late last week, we heard, they were still casting about for a name, a search that was holding up getting some stationary printed. However, the smart money is still betting they'll go public in the first two weeks of April, lest they lose some of the public mind space they're fighting so hard to dominate. The rumour mill is saying that SCO is jittery over what it stands to gain out of the coalition and may be fighting a rearguard action against Ultrix as its base operating system (UX No 321). If it effectively winds up out of the operating system business - despite holding the application binary interface and maybe the application programming interface for the MIPS architecture - the profit margins in Open Desktop, which is supposed to be the consortium's environment, are too skinny to make any kind of money on. Then too, the gossips say, Compaq and Microsoft almost came to blows over LAN Manager, and the possibility that Compaq could wind up with a non-Novell compatible operating system. However, it doesn't look like those skirmishes have derailed the Microsoft engine. As a matter of fact, we can hear you can now count Siemens as one of the bunch, and that software majors like WordPerfect and Lotus are being counted for their support. Microsoft reportedly has Bob Short, an ex DEC guy now one of its own, designing the motherboard for "ARCA." Since a MIPS R4000 chip is still vapour, he's said to be using an R3000 for prototyping. Microsoft will reportedly be licensing the design to Compaq and DEC at least. Silicon Graphics' board will probably be an add-on.

HP SNAKES SET FOR 26th

Hewlett-Packard's low-cost Precision Architecture Risc Unix workstation series, codenamed Snakes, are to be announced on 26th March, (UX No 306). A low-end diskless system, running a 50MHz Precision Architecture Risc part, is likely to come in at \$12,000 with 55 MIPS and 15 MFLOPS performance, 16Mb memory and 19" monitor. Larger configurations will come in the \$22,000-\$27,000 price range, whilst a high-end, 66Mhz box with 75 MIPS performance will also be announced. Hewlett lifted the lid a little on the new workstations at an IEEE conference in San Francisco last week. Electronic Engineering Times says the 66MHz implementation of the PA Risc part has been specially tweaked for use in a workstation, and comes with an extended 128Kb cache size and 256Kb of data. A Specmark of 55.3 is attributed to the Snake - just a shade higher than the 52 we suggested here at the end of January, (UX No 318). The 66MHz iteration of the part, the PA-Risc 1.1, has double the number of floating point instructions - 32 - than previous implementations, although the processor retains its two-chip configuration. The spectre of incompatible byte ordering on the machines was also raised when Hewlett elected to use EISA as its expansion bus - EISA and Intel architectures use little-endian byte ordering whilst the PA is engineered is big-endian by design - however Hewlett has reportedly implemented a special bus-wiring technique which allows the EISA slots to be used. Incompatible byte ordering proved something more of headache to DEC, when it introduced its DECstation/Ultrix series, based upon Mips Computer System's R series Risc processor. DEC reversed the byte ordering in that implementation to bring the DECstations more into line with its VAX computer series, but this meant applications developed for use on vanilla Mips-based architectures could not run on DEC's workstations. The problem was not finally overcome until Mips was able to design a technique into its processor series which detects the byte ordering arrangement an application requires and adjusts itself accordingly, (UX No 304).

CASH-STARVED EAST GERMAN COMPUTER INDUSTRY GETS FUNDING FROM THE EAST, AS WESTERN INVESTORS SHY AWAY

Mark John reports from Berlin's Unix Forum show

Concept asa, Frankfurt, was seen displaying its vendor-independent db++ database management system. Quietly - such claims are illegal in Germany - Concept asa software development partner Malcolm Agnew whispered that db++ was between five and six times faster than competitors such as Informix and Oracle. But the real advantage of db++, he continued, is its openness to the Unix operating system which allows the database to be used at the shell level, and the user to go into large applications running alongside the database in a way that the Informix or Oracle user cannot. Meanwhile, Manchester University has chosen the system to train its first-year students on databases because it liked the db++ query language more than SQL. Agnew accepts Concept is much too late into the market and too small to offer any real competition to the big players, but is looking for partners that are prepared to integrate db++ into larger applications. It has also developed a document retrieval system, Citat/X, that runs on top of db++.

IQ Products, Munich, is a small operation that sells Unix and VMS products such as Wingz, Saber Software Inc's Saber-C development environment and Legato Systems Inc's Legato networker Unix network data security system to the German speaking countries. IQ Products' Robert Beltling says its aim for 1991 is to develop its product range, and it is desperately looking for partners.

1,000 new Unix programs

Nomina, the Munich-based publishing house, was showing-off its bi-annual Isis Unix report, which this time around lists 3000 Unix programs, and profiles 1000-odd Unix companies in Germany, Switzerland and Austria. Detlev Dehn of Nomina reckoned that in the last six months, over 1000 new Unix programs have become available to those markets. The Isis Unix report for the first half of the year costs 315DM - for an extra 70DM, the subscriber gets both halves.

Undeterred by the poor attendance to the show from the East, BSP Software Distribution GmbH, Regensburg, is clearly looking in that direction for more business in 1991. Harry Schneider, in charge of Unix product marketing for the 100-staff, 290m DM-a-year distributor - which was showing SCO Unix, Informix, Uniplex, and Open Desktop at the Unix Forum - says a Berlin division is to be established in the second quarter with the aim of exploiting the new markets. Schneider admits that under-capitalisation and liquidity problems are endemic in the Eastern market at the moment - Western banks and venture capital funding have not been forthcoming - but ironically money has been coming in from better-off countries such as Czechoslovakia. Schneider wants to build up BSP's dealer network by around a fifth next year, and is anxious to get more connectivity products into the BSP range.

Last year, Digital Equipment GmbH set up a Berlin subsidiary to handle the ex-DDR market. Since then the operation has, claimed DEC representatives at the show, achieved satisfactory sales of its Unix-based RISC/Ultrix range, although growth has "stagnated slightly" in recent months - as a result of overall economic-political climate, argued the spokesman. DEC Germany has apparently agreed a strategy for the East in 1991 with the parent company, but wasn't prepared to give details other than saying it wants to extend its co-operation with the universities of Leipzig and Dresden on "project-specific" work, that it is interested in training-up and collaborating further with East German computer manufacturer VEB Kombinat Robotron, and that it intends to set up a proper operation in Dresden - where it presently just has a small office - to offer better support and services to the Eastern Lander.

OPG Organisations Partner GmbH, Bad Oldesloe, was showing its in-house-developed BISS software development environment, written in Cobol and running on Unix System V. The main advantage of BISS, reckons OPG software engineer Hans-Christian Werner, is that any BISS-developed Unix application is easily portable to any other Unix system. OPG has already had a few successes. BISS is used by the large Essen-based Krupp Lonrho transport group, and has been commissioned by the German Research Ministry. At the moment, BISS is available only in its original German version, but the plan is to offer a multi-language product in the not-too distant future.

PCS "may return" to UK

PCS Computer System GmbH made one of its first appearances in public after DEC took a 65% stake in the 64m DM, 320 staff, Munich company in December - it was previously 100%-owned by the Mannesmann group. According to Ulrich Langer, VAR sales director for North Germany, DEC wanted PCS experience in Unix System V, and Mannesmann decided it was no longer part of its strategy to rely on someone else's Unix machines. For PCS, Langer reckons that DEC's shareholding will mean "more internationalisation" for the supplier of the Cadmus 9000 range of Unix systems. Part of this internationalisation could be a return to the UK, where PCS had an unsuccessful and short-lived operation around five years ago. "It wasn't the right time then", says Langer, but goes on to hint that with DEC money behind it, now might be the time. PCS was demonstrating the graphics features of its Cadmus FX.1 Firebox, based on Intel Corp's Intel i860 RISC part and Unix V.4. The FX.1 was released about eighteen months ago but suffered from "compiler instability" problems, says Langer - problems he claims have now been fully sorted out.

Berlin-based Wolf Electronic und Messtechnik GmbH, part of the 20m DM a-year Wolf Group, was exhibiting its real-time Unix-based Wolf personnel administration system. Running under Santa Cruz Unix and DEC VMS, the Wolf system is linked to a number of remote clocking-in devices that send data to a constantly-updated Ingres database which can store details of up to 5,000 employees. Information on salaries, clock-in times, holiday allowances and the number of employees available on different shifts can be viewed in up to five different formats, and linked to a printer, the system will issue completed wage slips. In its first year, seven of the 35,000 DM systems have been sold in Germany - the aim now is to be able to offer it on other platforms.

TANDON INTO RISC STATIONS WITH SOLBOURNE OEM DEAL

Rather than design its own family of machines, Tandon Corp has decided to jump start its entry into the low-end Unix workstation market by buying Sparc RISC-based machines OEM from Matsushita Electric Industrial Co affiliate Solbourne Computer Inc. The agreement is still at the letter of intent stage, but will give Tandon the right to manufacture the machines under licence for its own distribution. Although still headquartered in Moorpark, California, Tandon is now a European company in all but domicile, doing about 85% of its business this side of the water, so the machines, starting with the low-end S4000, will be marketed first in the UK, France and Germany, with the launch at Hannover next week. However, the non-exclusive agreement does also cover the US and Pacific Rim.

RDI COMPUTER STARTS FILLING \$40m BACKLOG FOR BRITELITE

Big question marks always hang over companies that come from nowhere and announce products that feature a mass of innovations in one, but San Diego, California-based RDI Computer Corp has got over the first hurdle, announcing that it has begun filling backlogged orders worth over \$40m for its Sparc-based BriteLite workstations, which it characterises as the most powerful laptop computer available. It claims that the machine is at least three times as powerful as 80386-based laptops, doing 15.8 MIPS at 25MHz and offering compatibility with SunOS Unix, and software emulations of the Intel iAPX-86 environment and of the Apple Computer Inc Macintosh. The BriteLite emulator is claimed to run MS-DOS as fast as an 80286, and Macintosh software faster than the Macintosh SE, and runs the two environments concurrently using Sun Microsystems Inc's Open Windows. It has 640 by 480 resolution standard, 1,152 by 900 optional on a 12" LCD display; it weighs 13 lbs with 8Mb, 120Mb disk and battery.

SUN HAS NEW RELEASES OF NETWORK PRODUCTS

Sun Microsystems Inc has new releases of SunLink DNI and TE100, SunNet OSI and PC/NFS. The first two are the products for interoperability between Sun workstations and servers linked to DEC VAX/VMS systems. SunLink DNI 7.0 supports application, data and management-level interoperability between Sun and DECnet VAXes, and SunLink TE100 6.1 supports interactive access to systems that support VT100 terminals, so that users can access a VAX/VMS host in a window-based manner instead of having to use a terminal. The X11/NeWS Window System now enables users to access DEC Windows applications transparently, and a VMS mail gateway facility has been added. There are programmer interfaces that permit program-level interoperability - DECnet task-to-task interface and a file access interface. SunLink DNI 7.0 is bundled with SunLink TE100 6.1 and is \$1,400; SunLink TE100 6.1 separately is \$550, this month. SunNet OSI now supports international Open Systems Interconnection services and protocols such as US and UK Government OSI Profile, and SunNet X25 and MHS are also enhanced. The releases of PC-NFS and PC-NFS LifeLine Mailand Backup were accompanied by PC-NFS Advanced Telnet terminal emulation pack.

APPLE OUT AHEAD IN KEY LOOK-AND-FEEL DECISIONS

Federal judge Vaughn Walker, presiding over Apple Computer Inc's suit against Microsoft Corp and Hewlett-Packard Co, alleging infringement of its copyright in the look and feel of the Windows user interface, has dismissed claims that Apple's user interface is not original, and that it committed fraud on the US Copyright Office by failing to disclose prior art. The rulings are not conclusive in asserting the validity of Apple's copyright, but he says remaining issues will be settled in court. He also denied that the licence granted by Apple to Microsoft in 1985 gave the latter the right to use overlapping windows or some characteristic icon movements. In Hewlett-Packard's favour, he ruled that the latter was entitled to use some Apple displays licensed to it by Microsoft. In Microsoft's favour, the judge ruled that any copying must be proved feature by feature, and not, as Apple wanted, by considering the user interface as a whole. Microsoft claims that it can still win the suit before it comes to trial.

SET TO TAKE ON STARDENT, CONVEX, WITH LOW-COST i860 IMAGING SYSTEM

Sneak previews of one of those rare birds, an Intel i860-based workstation, can be had this week at CeBIT in Germany under non-disclosure. This particular rara avis, a multi-processor not scheduled to formally debut for another two months, comes from Set Technology, a fledging out of Boulder, Colorado. Set's architectural contribution is something called a heterogeneous multi-processing design, another way of saying they're not putting all their eggs in one basket. The i860 is not the CPU. They're using 80386 and 80486 chips for that. This gets them past the problem of no software for the i860 and gives them a hybrid product they're calling a Personal Workstation RISC PC. The company says the box, dubbed the Set Model D and still a prototype, can serve as a high performance personal computer or a Unix workstation with two to three times the performance of a Sun Sparcstation 1+. The machine will take up to five 80386 or 80486 processors and the i860 supposedly provides floating point capabilities as good as on an IBM RS/6000. Corollary Inc's CBus hooks the multiprocessors together. SCO's MPX operating system runs the thing and its Open Desktop software is providing the environment. It also has EISA/ISA, Ethernet, Appletalk and SCSI interfaces. Proprietary software, using Edsun Labs technology, reportedly supports screen resolutions of over 1280 x 1280 in addition to VGA, SuperVGA and 1024 x 768 on standard multisync and fixed frequency monitors. Set intends distributing its gear through Autodesk dealers and plans to fine-tune it for AutCAD. Set has also licensed AVS, a highly sophisticated two-dimensional, three-dimensional and volume rendering environment from Stardent Computer as the platform for its medical imaging applications. This is all pretty heady stuff and puts Set in the Convex or Stardent class. However, Set reckons prices charged for that kind of equipment are simply too high and aims to come in with a two-processor 25MHz-80386/33MHz-i860 configuration at \$5,000 and 33MHz-80486/33MHz-i860 job at \$7,000. Both machines will include 2MB of memory, expandable to 64MB, a 204MB drive, expandable to 1.3GB, a 3.5" and a 5.25" 1.44MB floppy.

NCR GOES TO TANDEM UNIT FOR DISK ARRAYS FOR SYSTEM 3000 UNIX LINE...

The belief is growing that the wave of the future in large capacity storage will be RAIDs, redundant arrays of inexpensive disks, capitalising on the fact that capacities of 5.25" Winchester are soaring and prices are being eroded, and NCR Corp has turned to one of the pioneers, Tandem Computers Inc's Array Technology Corp in Boulder, Colorado, giving the company an OEM contract to develop software and hardware storage systems to NCR specifications, using redundant arrays. NCR will integrate and sell the disk array systems on the high-end models of its System 3000 Unix system line.

...AS STORAGE TEK SIGNS SCEPTRE FOR UNIX TAPE LIBRARY AUTOMATION SOFTWARE

Storage Technology Corp signed Sceptre Corp to interface its REELlibrarian and REELbackup products to the StorageTek 4400 Automated Cartridge System via StorageTek's Unix-based Library Control System. It says the agreement facilitates the linking of most major Unix-based computer systems to the 4400 - until now, no Unix-based network tape management system connection to the 4400 has been available. The REELlibrarian tape management system and REELbackup file directory and disk backup programs will be out in the second half. No prices.

COMPAQ "TO WRAP UP AGREEMENTS WITH SILICON GRAPHICS BY MONTH-END"

Ahead of the ARCA announcement, see front page, Compaq will tie up its relationship with Silicon Graphics Inc, Mountain View, the *New York Times* believes. The paper hears that by the end of this month, Compaq will take a stake of less than 20% in Silicon Graphics, paying in cash and Compaq shares, and the latter may also put its entry systems division into a joint venture with Compaq. The two will agree joint development of a workstation around the MIPS R4000 chip. Compaq may also take a stake in Santa Cruz Operation Inc, which supplies Unix for its machines.

OMG MEMBERS ASSESS THE IMPACT OF THE HP-SUN SUBMISSION...

Hewlett-Packard's grandstand play to get its technology accepted by the Object Management Group, and its public and well-publicised embrace of Sun Microsystems, (UX No 323), has left some noses out of joint among fellow OMG members. Other companies submitting to OMG's Request for Proposal for an Object Request Broker, which HP and Sun answered together with a precedent-shattering partnership, are now discussing partnerships of their own to strengthen their hands. These talks are said to include both companies that met the February 25 OMG submission deadline and others. Sources from among these obviously biased firms claim the fanfare and publicity surrounding the HP/Sun submission makes life difficult for OMG. "It must decide whether it is a technology endorser or a standards group," said Joe Forgione, president of HyperDesk, one of the seven submitters. These same sources say there is now a party forming that would press OMG not to select any of the submissions at all, but rather comb through them for their common denominators which it could then bless as a common interface spec. The fact that HP on its own could not win OMG's endorsement is repeatedly reiterated (UX No 323). However, even with the inclusion (compliments of Sun) of another Remote Procedure Call (RPC) in HP's scheme, there are doubts HP can ram its distributed New Wave technology through. Some 20-odd companies sit on the technology task force charged with making a technical recommendation to OMG's 37-man technical committee. Many of the companies on both the task force and the technical committee are large hardware vendors who, it is suggested, may not be comfortable endorsing a competitor's product, especially when the source code is not in independent hands. Ironically enough, one of the companies now able to cast a vote is Microsoft, whose eleventh-hour decision to join the OMG (UX No 323) earned it the last slot possible on the technical committee. Microsoft, whose reported combination with Compaq and MIPS et al, (UX No 321), is a particular threat to Sun and HP, if not all Uniphiles, is perceived as a prime motivator for their alliance.

...AS OBJECT SPECIALISTS CONSTELLATION MISSES OUT ON OMG SUBMISSION

Constellation Software Inc, a year-old nine-man start-up located in Framingham, Massachusetts, would have liked to have submitted its object transfer technology to the the Object Management Group's Request for Procedure, and in fact did submit it in the early stages of the RFP, but was forced to withdraw when the OMG decided it would look only at total solutions, rather than components. Constellation says there was not enough leeway in OMG's hurried timetable for a company with limited resources to appraise the field and find a partner. Company president Jim Foy says Constellation might still be interested in teaming up with someone, but isn't going to initiate anything.

IBM SMARTS AS THIRD PARTIES UNDERCUT PRICES ON RS/6000 DISKS AND MEMORY

Is IBM prepared for the swarms of third parties that will be gathering around the lucrative IBM RS/6000, selling their memory and peripherals at greatly reduced prices compared with IBM's own? Whereas System 36 and System 38 users never had a history of buying large parts of the system from third parties, it's a way of life in the Unix world, and that means considerably less profits for IBM. This week comes news of two companies offering cut-price memory for the RS/6000. Cambex Corp, Waltham, Massachusetts, has launched the Certainty 6500 Series of low-cost memory in 16Mb and 32Mb increments for the IBM RS/6000 models 320, 520, 530, 730 and 930, at prices up to 50% below IBM list prices. Users can upgrade their memory boards themselves or have Cambex do a factory upgrade. Do-it-yourself costs \$3,650 for 16Mb, or it's \$4,550 if the work is done by Cambex. And the company also has a low-cost family of SCSI disk subsystems, the Certainty 6200 Series, with disk capacities in increments of 330Mb, 670Mb and 1Gb, which can be connected to the standard IBM RS/6000 SCSI attachment cards, and used in conjunction with IBM external disk and tape models, or Cambex 525Mb quarter-inch tape drives. Prices start at \$5,100 for the 330Mb model, up to \$7,800 for the 670Mb and \$9,750 for the 1Gb model. Meanwhile, Meltek Data Ltd of Feltham, Middlesex in the UK, has also launched add-in memory expansion modules of 16, 32 and 64Mb for the RS/6000. Called the CR6000 family, they can be used to expand memory on a RS/600 Model 320 to 64Mb, the 520, 530, 730 and 930 to 128Mb, the 540 to 256Mb, and the 550 to 512Mb. The boards are sourced from an Australian company called Castle Rock. Meltek, which also has offices in the US and Germany, also plans to offer disks and tapes. Prices start from £1,650 for the 16Mb kit up to £3,200 for the 32Mb and £6,075 for the 64Mb kit. Others waiting in the wings to target the RS/6000 are Parity Systems, Sunnyvale CA, and Clearpoint Inc, Hopkinton, Massachusetts.

FERRARI RUNS OUT OF ROAD

Ferrari Holdings Plc has asked its bankers Lloyds Bank Plc to appoint an administrative receiver for the company. Ferrari's directors say that bankers and shareholders have been unwilling to provide the necessary debt or equity finance the company needed to survive. Ferrari's current financial difficulties are being blamed on transactions associated with the acquisition of UCL Plc, the 30% stake taken in Telecomputing Plc, the acquisition of Pericom Plc and the subsequent reorganisation of the Ferrari Group. All actions are taken under the guidance of Singer & Friedlander. Receivers from Arthur Andersen & Co hope to sell it as a going concern. Last month Ferrari signed a 1.5m distribution deal with Sun Microsystems.

AUSPEX UPGRADES ITS NFS SERVERS TO THE SPARC

File server manufacturer Auspex Inc of Santa Clara, California, has lived up to its promise of progressing to Sparc-based NFS servers, (UX No 291), with the launch of the NS 3000 and NS 5000, along with board upgrades for its existing 68020-based machines. According to Auspex, the servers can support up to five times as many NFS clients as Sun's own Sparcserver 490. The secret is the Auspex Functional Multi-Processor architecture, separating the network, file and disk management functions from the control of the CPU onto specialised processors. Using the Sparc over the 68020 gives Auspex full compatibility with Sparc-based workstations, and speeds up the performance of utilities such as FSCK and Name Information Services (previously Yellow Pages - UX No 274). Auspex uses a 20MHz Sparc rated at 12.5 MIPS and 1.4 MFLOPS, with 64Kb on-board cache. Base models have 20Mb memory, expandable to 68Mb, memory management unit, SCSI bus interface and two serial ports. The NS 5000 supports 200 dataless or 100 diskless clients, each with heavy NFS workloads, on up to eight Ethernets. Maximum storage is 60 Gb. The machines go on beta-test this month, with first shipments in May. Prices are \$10,000 more than the Motorola-based versions, starting at \$99,900 for the NS 3000 and \$124,900 for the NS 5000. Four-year old Auspex, a privately-held company that has been funded to the tune of \$20m, launched its first machines back in October 1989 (UX No 252).

INGRES ADDS INGRES/VISION ON-SCREEN CODE GENERATOR

The Ingres Products Division of Ask Computer Systems Inc, based in Alameda, California has introduced Ingres/Vision, claiming it to be the industry's first terminal-based application development tool to bring the full power of fourth-generation language technology to bear on the automatic generation of production-quality applications. The application code generator is claimed to generate high-level code automatically to enable terminal-based programmers to develop business applications. The key elements are the Frame Flow Diagram, which enables the user to create the application structure visually by specifying the frames to be used within the application, and the Visual Query Editor, used for defining the data to be accessed and the operations that will be made available within a given frame; Ingres/Vision then uses the specifications to produce the finished code. New customers can buy Ingres/Vision Pro for 60% of the Ingres base price, it says.

XYLOGICS HAS ANNEX THREE, BAGS A \$60M OEM DEAL FOR THE PRODUCT WITH NCR

Burlington, Massachusetts-based Xylogics Inc appears to be laughing all the way to the bank since it acquired the NS32016-based Annex server product line from Encore. Last year Xylogics bagged its biggest ever OEM deal via Annex, signing a five year \$50m deal with Unisys Corp; now it has announced the Annex three, which NCR Corp is going to put into its new Intel-based System 3000 Unix computers as part of an OEM contract worth \$60m over the next three years. The Annex three is apparently a terminal server writ large: Xylogics claims it reduces the difficulty and expense of hard-wiring terminals, modems, printers and remote personal computers directly to Unix and Digital VAX/VMS host computers by packaging multiple serial ports in a single "intelligent" box. In addition, the flexible architecture of the Annex three gives Xylogics a versatile system for adding new communication technologies in the future. It also provides low-cost networking by offering from eight to 64 serial ports for just over \$100 per port. Until now, Xylogics believes that the lowest priced terminal server cost \$134 per port for an equivalent configuration. While it is designed specifically for Unix computers, the Annex three also connects users to Digital Equipment VAX/VMS systems and other TCP/IP and LAT computers. Unix computer manufacturers use Annex three to enable them to reduce machine size and wiring complexities as well as conserving expensive bus slots. Xylogics is the exclusive provider of communications servers to such Unix-based suppliers as Intergraph Corp, Unisys and Concurrent Computer Corp. The Annex three features a compact 3.5" design that can either be rack-mounted or used in a standard office environment. Annex three communications servers are available immediately with prices ranging from \$4,000 for an 8-port server to \$7,000 for a 64-port Annex.

GLOCKENSPIEL, INMOS OFFER C++ VERSION 2 FOR THE TRANSPUTER

Transputer developer Inmos Ltd and Dublin, Ireland-based C++ compiler specialist Glockenspiel Ltd have announced the availability of Glockenspiel C++ Version 2 for the Transputer on hosts including MS-DOS micros, Sun 3, Sun 4 and VAX/VMS. According to Glockenspiel, which participates in the ANSI X3J16 committee, its version of the object-oriented C++ is now available on 40 development environments including Sun, DEC, MIPS and IBM RS/6000. Two compilers make up the Glockenspiel C++ products - one integrates with the Inmos ANSI C compiler to generate programs for Transputer networks, the other generating native host programs by integrating with the native C compilers on Sun and VMS, and with Microsoft C 6.0 and the Programmer's Workbench on MS-DOS. Glockenspiel C++ Version 2 will be available through Inmos' distribution network, as well as from Glockenspiel.

OSF PLANS BIG SPLASH FOR DISTRIBUTED COMPUTING TECHNOLOGY AT CeBIT

One of the major open systems events at the CeBIT Hannover Fair this year looks set to be the Open Software Foundation's first large scale demonstration of multi-vendor systems cooperating together in a single distributed environment. With what could turn out to be up to a two year lead over rival consortium Unix International and AT&T's Unix System Labs, OSF is hoping its DCE environment will take off in the same way as its OSF/Motif graphical user interface. Early versions of DCE are now shipping, with full commercial availability promised for the third quarter of the year. At CeBIT, systems from OSF members Groupe Bull, Siemens-Nixdorf, DEC, HP and IBM, each running DCE, will be connected to data from the New York Stock Exchange. The idea is for DCE to consolidate the processing power of all the systems on the network, allowing each system to act as either client or server, retrieving and processing stock market information for display in real-time on each workstation. DCE has been endorsed by over 70 organisations, including universities, database companies and most hardware manufacturers, as well as users such as Nippon Telephone & Telegraph, the European Commission, Unilever and Barclays Bank. DCE works by subdividing applications into smaller sections and assigning the sections to the first suitable and available computer on the network. It includes the NCS remote procedure call, naming services, threads, time services and a distributed file system. DCE technology manager Ram Kumar said the distribution of both computers and data at the demo would show customers the strategic role computing can have in a business.

ORACLE CONFIRMS IT IS LOOKING FOR NEW FINANCE, BUT REJECTS LINKS WITH HARDWARE FIRMS

Following the revelation that the fiercely independent database company Oracle Corp was seeking an equity investor, (UX No 322), a few more details have come to light. Mike Musson, director of investor relations with Oracle has confirmed that the company is looking for alternative sources of financing, but he declined to comment as to whether the company was currently in negotiations with an outside investor. All that the company is prepared to say is that it will never enter an equity agreement with a hardware vendor and that it is not negotiating with Fujitsu Ltd. However, Oracle wants to be aggressive in the Japanese market, where it believes there are enormous opportunities and it is looking to establish a marketing partnership with a Japanese company with established distribution organisations. Of course Oracle does not want to partner a Japanese hardware vendor - perish the thought of having to change a lifetime's marketing strategy. Consequently, Musson says that the company is looking for a Japanese company in a related industry, such as consumer electronics, which would sell to the same types of customer as Oracle. Musson admitted that there may be a possibility that such a Japanese company might take some equity, although he added that the impetus for the Japanese partnership is not equity. But then again Oracle is not closing off any options. At the moment Oracle is renegotiating its line of credit with its banking syndicate. The sticking point at present, according to Musson, is that the banks want to secure the credit against accounts receivable while Oracle wants it secured against revenues. The whole matter should be settled by the end of March, leaving Oracle with "adequate" credit. One thing Musson is clear about is that Oracle has no plans to sell off any part of the company - and that includes the rather unstable systems integration arm.

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Following our story last week, (UX No 323) Barclay's press office issued a statement: "Barclays is looking at open systems and evaluating various suppliers' equipment, eg: IBM, DEC, as part of this process, but no decision has yet been made on systems or equipment and therefore any information to the contrary is incorrect."

IBM has set this Tuesday, March 12 for the announcement of additions to the RS/6000 range of Unix workstations: no intelligence on what the company has up its sleeve yet, but it could be too early for the highly integrated low-end "RS/5000" models, so it may primarily involve a faster version of the chip set - currently 25MHz and 20MHz versions are used, so a move to a 33MHz clock would give a useful boost: a new colour X-terminal, and, with the involvement of Network Systems, a Hyperchannel link for the RS/6000 to CAD/CAM databases on MVS mainframes could also be on the cards.

And Computer Reseller News followed-up its story on the "RS/5000" low-end VLSI version of IBM's Unix RISC machine, (UX No 322), by saying that unlike the existing RS/6000s, which are built to order, the low-end ones are going to be built for stock. It hears they will go out via National Distribution Division volume dealer outlets as well as via the direct sales force, which presently has to bid combinations of RS/6000s and PS/2s in big networks.

AT&T Co's problem, having made its bid for NCR Corp, is that it has burned its boats behind it: if the bid were to fail, it would be left with an AT&T Computer Systems in a fatally weakened state, with staff demoralised by the prospect of NCR free to dump whatever it doesn't want from the business. Things have got so bad that the company is having to offer bonuses to employees that stay for the next six months.

Must be getting really embarrassing for those NCR Corp shareholders that according to the Wall Street Journal are just dying to take AT&T Co's \$90 a share cash - presumably on the grounds that anything more would be greedy - the NCR share price at end of last week was up at \$96.125 after NCR decided to increase the permitted size of its board to 20 members so that the four likely to be bounced by AT&T's motion could be co-opted straight back again: the price is signalling clearly that AT&T is going to have to pay significantly more to win.

Unisys Corp has won a \$42m subcontract for several 2200/600 mainframes and U6000 Unix machines from Martin Marietta Corp in connection with Marietta's monster \$526m multi-year US Department of Housing & Urban Development Integrated Information Processing Services pact.

Unify Corp, Oracle Corp, Bull HN Information Systems Ltd, Cogitaire Ltd, and possibly Ferranti International Plc, are uniting to bid for a contract estimated to be worth in excess of \$100m for the replacement of security systems in Kuwait. If the bid is accepted, security systems specialist Cogitaire Ltd will write applications for Oracle's database using Unify's Accell SQL generator to run on Bull DPX Unix kit. Systems to be replaced include those for airport security, crime reporting, border observation, and military security.

The ARCA consortium leaves market leader Sun Microsystems Inc's Scott McNealy quite unmoved: in the workstation business, he told the Wall Street Journal, "those who can do do, those who can't do form consortia".

Despite posting a \$5.7m loss in 1990, cutting its US workforce by 35% and removing a third of its products from its current catalogue - eliminating its low and mid-range EDSI subsystems - Dilog, Anaheim, California, says it is going ahead with development of an NFS file server in conjunction with Purdue University.

DEC says it will open a full subsidiary in Prague, Czechoslovakia by June and that it has already signed agreements for marketing with three Czech companies - Kancelarske Stroje in Prague, Datasystem-SOFT in Bratislava, and VUVT in Zilina.

In the wake of complaints from other publishers about Interactive's status as "principal publisher" of SVR4 for Intel systems, (UX No 322), Unix System Labs is trying to figure out some way to accommodate everybody while holding the smaller companies like Esix, Microport and UHC to some kind of criteria of support, volume and commitment.

Vmark Software will be selling UniVerse licenses for MIPS hardware through its distributors: Vmark says it can access 3,000 Pick programs through UniVerse.

Unisys is starting to show the strain: Cyril Yansouni, the high-profile head of its computer Systems Product Group, has quit suddenly, citing Unisys' "contraction mode," to go to Read-Rite, a thin-film head maker, as president and CEO.

International distributor Merisel, the merged Microamerica/Softsel operation, has picked up Uniplex to distribute to its VAR network.

Byfleet, Surrey-based Specialix Ltd's range of intelligent input/output boards are to be distributed throughout the Benelux countries by Paris-based Top Log.

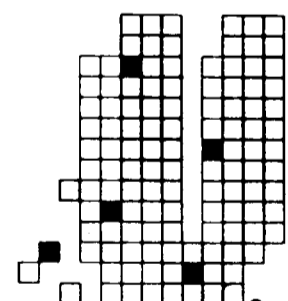
Newcomer N/Hance systems, headquartered in Massachusetts, has brought out WOFS optical integration software for Sun Sparcstations that reportedly lets Sun and MS-DOS machines physically exchange data stored on their respective optical cartridges: list price starts at \$2,000.

LSI Logic is now admitting it's two quarters behind on Lightning, its long-awaited super-scalar implementation of its Sparc microprocessor. Testing problems are responsible. The chip was supposed to be sampled in the second quarter but now the company is hoping for internal samples in the fourth. The chip, a co-development with Hyundai and Metaflow, is supposed to deliver a sustained 80 VAX MIPS and a peak rate of over 160 MIPS.

DEC will be showing the OSF/1 operating system it launched two weeks back (UX No 323) at CeBIT in Hannover this week, and IXI Ltd will be there to show its X.desktop running on the operating system. The object code was apparently moved directly over to OSF/1 with no need for recompilation, as X.desktop, OSF/1 and Ultrix are all Posix compliant.

Groupe Bull is planning a major announcement at CeBIT, where it plans to unveil a distributed computing model and roadmap to plot out its strategy over the next few years. Bull, a member of the Open Software Foundation, uses MS-DOS, OS/2 and Unix in its current hardware ranges, and is expected to field the Open Software Foundation's DCE as the basis of its technology.

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Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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KBN
18 MAR 1991

The weekly information newsletter for the UNIX ® community worldwide

London, March 18-22 1991

Number 325

IBM GOES NATIVE WITH MAINFRAME UNIX - PUTS OSF/1 ON THE ES/9000

As we revealed back in November, (UX No 307), IBM put its mainframe System/390 architecture high up on the list of its priorities for implementing the Open Software Foundation's OSF/1 operating system - and at Hannover IBM is showing a working version of the system running on an ES/9000. Although IBM described the native port - its first native implementation of Unix on mainframe architectures - as a "technological direction" demonstration rather than a product announcement, an IBM spokesman admitted that there had already been widespread interest from customers, particularly in Italy, Spain and Greece, Eastern Europe and Scandinavia, where traditional IBM programmers and support staff are in short supply. IBM says the OSF/1 port, which will run only on Enterprise architecture mainframes and not older models, will be made both Posix and X/Open XPG/3 compliant, and will retain application binary and source compatibility with AIX/370. It will include support for TCP/IP 4.3, NFS 4.0, X-Window 11.4, Motif 1.1, and the OSF Distributed Computing Environment, which will provide similar functionality to IBM's own Transparent Computing Facility, used with AIX/370. IBM is also adding suitable support for vectors, multi-processing, and high performance mainframe peripherals. IBM maintains that the issue of native versus hosted Unix on a mainframe is not performance related, with a loss of only 4% to 6% for hosted Unix, compared to native MVS, something which is made up for by superior scheduling facilities on the hosted version.

...AS DCE APPEARS UNDER OS/2

IBM also showed the Open Software Foundation's DCE distributed computing environment running on an OS/2-based server at Hannover, amidst increasing rumours that Microsoft Corp is "strongly considering" DCE as the basis for its future distributed computing strategy.

DATA GENERAL CLAIMS COMMERCIAL UNIX LEAD WITH FOUR-CPU AVIIION

Data General purposely kept a safe distance between the computer industry circus up at Hannover and the European venue for the launch of its quad-processor Motorola 88000-based systems in Brussels last week. A four-processor board, running 25MHz 88100 parts and 88204 cache memory management units, delivering 117 MIPS and a Specthruput of 50, is the guts of two new additions to its AViiON range of Unix workstations and servers, the AV 7000 and AV 8000 which will run DG/UX 5.4, Data General's secure, symmetric multi-processing implementation of Unix V.4. In addition the Westboro, Massachusetts minimaker has plumped for RAID - Redundant Array of Inexpensive Disk - technology to provide a mass storage capability across the range. The AV 7000 comes with from 64Mb to 512Mb RAM, 1Gb disk and 8 VME slots, the AV 8000 goes to 768Mb RAM, 1Gb disk, and comes with 18 slots - both have Ethernet. Available now, prices go from £90,768 to £166,320. Existing AV 5000 and AV 6000 systems will now also be offered with the quad processor board - upgrades are available. DG/UX 5.4, which has C2 and B1 US Government security tags, will run Unix V.4, V.3 and BSD applications, is XPG3 compatible, comes with X-Windows, Motif and is out in June. Data General's High Availability Disk Array - HADA - RAID subsystem comes with from 4Gb to 24Gb memory - two can be attached to AV 6000 and AV 8000 systems, prices go from £42,775 to £195,025, ships start in June. A smaller storage subsystem was also unveiled - with from 4Gb to 12Gb disk, prices go from £34,800 to £92,800. President Ron Skates said the boxes will give his company "commercial Unix leadership" - the two year-old AViiON family now comprises 13 servers and 7 workstations. A board with more than four processors is also likely - Data General's vice president of AViiON systems development, Janpieter Scheerder, said "we have the technology in hand" - whilst another spokesman revealed that the firm will be taking delivery of first samples of Motorola's next generation RISC part, the 88110, in the near future - products are expected within a year. Motorola is currently thought to have seven 88000 processor-level products under development - one of them the successor to the 88110, which is reckoned to be four times more powerful than its as yet unannounced predecessor. Data General says it sold 11 of the machines ahead of launch. Analysts were surprised at the price-performance, which came out even keener than they'd expected.

A DOZEN FIRMS TAKE STAKES IN UNIX SYSTEM LABS

AT&T has found buyers for between 20% and 30% of Unix System Laboratories, its wholly owned subsidiary and the owner of the Unix operating system, USL president Larry Dooling told Unigram last week. Dooling declined to specify the exact percentage AT&T is spinning off until the money changes hands at the end of the month. The deal is expected to fetch between \$65m and \$97.5m based on a total valuation of the company at \$325m, (UX No 318). Dooling said 12 or 13 companies, European, domestic and Far Eastern, are buying into USL. He would not identify them, again until the deal is consummated, nor could he say with any precision exactly how many co-owners there would be because some foreign government approvals were still lacking. When the roster finally does become public, Dooling said, USL will not divulge the amount of ownership each company has purchased. AT&T, however, put a cap on how much any single outside company could hold, restricting it to a maximum of 4.8% (UX No 318). Fujitsu, NEC, Toshiba, ICL, Amdahl and Unisys have been previously identified as six likely investors, (UX No 314).

ORACLE LAUNCHES PARALLEL SERVER FOR MULTI-PROCESSORS

Oracle Corp last week announced Oracle Parallel Server to support multi-processor systems such as DEC VAXclusters, as well as Pyramid Technology Corp and Sequent Computer Systems multiprocessor machines. In its first guise Oracle Parallel Server, introduced as a new version of the Oracle relational database - V6.2 - performs at a claimed 425.7 transactions per second on a four-VAX VAXcluster - a cost of \$18,307 per transaction. Pyramid and Sequent implementations will follow soon, with nCUBE Inc, Parsys Ltd and Meiko World also committing to the technology. The server architecture is thought to be running on nCUBE's massively parallel 2 Scalar Supercomputer system - Oracle announced in June 1989 that it was working on a version of its database for the machine, but that is very late: at the time of the announcement, it was talking of early 1990, (UX No 231).

SUN AGREES JOINT MARKETING OF STAR SPARC MINISUPER...

Sun Microsystems Inc has now agreed to the joint marketing of its products with Star Technologies Inc's Sparc+Texas Instruments 8847 vector processor-based Star 910/VP minisupercomputer server launched last June, (UX No 288). Sun says that the combination of Sun workstations and servers with Star's servers on a network is a cost-effective offering for high-performance segments of the scientific and engineering markets. Sun and Star will participate in joint marketing and sales activities, including joint sales calls, seminars and other promotional efforts. It is not clear whether Sun has dropped its own minisuper plans.

...IS POISED TO FIND NEW MARKETS WITH ARROW COMPUTER DISTRIBUTION DEAL

Sun Microsystems is currently in the throes of trying to sign Arrow Electronics to distribute its kit to VARs who already sell competitive equipment from Altos, NCR, Unisys and AT&T. The deal, if it goes through, would be announced in the next few weeks with Arrow's Computer Systems Group which services perhaps a couple of thousand resellers. Sun is believed to be after only a couple of hundred of those - VARs with solid commercial applications that would be ported over to SunOS. The deal, which would bring Sun into new channels of distribution, is believed to be regarded as merely incremental business to Sun, worth maybe \$20m to \$30m a year despite its aggressive anti-competitive veneer. It would also doubtless take months before the first VARs moved their software over. Some months ago, Sun delegated distributor Access Graphics to handle its smaller technical VARs. A companion deal for commercial VARs was in the works with Tech Data but failed to materialise. Arrow is now the replacement for Tech Data and as a matter of fact Access Graphics will now be fulfilling many of Sun's commercial accounts. Sun also started into dealer channels when the IPC was brought out and according to Sun Microage now has between 25 and 30 sites reselling Sparcs with the expectation of going to 40-50 in the next three months, and Intelligent Electronics, currently with 30-40 stores dealing in Suns, should go to 60 by June.

NCR UNIMPRESSED BY AT&T TALK OF RAISING BID TO \$100 A SHARE

NCR Corp gave AT&T Co a dusty answer to its Sunday night statement that it was prepared to raise its offer for NCR to \$100 a share, or \$6,800m on condition that NCR enter negotiations. "They should deal directly with us and submit a serious proposal in writing rather than posturing in the media" said NCR chairman Charles Exley, adding that AT&T wanted to pay NCR shareholders as little as possible for their shares. AT&T reverted to its \$90 a share offer, but its move effectively puts a floor of \$100 under any bid now - and the shares closed on Friday at \$98.25. It is assumed that AT&T will succeed in getting four seats on the board at the annual meeting, and even if NCR raises the size of the board to 20 after the meeting, all the co-opted members will have to submit to re-election next year, so that A&T could then gain control.

VXM LAUNCHES BALANS FOR NETWORK MANAGEMENT

Massachusetts-based VXM Technologies last week announced Balans, a second-generation load-balancing software that is supposed to automatically allocate and administer networked systems resources for running various types of distributed processes. Balans, which is to ship in the third quarter and sell through OEMs and dealer channels, uses the HP/Apollo NCS. A Sun ONC version is also in the works. Company president, Franco Vitaliano, said the software can interoperate with either Sun ONC, NCS or OSF's DCE. Balans runs over TCP/IP networks and will eventually be available for VMS, MVS and most Unix systems starting with MIPS, DEC MIPS and Sparc architectures. Vitaliano said Balans users will not have to modify existing applications, configuration files or operating systems. It also provides internal RPC support covering the competing and incompatible interoperability between their different naming and location services. Vitaliano claimed Balans far and away surpasses Hewlett-Packard's Task Broker which oddly enough does not use NCS, has no C language API or intrinsic RPC support and is not dynamic. Balans will be priced from between \$6,000 for a starter system to \$35,000 for a 200-node network. Developers' toolkits are \$3,500 with media and documentation another \$300.

JAPANESE MIPS LICENSEES NEC, TOSHIBA WAIT IN THE WINGS

Assiduous industry watchers will have noticed the dog that didn't bark - or hasn't barked so far - in all the talk of the Microsoft-Compaq-MIPS workstation standard consortium, and that dog is Japan Inc. NEC Corp is the main licensee of the MIPS RISC design in Japan, and is unlikely to want to be left out of any major new workstation initiative, especially as such a development could pose a threat to its market-dominating PC-9800 personal computers in Japan. But Toshiba Corp, carefully planting a foot in each of the two leading RISC camps, is a licensee of the MIPS architecture as well as being a major reseller of Sun Microsystems Inc workstations, and uses Sparc chips in its first Unix laptop. Toshiba will reportedly announce the first fruits of its design licence agreement with MIPS in the form of its own RISC chip this spring. Toshiba, an Architecture Licensee for the MIPS part, has not denied that there was a relationship with MIPS, but said the report had resulted from questions asked by a Japanese reporter, and was not an official announcement of a new product. MIPS similarly had little comment on the report, aside from saying that Toshiba had been an original foundry for MIPS itself, and it held Toshiba's CMOS semiconductor process technology in extremely high regard. Toshiba gives the impression of trying to hedge all its bets, because it also has a long-standing relationship with Motorola Inc, and the two companies recently began producing Motorola 68000 chips at their joint venture plant Tohoku Semiconductor in Northern Japan - but without a lot of blandishment from Motorola, it seems unlikely that Toshiba will put any muscle behind Motorola's contender in the RISC stakes, the 88000.

BULL UNVEILS ITS DISTRIBUTED VISION FOR THE FUTURE

Ravaged Groupe Bull SA, staring gigantic losses for 1990 in the face, is betting its future on what it is calling its Distributed Computing Model, first outlines of which were unveiled at Hannover last week. The Model is said to comprise the specifications for open enterprise-wide business computing systems and a roadmap way to Enterprise Computing by 1995. It is claimed to define structures, protocols and interfaces, and it is being demonstrated at Hannover, where technology partners like Microsoft Corp, Oracle Corp and Ingres Corp are endorsing it. Despite Bull's assertion that it provides details and specifications, it is still largely conceptual, focusing on the ends rather than the means. Based on the Open Software Foundation's Distributed Computing Environment, the Model's components are Applications; Application Services; Communication and System Services; Integrated System Management and Security; and Application Development. The model is to be implemented in three phases, and the first is Workgroup Computing, to be introduced during 1991, where workgroups throughout an organisation will be connected to a mainframe, Bull or otherwise. The second phase, scheduled for 1992, is Distributed Departmental Computing. Products to be made available next year are claimed to add new functionality to distributed Unix-based systems, extending the infrastructure of workgroups and including Open Software Foundation Distributed Computing Environment technologies. Bull says that phase three, 1993 to 1994, is the timeframe for extending capabilities and applications for the distributed information system. Bull says there will be interoperability between GCOS 6, GCOS 7 and GCOS 8, Unix kit and multi-vendor workstations.

DEC MULLS DOING A VERSION OF ITS OSF/1 UNIX FOR SPARC RISC MACHINES

DEC is apparently working up a plan to offer its implementation of the Unix-derived OSF/1 operating system to run on machines built around Sun Microsystems Inc's Sparc RISC as well as on its own MIPS Computer Systems Inc RISC-based DECstations and servers. DEC's aim would be to end the situation where Unix System V.4 and the Sparc are synonymous, and offer Sun customers the prospect that applications developed on Sparc machines under OSF/1 could be transferred to DEC's own machines, Electronic News suggests. DEC already offers the Foundation's Motif user interface on Sun machines, but DEC says that any decision to do a version of OSF/1 for the Sparc will only be taken at the end of this year - its top priority now is to get it working on its own machines.

JUNE DEBUT FOR i860 OKISTATION

Okidata is slowly getting it together to formally launch its Intel i860 box, the 45 MIPS Okistation 7300, previewed in the US back in October at Unix Solutions (UX No 302). The Japanese company, which has little experience of the States as far as computers go, has set up a new sales and marketing arm in Framingham, Massachusetts, called Okidata Microsystems Division to push the box out to OEMS and VARS. Reportedly the unit, which got started in January and is now 12-strong, was delayed by the Gulf war and Oki's dictum of no executive travel which prevented the division's American managers from liaising with their Japanese masters. Current plans call for a June launch and immediate availability of the system which has reportedly grown from a single prototype to a series of four or five machines. Supposedly entry-level 33MHz and 40MHz systems will be deliverable in June as well as something the division is calling a mid-range machine. The 7300, unlike the Set box, (UX No 324), uses the i860 as the CPU.

SIEMENS WINS OUT IN SNI HARDWARE RATIONALISATION -

PYRAMID, MOTOROLA LINES DROPPED...

Siemens users appear to have the better deal in the long-awaited rationalisation of the two hardware lines of Siemens and Nixdorf, following the merger last year that created Siemens Nixdorf Informationssysteme AG (UX No 265). At Hannover, the company revealed that it would be dropping the top-end Targon/35 line based on Pyramid hardware, and banishing the Motorola-based Targon/31 line to a non-strategic role. In future, SNI will base its open systems strategy on a two-pronged CISC and RISC product line using Intel and MIPS-based hardware, using standard components for casing and peripherals. The move marks the end of Siemens' National-Semiconductor-based multi-processors, the last to be based on Sequent's Balance hardware range. They will be replaced by Intel-based Sequent Symmetry hardware at the top-end, (see below), and Siemens MX micros and WX workstations. To facilitate software availability, Siemens has defined a common applications programming interface that will run on the two ranges, supporting all the important system software interfaces such as Unix commands, programming languages and tools, user interface, (OSF/Motif and X-Windows), communications, (OSI and TCP/IP), data dictionary, database and spool system. These will also be supported on existing Nat-Semi-based machines. Users of the proprietary Nixdorf 8870/Quattro systems will also be encouraged to make the switch to Unix, using cross basic software functions and existing terminal, network and peripheral interfaces between the two lines. In the short term, the Quattro line will be supplemented with a more powerful "P" model with updated NIROS operating system.

...ADDS MX500 80486

MULTI-PROCESSOR, 68040 TARGON /31E

And SNI introduced a top of the range MX500 multiprocessor at Hannover, based on Sequent's latest Symmetry 2000 80486-based multiprocessor (UX No 318). The seven processor model, rated at 105 MIPS, doubles the performance of the previous top-end MX-500, with disk storage capacity up to 36 Gbytes. The machine runs Unix System V.4, despite SNI's sponsorship of the Open Software Foundation, with SNI saying that it will look again at the OSF offering when OSF/2 is launched. The MX500 Model 90 will be available in October, no prices given. Upgrades for the Nat-Semi 32532-based Model 75 multi-processors will also be available, with software transfer by straightforward recompile, according to SNI, as both machines are X/Open XPG3 compliant. The new MX500 has also been submitted for XPG3 Plus compliance. And the Targon /31 line got a final performance kick with the introduction of a 68040-based range, the Targon /31 E, which boosts its performance range from 5.5 to 20 VAX Mips. These include the Model M25 uniprocessor and Model M55 uniprocessor or dual processor. Again, upgrades for the current 68030-based Models 15 and 45 Targons will be provided.

STRATUS i860 FAULT-TOLERANT RISC SYSTEMS EXPECTED THIS TUESDAY

This Tuesday Stratus Computer Inc will unveil the first RISC-based fault tolerant systems in its FTX range: they are built around Intel Corp's i860 processor which Stratus committed to back in April 1989 after jumping track from the Motorola 88000 bandwagon, (UX No 224).

ADAPTIVE CLAIMS 1,000-FOLD SPEED HIKE FOR ITS NEURAL NET

Neural networks are beginning to crawl out of the lab and into commercial applications, and Beaverton, Oregon-based Adaptive Solutions Inc is hoping its new CNAPS System, the first system based on its Connected Network of Adaptive ProcessorS neurocomputing architecture will give the process a big push forward. The company claims that its new neurocomputer will speed learning in neural networks 1,000-fold, so that even compared with a Cray 2 supercomputer, the CNAPS System executes industry-standard back propagation algorithms more than 100 times faster. The company sees the system being used in pattern recognition problems in optical character recognition, machine vision, speech recognition, robotics and process control and financial forecasting. The CNAPS System consists of a CNAPS server, which is a neurocomputer for use on a Unix network and designed to provide the speed required for both training and execution of real-world applications, and CodeNet, a software development environment. Mitsubishi Electric Corp and Sharp Corp are already using the architecture for Kanji character recognition. The N64000 chip is being fabricated by Inova Microelectronics Inc. The CNAPS server has 256 processor nodes operating in single instruction multiple data mode which have broadcast interconnection, and is designed to be linked via Ethernet to a Sun Microsystems Inc Sparcstation. The company claims that the CNAPS server will run in learning mode at more than 1,000m connection updates per second so that it can train the NetTalk text-to-speech processing network in six seconds, compared with over four hours on a Sparc-based workstation. Peak performance in feed forward execution mode is claimed to be 5,120m connections per second. The CodeNet suite includes the CNAPS Programming Language parallel assembler, CNTool graphical interface and debugger, and a library of common neural network algorithms. CNTool includes interactive and batch user interfaces and a C library Application Program Interface for access in an embedded application. The algorithm library includes Back Propagation, Learning Vector Quantisation, Self Organised Mapping and Frequency Sensitive Competitive Learning. The CNAPS-C C compiler designed for the CNAPS architecture is also planned. The complete system will be \$55,000 from the fourth quarter; C will cost \$950.

MAINTENANCE COMPANY MONTAL MOVES INTO UNIX DISTRIBUTION VIA LANDMARK SYSTEMS

In the UK, a new company called Landmark Systems Ltd is to distribute Motorola Inc's range of Unix-based systems. Landmark is a wholly-owned subsidiary of Montal Computer Services Ltd, a six-year old maintenance and third party support company that specialises in Unix multi-user systems. Peter Alexander, Landmark's marketing director and co-founder of Montal, says that it will handle all sales and marketing activities, but will draw on Montal's maintenance and service expertise. Landmark will also supply a range of software packages, including Informix, Oracle and Uniplex, and Cincom Systems Inc has announced that its Supra database will be available for the Series 8000 from Landmark. Alexander says that Cincom will act as an agency, and he intends to build up a number of similar relationships and strategic alliances. The company is planning to reach around £3m in revenue over the next year, and Alexander hopes to establish a base in mainland Europe within that time, possibly as a joint operation between Landmark and Montal. Landmark is one of only four Motorola master distributors in the UK, the others being Hawk Systems Ltd, CST Ltd and Logitek Plc. A Motorola spokesman acknowledged that Logitek made little headway for a considerable period, but says that was due to directing the Series 8000s through its Microtex channel, acquired 18 months ago and better known for shifting boxes. Logitek is now distributing the Delta Series 8000 through its Advanced Systems division, and Motorola says that it has been more successful in the past few months as a result of the changeover.

MOTOROLA ADDS REAL-TIME MANUFACTURING DELTA, CoRES UNIX

Motorola Inc has come out with a new IA industrial automation family of DeltaRt computers for data and control applications in computer-integrated manufacturing. The line features a Rapid Development Platform standards-based industrial application development tool designed to reduce a product's time to market by increasing the flexibility, ease of use and quality of automated systems. Applications can be developed by drawing graphic pictures and creating scripts, defining the data in the database and describing the algorithms in the high-level languages provided by Platform. The DeltaRt IA systems are designed to combine transaction processing for factory management and real-time control for shop-floor operations and use a Single Virtual Machine distributed computing architecture that makes transaction and real-time processing transparent to the user, so that all networked systems act as one computer and machines can be added and removed on the fly. The graphical user interface supports workstation-quality colour graphics on X-terminals, colour monitors and MS-DOS micros. The Distributed Database Manager shows all data in a relational format and executes in real time without interrupting data acquisition with on-line import-export capabilities to link with most Unix databases, including Oracle and Informix. The operating system is CoRes OS, described as a real-time Unix, conforming to the System V Interface Definition and running off-the-shelf third-party Unix applications. Available now, systems start at \$8,000 to \$25,000.

NEC CLAIMS MAINFRAME LEADERSHIP WITH ACOS 3900; 49Gb DISK

Following the launch last year of the 32-bit GCOS 64-derived Acos 3800, NEC Corp has now come out with a new top-end for its 36-bit GCOS III-derived line, the Acos 3900, claiming it to be the world's fastest general-purpose mainframe. The top-end Model 80, with eight tightly-coupled processors, is rated at 700 MIPS in scientific-oriented work. There are eight models, the smallest being the Model 10 uniprocessor rated at 110 MIPS. The machine is built of 20,000 gate per chip logic with propagation delay of 70pS. NEC has traditionally used the Current Mode Logic bipolar technology, but it is not known whether these are CML chips. There is a new ACOS-6/NVX version operating system claimed to be fully compatible with the current ACOS-6/MVXII, which extends the address space to a gigantic 4 Petabytes and supports Unix as a guest. Main memory goes from 512Mb to 1Gb, it has 256 to 512 channels, and aggregate data transfer rate ranges from 1GBytes-per-second to 2Gbps. First ships are set for July 1992 for all but the top two models, which follow in December next year. NEC looks to sell 350 of the things over five years, with Bull SA and Bull HN Information Systems taking 250 of those for the US and Europe - the machines are of course DPS 9000 - and GCOS 8- compatible. NEC also announced an ACOS System 3700 to replace the low-end ACOS 830, offering two to three times the performance, for ships in April 1992. It hopes to shift 120, but the 3700 is unlikely to be sold outside Japan. The company also trumped its rivals in the disk drive stakes, with the N7797, which goes from 12.2Gb on the 01 model to 49.1Gb on the 04; average seek time is 12mS, rotational delay, 5.6mS.

IBM FLESHES OUT RS/6000 LINE, CUTS HARDWARE, UPS SOFTWARE

IBM last week unveiled two new models in its RISC System/6000 family of Unix workstations and servers, a second X-Window terminal, a graphics unit and additional storage capacity - as well as dropping prices on existing RS/6000 hardware, but raising software tags. At the low-end, the Powerstation 320H - H for high performance, but for obvious reasons, no P - uses a 25MHz iteration of the Rios RISC, whilst the high-end Powerserver 950 is a rack-mounted version of the 41.6MHz model 550 launched at last year's Unix Expo show in November, (UX No 307). The model 320H, at 37 MIPS and 11.7 MFLOPS carries a Specmark of 32.4, comes with from 16Mb to 128Mb memory, 160Mb disk and starts at £8,163 with ships due in May. Users of the current low-end model 320, which runs at 20Mhz, can upgrade from June at a price of £2,721. The model 950, rated at 62 MIPS, 25.2 MFLOPS and Specmarked at 56.3, comes with from 32Mb to 512Mb RAM, 857Mb disk and is due in July with prices starting at £108,626. Existing users of the rack-mounted model 930 can upgrade in September for a price of £64,095. They'll run the latest 3.1.5 version of IBM's AIX Unixlike, which is due in April. The Powergraphics 7235 GTO unit delivers 990,000 three-dimensional vectors-per-second performance to workstations in the RS/6000 series, a tenfold improvement, said to match the power of the existing dedicated graphics system, the model 730, which incorporates technology from Silicon Graphics Inc. It supports the PHIGS graphics language, X-Window and applications based upon Silicon Graphics' Iris GL environment. An 8-bit model with 256 colours costs £12,700 - a 24-bit version comes in at £19,211 with 16.7 million colours, both are due in September. The X-Station 130 uses a 32MHz processor, comes with 2.5Mb RAM, 1Mb video memory and costs £1,555 from the second quarter. The 9334 model 500 expansion unit delivers up to 3.4Gb disk space to RS/6000 workstations and servers. Available by the year-end, base prices start at £7,327. The 9334 model 010 expansion unit provides the rack-mounted models 930 and 950 with up to 22.2Gb disk capacity - a 670Mb version costs £6,600 - the 7202 expansion rack is priced at £4,000, both are due in October. IBM also announced support for Minneapolis, Minnesota-based Network Systems Corp's eight-port DX/IP optical data exchange router which allows RS/6000s to connect with AS/400s and other IBM systems - it costs £12,700. Prices of existing RS/6000 models are cut by between 10% and 33%, with software tags rising 5% for systems supporting up to 32 users and 10% for the rest. IBM did not confirm or deny last week's news that the UK's Barclays Bank is set to become the largest AIX user in Europe with an order for up to 3,000 RS/6000 machines, though it admitted that "several large situations are near completion." IBM UK's AIX Systems Manager David McKenzie claims the company now has the largest share of the multi-user commercial Unix market in the UK, but then declined to reveal the findings of the internal study said to prove this finding.

"MERELY FILLING IN GAPS," SAYS HARLEY HAHN

Harley Hahn, a favourite AIX watcher, isn't buying the notion, popular with much of the American press, that IBM hurried up last week's RS/6000 announcement to steal a little thunder away from Hewlett-Packard when it brings out its Snakes next week. Hahn figures IBM was merely filling in some gaps. This is how he reads the meaning of it all: Last week, IBM plugged a few holes as far as basic choices go. Now there are two X-terminals - basic and enhanced - two desktop computers - large and huge. There is also more choice in graphics computers. The new graphics subsystem, the GTO, allows you to add the graphics power of a 7630 to any of the desktop or floorstanding computers. These additions aren't so much competitive to specific systems from other vendors as they are consistent with IBM's long-term strategy of creating a complete line of extendable Unix machines. Each species of 6000, be it model 1xx, 5xx, 7xx or 9xx, can now be upgraded to a higher model. IBM is clearly signalling to its customer base that it intends sticking with the 6000 long-term. If gap-filling is a customer-stroking exercise, are there also indications IBM is doing some competitor blocking as well? The answer is yes. The most aggressive way to compete is to cut price, not introduce new models. So, let's not lose track of the price reductions: from 24% to 66% for memory options and from 26% to 32% for disk drives. Yet pricing is still not as important to the accounts IBM wants as are perceptions of longevity, flexibility and expandability. IBM is clearly positioning the fleshed out line as a serious choice for the long-range planner and buyer. What is still missing is a cheap high-performance diskless workstation and affordable low-end servers and workstations that compete in the PC market.

...AS IBM ENHANCES RS/6000 INFORMATION SERVICES WITH DIRECTORY ENQUIRIES

Directory assistance operations can be more efficient with new programs and enhancements to IBM's Information Services System, according to the company. The AIX Listing Services Inquiry Program/6000 is one of several enhancements to the Information Services System software that runs on the RS/6000. Capabilities include enhanced communications for use in company networks and managing the information services network from one location. Information Services System software will be available on a special order basis from September, which means pricing is on request.

CHESS: DEEP THOUGHT II ON RS/6000 SPEARHEADS IBM'S PARALLEL RESEARCH

IBM now regards chess-playing programs as so important to research into parallel processing that it has developed a chess co-processor for the RS/6000 for use with the Deep Thought II program developed at the Thomas J Watson Research Center. At Hannover this week it is showing Deep Thought II on an RS/6000 with 24 chess co-processors, competing against seven members of the German National Chess Team, six of whom are grandmasters. World champion Garry Kasparov will present the prizes. Deep Thought II can analyse 10m chess positions a second, 10 times faster than its predecessor. IBM is aiming for a 1,000-CPU system that can evaluate 1,000m positions per second.

WORKSTATION VENDORS AGREE GRAPHICS PERFORMANCE BENCHMARK

Unix workstation vendors Hewlett-Packard Co, Sun Microsystems Inc, DEC, Evans & Sutherland and Silicon Graphics Inc recently got together to thrash out a benchmark that measures the graphics display performance of hardware systems. The idea is to allow users to see how fast a particular graphics application runs on different platforms with the Picture Level Benchmark, PLB. Until now performance measures such as shaded polygons and vectors per-second have been used, but vendors tend to define these differently. A PLB performance profile is generated when a workstation runs a number of graphics tests - though this does not include picture quality. The group of vendors - which goes by the name of the Graphics Performance Characterisation committee - has come up with a GPCmark for each of the tests, not a single figure of performance, but a price performance study in the US trade press has a Sun Sparcstation 2GX out in front with the lowest price per GPCmark, followed by a DECstation 5000 PXG Turbo and an HP 433 Turbo VRX-T2.

MICROSOFT UNDER FEDERAL TRADE COMMISSION INVESTIGATION

The US Federal Trade Commission has been conducting a non-public investigation of Microsoft Corp believed to centre on allegedly misleading statements the company made on the occasion when it shared a Comdex platform with IBM in November 1989. Microsoft confirmed that it is complying with requests made by the Commission and says it received a letter in June 1990 advising it of the investigation and requesting co-operation. It says it believes that the inquiry was prompted by a press release issued at Comdex discussing future directions of OS/2 and Microsoft Windows. The Commission indicated interest in whether Microsoft has been restricting the functionality and features of future versions of Microsoft Windows, Microsoft says, but the investigation is thought to have been spurred by disaffected applications software developers that were stunned at how important Windows 3 turned out to be and were wrong-footed in not having versions of their applications ready, where Microsoft was able to offer Windows versions of products like its Excel spreadsheet and Word processor.

FUJITSU VP1000 MINISUPERS RUN UXP/M UNIX SYSTEM V.4

Fujitsu Ltd's new minisupercomputers are low-end models in its VP 1000 series, and they support the company's UXP/M implementation of Unix System V.4. The new models are the VP1100/10, 1200/10 and 1200/20, with maximum vector performance of 110 to 170 MFLOPS and maximum main memory of 256Mb. The VP1000 series takes up a third of the space and draws a third of the power of the VP2000 series and is air-cooled. A new model in the VP2000 series is the VP2100/10, with a maximum vector performance of 375 megaflops, and memory of 1Gb. It rents at from \$130,000 per month. Fujitsu hopes to export 50 of the VP1000s, presumably mainly through ICL and Siemens.

TERAPLEX LIFTS A COUPLE MORE VEILS ON INTRIGUING MINIMUM INSTRUCTION SET TECHNOLOGY

Teraplex Inc, the intriguing Champaign, Illinois company formed to exploit a technology that goes one step beyond RISC - Minimum Instruction Set Computing - has been shedding a little more light on the concept. Its 65MHz microprocessor will have fewer than 20 instructions, mainly computational operations which are executed by a universal functional unit comprising adder, high-speed proprietary multiplier, logic switch, floating point unpacker and floating point packer. No instruction decoding is needed because the instructions include all the control information needed for their execution. Despite the atomic nature of the instructions, the processor uses a very long instruction word of 128 bits to improve bus efficiency by enabling the transfer of multiple addresses and operands in a single bus cycle - but it does require more memory than RISC or complex parts to operate at maximum efficiency. The key benefit claimed for the technology is that the instructions are so low-level that they can be combined to mimic any proprietary instruction set. Just as companies like Micro Focus Plc have their compilers compile down to an intermediate code that is then interpreted, so that to implement the compiler on a new hardware architecture requires only writing a machine-specific interpreter to slip in under the universal compiler, so with the Teraplex architecture, any processor instruction set can be emulated simply by writing an instruction stream decoder that aggregates the atomic instructions to create each instruction in the proprietary set so that microcode is replaced by software. The Teraplex compiler will take the high-level language code and compile it down to the Teraplex Intermediate Language Interface. The Intermediate Language assembly language then compiles the instructions down to the atomic instructions. The company is currently working on an 80386 emulation for the processor, which it calls the MISChip, and says that the part executes 80386 code 4.5 times faster than a 33MHz 80386; for comparison, RDI Computing Inc says that its software emulation of the Intel Corp architecture for the Sparc chip delivers MS-DOS performance equivalent to the 80286. As reported, Teraplex has signed Atmel Corp to fabricate the MISChip, but is backing off from its second quarter target launch date. It plans to put the Teraplex Intermediate Language Interface into the public domain to encourage third parties to develop software.

ULTIMATE DOES ITS OWN IMPLEMENTATION OF PICK UNDER UNIX AS ALTERNATIVE TO UNIVERSE

Yet another Pick vendor, this time the Ultimate Corp, has confirmed the trend to run Pick on top of Unix with its own native Pick implementation, Ultimate Plus. Ultimate previously relied on VMark's Universe product to satisfy Unix clients with Ult/ix, but has introduced Ultimate Plus for those companies that want full compatibility with native Pick implementations. Prime Computer (with Prime Information) and Sanderson Electronics Plc recently released competing Pick under Unix products. Ultimate did the implementation using its own Pick assembler-to-C translator, and will support it initially on HP 9000 Series minicomputers, and later Bull DPX/2 and IBM RS/6000 machines. Pricing will be set in April, but it should be comparable with Ult/ix, which Ultimate will continue to support, along with native Pick for Bull machines and a version for 370 architectures. Ultimate Plus will run "thousands" of Pick applications, and in future releases will take advantage of Unix graphical user interfaces and communications, including SQL access to the database, which will enable the thing to compete with the likes of Oracle and Ingres as a database product.

SUN TURNS SPARC OVER TO MULTI-PROCESSING SPARC HOPEFULS

Sun Microsystems has turned the MBus and Version 8 of its hardware blueprints over to Sparc International to spur a high-volume inexpensive Sparc-based multiprocessor business among compatibles makers. Sparc International will publish the Sparc Architecture Version 8 specification and make it freely available through technical bookstores and universities worldwide in the next few days. The specification, which of necessity maintains binary compatibility with previous revisions, includes a precisely defined memory model that will simplify porting uniprocessor applications to multiprocessor environments. Sparc International will also distribute the misleadingly named MBus specification. The MBus is not a bus at all in classic engineering terms but rather a multi-chip module interface designed to provide a common high-performance interconnect standard for all Sparc processors, cache, memory and I/O functions. Both Sun and Sparc International, which was charged with licensing Sparc technology to cloners last year, are anxious to have it identified as the "time-to-market technology," they said. The MBus will reportedly make it easier for cloners to swap chips in and out and upgrade their systems more quickly, moving to next-generation MBus-compatible chips, such as the superscalar Sparcs expected later this year, without fretting over hardware redesign, compatibility and debug issues. It will also give them more room to innovate and add value. Sun Laboratories' director of advanced systems Dave Ditzel, called MBus the "world's first instance of multiple generations of chips using the same pin-out standard." Sparc International and its members-composed Architecture Committee are now responsible for the future evolution of both the version 8 and MBus Level I (uniprocessor) and Level II (Multiprocessor) specifications. Companies that have had a hand in reviewing Version 8 over the last year include Logic, Metaflow, FPS and Amdahl. These standardisation efforts, unapproached at this level anywhere, will give Sun and its camp another brickbat to throw at their rivals, particularly the new ARCA group led by MIPS, Compaq, DEC and Microsoft.

FPS SPARC SUPERCOMPUTER SET FOR APRIL 1

FPS, the old Floating Point Systems, is scheduled to launch its long-heralded Sparc-based supercomputer on April 1. Last year, reports out of the company had the machine offering both a scalar Sparc module with up to eight processors in parallel and an integrated matrix co-processor with six to 84 Intel 40 MHz 860 chips also in parallel. The resulting vector, parallel and matrix system was to deliver between 480 MFLOPS and 6.7 GFLOP peak priced at between \$820,000 and over \$4m (UX No 287). Meanwhile, the company said last week that - thanks to its integrated matrix co-processor - its existing Model 500 family has achieved true high-end supercomputer performance sustaining 2.7 GFLOPS running library routines used in some of today's most common scientific and engineering applications. FPS is now bragging that it can now replace supercomputers costing upwards of \$25m with a solution that goes for under \$2m.

WANG ADDS 80486 EISA MACHINE FOR VERTICAL MARKETS

Wang Laboratories has moved up to the EISA bus with its latest 80486 machine, a 33MHz EC480/33C, designed to be used as a file server, workstation or Unix host. As a server, it runs Banyan Systems' Vines or Novell Inc's NetWare 386, and can be used as a server for Wang's Open/Image document processing system. It will also be offered with SCO Unix as a low-end multi-user system, and will be pitching it at the legal, professional services, manufacturing, government, insurance and some other vertical markets. It will also be offered as a workstation for computer-aided design. The machine comes with 4Mb-64Mb memory, eight EISA slots, 1.2Mb or 1.44Mb floppy, 2 serial and 2 parallel ports and mouse port at \$9,000.

DIGITAL RESEARCH ADDS UK- DEVELOPED MULTI-USER DOS

Digital Research Inc has with a new multi-tasking, multi-user version of its MS-DOS emulation. For 80386 and 80486 machines, Multiuser DOS is touted as a cheap alternative to Unix and networks. Developed in the UK at Hungerford, the £500 program uses technology from Concurrent DOS 386 and DR DOS 5.0, is Windows-compatible and supports up to eight applications at each display.

SIEMENS-NIXDORF DISCLOSES HOW IT'S BEEN SPENDING ITS TIME SINCE THE MERGER IN OCTOBER

"Enterprise-wide solutions" seems to be the catchphrase of the moment, its latest enthusiast being the UK subsidiary of Siemens Nixdorf Informationssysteme AG, the new company formed from the marriage of Nixdorf Computer with Siemens Data Systems, which has been briefing the press on what it has been up to since the October merger. The company has been split into six separate divisions to target specific markets, such as the commercial market, retail, finance and insurance, and government and public sector. A special products division has been set up to handle the high speed printing and supercomputer markets, while a further division has been devoted to consultancy, training and maintenance, software, integration and network services - services accounts for a staggering 50% of Siemens Nixdorf UK's £150m revenues. Graham Williams, the company's newly-promoted marketing and business development director - his previous title sounded very similar, but had fewer words - differentiates its enterprise-wide approach from that of the likes of IBM and DEC, saying that all the hardware and software it supplies, whether second sourced, is marketed under the Siemens Nixdorf badge - it doesn't promote other companies' products. And Siemens Nixdorf favours the direct sales approach, with less than 10% of sales made through value-added resellers - these target niche markets such as dental practices and general practitioners. The company claims full support for open systems, and prides itself on helping customers integrate their existing investments with new technology. Targeted company turnover for the short-term is £400m.

XEROX ADDS SPARCSTATION 2 MODEL

Xerox Corp extended its 6500 Unix workstation line with the Sun Sparcstation 2-based Xerox 6540, bundled with Xerox GlobalView GlobalView document and information management software. It runs SunOS 4.1.1b which runs GlobalView concurrently with other Unix applications; GlobalView also runs under MS-DOS and on the Xerox 6085 workstation, which can exchange documents and data when networked with the 6540, which is \$18,000 with mono screen, \$23,000 colour, April.

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In what the Wall Street Journal sees as leading to an open break with Microsoft Corp, IBM is planning to spend as much as \$40m in a last ditch effort to win acceptance for the OS/2 operating system, starting next month or in May: the aim is to give the program as much visibility as Windows, and IBM is now saying openly that it does not see the so-called OS/2 3.0 - which will be OS/2 in name only - as the necessary successor to OS/2 Extended Edition. It is also saying that it sees no need for Windows-32, and that its next release of OS/2 will provide better support for both MS-DOS and Windows as well as having enhancements to OS/2 functionality.

IBM first showed its native OSF/1 port of the ES/9000 at the Share 76 user group meeting in San Francisco last month; it has also shown OSF/1 running on a PS/2.

IBM is jogging the arms of Wall Street analysts, hinting firmly that some of them have got carried away in their enthusiasm for its RS/6000 business: some have been projecting sales this year as high as \$3,000m, three times the 1990 figure, but IBM is signalling that \$1,700m to \$2,000m would be safer.

The Object Management Group in Framingham, Massachusetts has issued a Request For Information for an Object Model, a formal description of the allowable behaviour and visible characteristics of objects within an object-oriented environment, saying it wants a common description of an object that can become standard across every type of computer in use. The Object Model will describe what an object is, what it can do, and how it interacts with other objects and the club wants comments from developers of object-oriented products. It should become a consistent reference to ensure interoperability and design uniformity within the Group's Object Management Architecture components; responses to the Request must be in by May 1.

In the UK, X.Solutions, Warlingham, Surrey, has launched a Motif-based document storage, retrieval and management system - Archium - for Sun Sparc systems: prices start at £1,000.

AT&T Co has written to "several hundred" of the employees of its computer systems division advising them that if they can't find positions with other units of AT&T they will be laid off at the end of May, on terms unlikely to be generous.

Ultimate Corp, East Hanover, New Jersey reports that the US Department of Commerce has issued an export licence for Ultimate to ship a Motorola 68030-based Sequoia Model 300 2.2.2 computer system worth \$500,000 to Moscow-based Ghokran, a large Soviet jewellery concern; it will be paid for in hard currency.

Ithaca Software, based in Alameda, California has released new versions of its HOOPS Graphics System for the RS/6000, Microsoft Windows 3.0 and Apple Computer's MacApp. HOOPS is used to build interactive two-dimensional and three-dimensional graphics applications for computer aided design, manufacturing and engineering, as well as mapping, scientific visualisation and general graphics. The new IBM version of HOOPS will support the RS/6000's Motif and Silicon Graphics' Graphics Library interfaces; the MS-Windows 3.0 version of HOOPS will be available in 80286 standard and 80386 extended modes. HOOPS Version 2.21 for Windows 3.0 and MacApp, as well as all other versions of HOOPS for personal computers and Apple Macintosh, is \$2,100 per development licence; a development licence for the RS/6000 and for other workstation HOOPS costs \$4,200.

Frame Technology Corp has announced FrameMaker 3.0, a new release of its workstation publishing software for multiple environments: FrameMaker 3.0 has several enhancements including tables and conditional text; FrameMaker 3.0's new features are included at no extra cost, \$1,000 for a fixed licence on Apple Computer Inc Macintosh and NeXT Computers and on 80386 and 80486-based personal computers running under Santa Cruz Operation Open Desktop 1.1 operating system.

Writing in the March 26 issue of PC Magazine, industry gadfly John Dvorak claims that IBM is going to activate an unused codicil of its old chip-sourcing agreement with Intel and start making 486 chips in-house at its facility in Manassas, Virginia. Dvorak seems to attribute the decision to IBM's impatience with Intel's backlog and notes the move will only serve to deepen IBM's profit margin on its "pricey" 486 boxes.

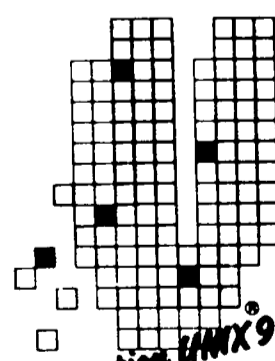
AT&T's investment banker Morgan Stanley, into at least its second round of phone calls to NCR stockholders trying to woo them over to AT&T's way of thinking, is reportedly taking a different tack. According to one NCR stockholder who is also an NCR employee, the Morgan Stanley rep said to him that AT&T might be willing to negotiate the share price up if NCR were willing to negotiate period. This is probably just their way of dealing with reality since NCR's stock is trading way over AT&T's \$90 offer.

Intergraph Corp last week announced the first shipment of the Motif-compliant Version 4.0 of its Micro Station computer-aided design software package that runs on personal computers, Apple Computer's Macintosh systems, and Clipper-based workstations, and is to be implemented on Sparc systems by early 1992: the personal computer version costs £3,000 and is available directly from Intergraph, as well as from 45 Intergraph UK dealers.

Hitachi Ltd sprung a surprise, saying that it is sampling its first part under its pact with Hewlett-Packard Co on the Precision Architecture RISC: the part is a 9 MIPS microcontroller version of the RISC, intended for graphics and office applications.

Motorola Inc has issued a statement disagreeing with Concurrent Computer Corp's contentions highlighted in Unigram.X last week that multi-processing features of the 68040 processor were "deficient". According to Motorola's Jim Reinhart the 68040 "is the only microprocessor that implements a physical copy-back cache with hardware coherency support. The chip also fully supports the traditional write-through cache mode which can exist with copy-back mode on a page by page basis. In both respects, the device meets the original specification. Motorola has never shipped production versions without copyback."

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Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.
Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, March 25-29 1991

Number 326

DISTRIBUTED MANAGEMENT TECHNOLOGY REVIEW NEARS... BUT HAS THE DIE ALREADY BEEN CAST ?

Submitters say their submissions for the Open Software Foundation's Distributed Management Environment Request For Technology are headed towards preliminary review on April 8th in Cambridge, Massachusetts, and April 11th in Munich. Apparently, the list of 27 submissions that made the OSF's December deadline has been culled to about 14 reasonably significant proposals - with the duplicates and single-item products now excised. Groupe Bull is throwing its weight behind the IBM/Hewlett-Packard joint submission, (UX No 307), and adding some of its own technology to the brew, including a standards-based System Management Services application programming interface and an Inference Engine that applies artificial intelligence to enterprise management. Siemens-Nixdorf says it's climbing on the bandwagon too and doesn't want to talk about what it's bringing to the party prior to a press conference that could be held this week. However, HP says it's working with the Germans to integrate OSI upper-layer communications protocols into the DME framework. Sources watching the IBM/HP effort, which is slower than anticipated, aggravated perhaps by some HP in-fighting between its own internal OpenView forces, whose stuff is the basis of the company's DME approach, and its object management people, who are now in cahoots with Sun Microsystems on a separate Object Management Group submission, (UX No 323). IBM's contributions include a non-graphical user interface and technologies based on AIX, a fault-tolerant data engine and systems management applications. Since the DME submissions have yet to reach the actual evaluation stage, it was odd to read in last week's *Information Week* magazine that the IBM/HP submission was already a "finalist" in the OSF run-off. The story claim can only create something of a public relations flap for OSF, whose RFT selection process has been attacked as biased towards its founders, especially so if the IBM/HP/Bull/Siemens-Nixdorf camp eventually prevails.

VEIL LIFTED ON SIR CLIVE SINCLAIR'S EMULATING SUPER-RISC

There have been whispers going around for a couple of years now that Sir Clive Sinclair was working on a magic new chip that would emulate the Intel iAPX-86 and other environments using RISC techniques, and run software blindingly fast. Now a few more details have emerged: according to *Electronic World News*, a company called PgC Ltd will be marketing the chip, which will be rated at about 200 MIPS and cost about \$400. To emulate existing microprocessors, the PgC 7600 treats their instructions as data and translates them into its own native code - a technique similar to that planned by Champaign, Illinois-based Teraplex Inc with its minimum instruction set technology. In that mode it is claimed to offer the performance of a 12MHz 80286 box. It is being fabricated in GEC Plessey Semiconductors Ltd's low-power bipolar collector diffusion isolation process, which supports high clock speeds and gives high yields. And with just 90,000 transistors on a 10mm by 10mm die, it is not a complex chip to fabricate. The part is designed to be used both in mass market personal computers, and in multiprocessors using dual-ported RAMs to provide a 1.28Gbps bandwidth for connections to other processors. The part is also self-clocking, starting a new instruction as soon as the last one is executed, which means an instruction can be executed every 5nS, nominally equivalent to a clock speed of 200MHz if the thing had an external clock. The dual-ported memory will be able to pass object-oriented data structures in a way similar to the packet data structure used in dataflow computers. The Harvard Architecture RISC also includes 768 bytes of ROM for storing a library of complex instruction set subroutines to facilitate emulation of parts like the 80386 and the Motorola 68020. Extending Sir Clive's commitment to waferscale technology, the designers believe that by going to finer design rules it will be possible to fabricate more than one processor on the same chip - monolithic 10-processor chips are in the plan, with associated on-chip dual port memory. PgC plans a \$40, 80 MIPS CMOS version of the part next year and a \$100, 250 MIPS single processor bipolar part. And in the middle of 1993, a 1,000 MIPS CMOS PgC7700 with 512Kb of on-chip memory is planned at around \$400. A bipolar version with less memory but rated at 2 GIPS and costing \$200 is also in the plan. As well as being the basis of low-cost hand-held and desktop computers, the designers hope the chip will find embedded applications such as X-terminal control, other graphics applications, and in telecommunications.

ARCA GAME PLAN TO BE REVEALED ON APRIL 9

The Unix industry's newest league, ARCA, the Advanced RISC Computing Architecture consortium, which at the very least includes teams from Microsoft Corp, Compaq Computer Corp, Mips Computer Systems Inc, DEC and Santa Cruz Operation, (UX No 321), will kick-off with an opening fixture on April 9th at the Waldorf Astoria hotel in New York. Here, Compaq president Rod Canion, DEC president Ken Olsen, Microsoft chief executive Bill Gates, Mips chief executive Bob Miller and Doug Michels, president of SCO, will share a platform to introduce yet another workstation "standard" to the Unix industry. Shaping up remarkably like a "mini Open Software Foundation," those involved will, we hear, issue a joint press release detailing their planned effort to create a new workstation standard. Just the latest moniker being attributed to the project is Gibraltar - but expect that to change by the day - more details page two.

HEWLETT-PACKARD TAKES THE GLOVES OFF FOR OLD ONE-TWO

"57 MIPS, Under \$12K" say the teaser ads running in the US press last week: "If you guess Sun, you guess wrong". The ads are of course to prepare the way for this Tuesday's launch of Hewlett-Packard Co's Snakes - the HP 9000 Model 700 line of RISC workstations - and according to the *New York Times*, the company will be making another glitzy launch next month, with a notebook computer that includes Lotus Development Corp's 1-2-3 in ROM. The paper also hears that the Model 730, at about \$20,000, will deliver 76 MIPS and have a Specmark of 72. Meanwhile Unigram spied the first Snakes in their natural environment - running computer-aided design applications at last week's CAD/CAM 91 show in Birmingham last week - see page three.

STRATUS DEBUTS 80860 FAULT-TOLERANT BOX

Nearly two years after its defection from Motorola Co's 88000 stable, Stratus Computer Inc last week unveiled its first RISC product, built around Intel Corp's 80860 processor. The Marlborough, Massachusetts-based fault-tolerant computer manufacturer also announced a V.4-compliant version of its FTX Unix implementation, two high-end multi-processing additions to its Motorola 68030-based XA2000 series and a raft of application software for the telecommunications market dubbed the Stratus Intelligent Network Application Platform, or SINAP - details on page three.

SPARC PROCESSORS TO COME ROYALTY FREE THIS YEAR

Sun intends eliminating all royalties semiconductor companies pay to produce Sparc chips. The notion, now still in the proposal phase, is likely to become a reality later this year, no matter how the winds blow inside the IEEE P1754 subcommittee, which came into being a number of months ago to consider another highly political Sun proposal - a RISC microprocessor backed by the IEEE and based on Sparc. Sun figures its royalty-free stance is going to attract a bunch of previously hesitant Far Eastern semiconductor houses to the Sparc.

HP EXTENDS SEQUOIA DEAL, AS MULTI-PROCESSING WORKSTATIONS AWAIT COMPILER TECHNOLOGY

Hewlett-Packard Co's multi-processing Unix plans are reportedly hooked-up on the development of suitable compilers, and the company has extended by three years, until 1994, the licensing deal it has with Sequoia Systems Inc for the fault-tolerant computer manufacturer's multi-processing technology, which HP is using for internal research and development. HP is thought to have paid around \$1m for the privilege. And HP has also altered the terms of the OEM deal it has with the Marlborough, Massachusetts firm for its fault-tolerant Motorola 68030-based Series 300 range, which HP rebadges as the Series 9000 Model 1240, (UX No 262): Sequoia has agreed to give up its direct sales efforts in the telecommunications market in return for increased purchase commitments from HP.

VISIONWARE, ISLAND SIGN WITH UK X DISTRIBUTOR SYSTEMS INTEGRATION LTD

VisionWare Ltd of Leeds has signed a distribution agreement with Systems Integration Ltd under which the Guildford, Surrey company will market the MS-Windows-based XVision personal computer-to-host integration product in the UK and Ireland. Systems Integration, described as the only UK distribution company to have focused entirely on X, says its plan is "to expand the usage of commercial Unix applications for the X-Window System, both for traditional workstations and personal computers." The firm will initially sell XVision direct, but is also seeing early interest from value-added resellers, and has signed up a number from the City of London. XVision costs £400. Systems Integration also has exclusive distribution deals with Visix Software Inc for Looking Glass, and has just signed up for the X versions of Island Graphics' Paint, Write and Draw packages. It also has a deal with Quality Software Products Ltd for the Exclaim spreadsheet, has the Synchronise time manager for X from CrossWind Technologies, Felton, California, and is a reseller for Precision Visuals Inc. The company hopes to build up a complete personal applications set for resellers, including integrated office and mail software. Systems Integration opened for business in November last year, and was previously a distributor of Stardent hardware. Its main competition appears to be the US-based Unipress Software Inc, Edison, New Jersey, which has a toe-hold in the UK through its association with Real Time Systems Ltd of Douglas on the Isle of Man.

ARCA WORKSTATION CONSORTIUM WOOS 40 VENDORS, EYES OSF/1 UNIX...

Microsoft Corp and its leading partners in the Advanced RISC Computing Architecture consortium - see front page - Compaq Computer Corp, Digital Equipment Corp and MIPS Computer Systems Inc are seeking to recruit some 40 other companies into the consortium, which looks like an even-handed attempt to derail the strategies of IBM on the one hand and of those companies that really believe in Unix like Sun Microsystems Inc, Hewlett-Packard Co and NCR Corp on the other. The effort is to establish a new workstation standard built around the MIPS R4000 64-bit RISC and Microsoft Corp's Portable OS/2. According to Electronic News, companies at the receiving end of the lobbying effort include MIPS RISC-makers Siemens AG, controlling parent of Siemens-Nixdorf Informationssysteme AG, NEC Corp and Toshiba Corp; MIPS chip users Control Data Corp, Prime Computer Inc, Sony Corp, Bull SA, Tandem Computers Inc, Stardent Computers Inc and Kubota Corp, and Pyramid Technology Corp and its OEM customer Ing C Olivetti & Co SpA. Wang Laboratories Inc is also said to be on the hit-list. The group has also been trying to split the Sparc International camp by recruiting Fujitsu Ltd, but Fujitsu said it had "backed off" for now. Although Microsoft was thought to be in the driving seat with a 64-bit version of its New Technology operating system, the US trade weekly suggests that a version of the Open Software Foundation's OSF/1 Unix is a rival contender. There is also a fight on over the bus structure, with Compaq pushing EISA and DEC its own bus. The group, now expected to come clean on April 9, also aims to define networking protocols and applications binary interface.

...THOUGH MIPS R4000 "TOO BIG" TO POWER A DESKTOP SYSTEM

With ARCA so much in the news, people have been looking over MIPS' past record for producing silicon, and found it has had some problems in getting the stuff out of the door in a timely fashion. Some observers have noted that the specifications for the vapourish R4000 chip look as if they would produce something too big and hence too expensive to power a desktop machine. Both these factors could impact the volumes which MIPS needs to keep trucking. And competitors are wondering how powerful the superpipelined R4000 really would be, estimating MIPS would have to crank up to 100MHz to achieve 40-50 Mips, and intimating that that couldn't be done first time out. They're betting that initially MIPS will only give 35 Mips, making it none too competitive.

**QUINTAS PROLOG "IS NOW FULLY
EMBEDDABLE" WITHIN C PROGRAMS, SAYS AI**
Watford, Hertfordshire-based AI International Ltd - the surviving result of a management buyout from defunct Artificial Intelligence Ltd last November - has announced the commercial availability of Quintas Prolog 3.1 for DEC's DECstation MIPS Computer Systems Inc RISC-based family, IBM's RS/6000, Intergraph Corp's RISC machines and Sun Microsystems Inc's Sun-3 and Sun-4 workstations. The new version is the first Prolog development system to be fully embeddable within C applications, the company claims, thereby enabling "intelligent" portions of a programme to be written in Prolog and then embedded into C applications. AI distributes Quintas Prolog in the UK for Mountain View, California-based Quintas Computer Systems Inc, which first introduced the product in January 1985, and claims it has since issued 6,000 licences worldwide. It has been used to produce expert systems, CAD/CAM and engineering design tools, database applications, intelligent user interfaces and natural language systems.

DEC TO ENTER MASSIVELY PARALLEL MARKET "IN A YEAR" - WITH MASPAR?...

DEC will enter the market for massively parallel computers within a year, vice-president Robert Glorioso told the *Wall Street Journal* - but the entry may be with a partner rather than alone. MasPar Computer Corp, formed in Sunnyvale by former DEC engineer Jeffrey Kalb, is seen as the most likely partner, although DEC already has an agreement to collaborate on some sales with Thinking Machines Corp, of Cambridge, Massachusetts. Glorioso said that DEC had been researching the technology for years and was concentrating on the software. First products are expected to be for scientific and technical markets. A Thinking Machines computer was hailed as the world's fastest at Tennessee University on Monday, benchmarking at 5.2 GFLOPS.

...LAUNCHES VERSION 4.2 OF ITS ULTRIX UNIX...

DEC has come out with Version 4.2 of its Ultrix implementation of Unix, providing support for the top-end VAX 9000 superminis and including Version 11.4 of the X Window System and Ultrix/SQL Version 2 relational database. Ultrix/SQL is based on Ask Ingres' 6.3 release of Ingres V, and is bundled with the operating system. It includes a new on-line back-up feature that enables the machine to be run 24 hours without stopping for back-up. A new fast commit feature has been added to improve transaction processing performance: it is designed to cut the number of input-output requests to the database. It is also designed to work with Ingres' new Knowledge Management and Object Management tools. Version 5 of Ultrix is set for later this year.

...CUTS TAGS ON DECSTATIONS

Whilst Hewlett-Packard is expected to up the ante in the Unix workstation wars this Tuesday with the launch of its Snake systems - see front page and below - DEC has followed IBM's lead on price reductions, (UX No 325), and has cut tags on its Mips Computer Systems-based RISC workstation line by up to 29% - a move which is also being interpreted as an attempt to clear the decks in preparation for the introduction of new workstations based upon Mips' R3000 part this spring. The DECstation 3100 is down \$2,000 to \$5,000, whilst the entry-level, 12.1 MIPS DECstation 2100 has been discontinued. A high-end, monochrome DECstation 5100 Model 200 is down 10% at \$13,500, a base colour 5000 model is down \$1,500 to \$15,000 and add-on memory is also reduced.

SNAKES LOOSE IN BIRMINGHAM

Hewlett-Packard Co has been bursting at the seams trying not to tell everybody about its new range of workstations before the official unveiling in Amsterdam this Tuesday - but at the National Exhibition Centre in Birmingham, where the CAD/CAM 91 show was on last week, it has finally succumbed to the temptation and is showing the machines openly at the Mentor Graphics and McDonnell Douglas stands. The Snake workstations, officially called the HP Series 700, have a built-in graphics co-processor that embeds many X-Window functions into firmware, a capability that is likely to see the light of day in other Hewlett-Packard workstations over time.

KINESIX RELEASES SAMMI MOTIF DEVELOPMENT ENVIRONMENT

Scientific Software Intercomp's Kinesix division, Houston, Texas, has launched a Motif-based graphical user interface development environment called Sammi, and is releasing an application programming interface - API - for Sammi into public domain. The API will allow developers to build gateways from Sammi to databases such as Oracle, Ingres and Sybase. Running on Sun Microsystems, IBM, DEC and HP/Apollo Unix workstations - prices go from \$12,500 to \$25,000 depending on configuration.

STRATUS TARGETS TELECOMS MARKET WITH ITS FIRST 80860 BOX

Stratus Computer Inc's new XA/R Model 20 - see front page - is a fault-tolerant, mid-range uni-processor running a duplexed 32MHz version of Intel's N10 i860 processor, rated at 40 MIPS. It comes with 512Kb external cache, 32Mb to 96Mb RAM, up to 7Gb disk and a possible 600 communications lines. Stratus says the XA/R 20 delivers twice the performance of its other mid-range systems, the XA2000 Models 75 and 80. The machine runs FTX 2 - which Stratus claims is the first Unix V.4 implementation for a fault-tolerant computer - to which it will add support for the Open Software Foundation's Distributed Computing Environment and Transarc Corp's on-line transaction processing application development environment. It will also offer a transaction-processing monitor based upon this software. A high-performance commercial file system and a STREAMS-based communications platform are also under development and will be added to both FTX 2 and VOS, Stratus' existing proprietary operating which also runs on the XA/R 20. Stratus UK's managing director Frank Pipe described the achievement of combining Stratus fault-tolerant hardware with Unix V.4 as "arguably the world's most reliable system running arguably the world's most unreliable operating system." The RISC system is aimed at financial, manufacturing and telecommunications industries - prices start at £213,000 with FTX 2, £237,000 for a VOS version - with ships set for the next quarter. The high-end XA2000 Models 270 and 280 come with seven and eight duplexed 68030 chips respectively, 64Mb to 256Mb RAM, up to 31.2Gb disk, a possible 1,440 communications lines and run VOS or FTX 1, Stratus' Unix V.3 implementation. Available from the third quarter, the Model 270 starts at £1.091m - the Model 280 is priced at £1.216m. The SINAP SS7 telecommunications development environment runs under Unix across the full range of XA2000 systems and on the new RISC machine, and includes services such as 800/900 numbers, virtual private network, automatic call distribution, alternate billing and a line identification database. SINAP is out next quarter on the XA2000 series - early 1992 on the XA/R 20 - and starts at £73,000.

No 68040 plans

Stratus says it plans to develop multi-processing i860 systems, but will wait for the next iteration of the family, the N11, to arrive. Companies like Alliant Computer Corp - and indeed Intel Scientific itself - are having continuing difficulties with multi-processing implementations of the N10 part, though Stratus says it now receiving samples of the N11 successor. Meanwhile XA/R Models 10 and 30 are likely to appear each side of the Model 20. As far as the 68030-based XA2000 range goes, Stratus says it will not be moving the systems up to use the 68040 chip as its long-term future is now firmly rooted in the Intel RISC camp, however it will continue to build the Motorola-based XA2000 series for several more years yet. There is currently no plan to offer the Unix V.4 derived FTX 2 on that line, "no final decision has been taken," said a spokesman. Stratus, the majority of whose business is done on its proprietary VOS-based systems, says OEM sales now account for 30% of its total revenue, and IBM's OEM deal alone - under which Stratus systems are re-badged as System 88s - is worth \$100m, or a quarter of its total income. Stratus says IBM is likely to take the new RISC offering - including FTX 2 Unix V.4 - though only on a country by country basis.

SEMA'S YARD JOINS BATTLE WITH SYSTEMATICA, IPSYS WITH SECOND-GENERATION CONCERTO SUITE

A third "second-generation" or meta CASE tool has arrived to take its place alongside Systematica's Virtual Software Factory and Ipsys' Tool Builder Kit - Yard Software Systems' Concerto. Yard is the UK software marketing arm of Sema Group Plc, is based in Chippenham and has a turnover of approximately £2m. The research and development costs of the software products it peddles are, however, borne by Sema which ploughs about £6m per year into software engineering development.

Concerto is clearly no fly-by-night product and has the might of Sema's European reputation and distribution network behind it.

The product has a strong French flavour - it was developed in Paris in association with France Telecom's research laboratory CNET and is being used by IBM France as part of the RACE/SPECS project. Like other meta-tool vendors, Yard sees the main issue in software engineering as being the problem of overcoming the compatibility difficulties of the different component products sold under the software engineering umbrella. With meta tools this issue is addressed by recognising that nearly 80% of any product on the market has standard input-output functions, which if taken away from each product and offered in a generic tool speeds up the development of software by leaps and bounds - for example, it took Yard one man-year to produce a HOOD Ada tool set with Concerto. There are three parts to Concerto's integration system: the dialogue processor, the structure processor and the archive processor. The dialogue processor handles the human interface side of things.

Minimises line crossover

By conforming to the X-Window System X11 standard, it enables Concerto to comply with window management systems such as Open Look and Motif. At the back end the archive processor offers a "multi-database" repository that can use any external file store to which Yard has access - at present this includes Unix/Network File System and Rdb/VMS. Concerto can also handle hypertext links between different types of database. The part of this meta tool-set that differs from those offered by competitive products, says Yard's Paul Moorhead, is its structure processor layer between the front and back end. This offers logical zoom - so that the amount of information displayed is consistent with the size of the window, and full consistency control between windows, so that if, say, a box in the HOOD diagram is changed, the information in the Object Description Skeleton will change simultaneously. The other facility that Yard is very proud of is its redraw function, which minimises line crossover in cluttered designs and has to be seen in action to be appreciated. Concerto is available in various guises: as an off-the-shelf tool set, such as for example Concerto HOOD/Ada, which for six or eight users would cost £3,000 per seat; as a system for the integration of tools from willing suppliers; or as a way for users to develop their own tools. The product was written in Lisp, C and various Unix languages, but Yard claims this does not pose maintenance problems because there is one set of master code common to all the environments it works in - that is Sun-3, Sun-4, DECstations, VAXstations, HP 9000, Sony News and the IBM RS/6000. The code is object-oriented and all information within Concerto is stored as objects. Because of this both object-oriented and traditional design methods can be used on the same project in different parts of the system. Concerto can generate Ada and C code, and the next language to be supported is, naturally enough considering Concerto's birth in France, the pure object-oriented language Eiffel.

NCR OFFERS REDUNDANT ARRAY SCSI CHIPS, CONTROLLER

NCR Corp, which pioneered the Small Computer System Interface has three SCSI Redundant Array of Inexpensive Disks controllers for the OEM market. In September, it announced its 6298 disk array subsystem and integrated disk arrays on some System 3000 models, and in November, signed with Seagate Technology Inc for the development of high-performance arrays. The low-end SCSI disk array chip set comprises two chips, NCR 53C916 fast and wide with 20Mbyte-per-second transfer rate 16-bit SCSI chip and NCR 53C920 SCSI data path chip. The high-performance set adds NCR 53C932 SCSI bus extender chip for 32-bit SCSI bus and four RAID chips designed for maximum array performance. They are offered as the ADP-92-01 SCSI array controller board that can manage up to five disk drives in RAID 0, 1, 3 or 5 mode; RAID 0 is striping without parity; RAID 1 is mirrored disk array, 3 is a parallel array, 5 is an independent disk array with parity spread across all the drives.

LARGE OPEN SYSTEMS PROJECTS "WILL BENEFIT ALL UNIX VENDORS" SAYS TANDEM

Tandem Computers Inc reckons that the UK Barclays Bank and Unilever AIX projects revealed a few weeks back, (UX No 323), will go some way towards establishing the credibility of large-scale Unix implementations. It expects many Unix vendors to receive trickle-down benefits as a result. As far as its own Mips Computer Systems-based fault-tolerant Unix Integrity S2 systems go, Tandem says that it will be doing R3000 and R4000 versions of the machine, which currently uses Mips' inaugural R2000 RISC part. And Tandem, whose NonStop-UX Unix implementation is now at the Unix V.3.1 level, says a Unix V.4-compliant product, now in the labs, will be out in 1992, once the operating system becomes more stable. It'll also pick up one of the transaction processing monitors currently on offer from the likes of AT&T and NCR, and says it is now looking at various networking tools to implement on its Unix boxes.

PHILIPS, MATSUSHITA, SONY TEAM ON COMPACT INTERACTIVE

Philips NV has formed a consortium in Japan with Sony Corp and Matsushita Electric Industrial Co to launch and promote its Compact Disk Interactive multimedia technology. The company will be called CD-I Consortium Japan. The company also said it will launch a multimedia personal computer in the US to the Microsoft Corp MPC standard before the end of this year, and bring it to Europe next year, using the CD-ROM Extended Architecture standard.

APPLE STAFFER CONFIRMS 68040 MAC SERVER, RISC PLAN...

Apple Computer Inc senior vice-president of sales at Apple USA, Mike Dionne, has confirmed the existence of many of the development projects and upcoming products that have been widely heralded in the public prints, *Microbytes Daily* reports. Speaking in Milwaukee, Wisconsin, Dionne said that Apple did have RISC projects in the works "in the future product category. And we're talking to all the major suppliers of those microprocessors and chips. We are very much interested in the technology. I think you'll see it incorporated into Apple products relatively soon."

Industry insiders were last week touting a Motorola 88110-based tower as Apple's most likely initial foray into RISC. On the 68040-based Tower Mac, Dionne said mischievously "I can't comment on unannounced products other than it's a) in the plan and b) on schedule." Latest news from the US suggests that plan includes two 25MHz, 68040-based systems, a workstation and a tower, priced at around \$10,000 and \$15,000 respectively and due in August. On the possibility of licensed Macintosh clones, Dionne said that "being in a proprietary world is not something that we're interested in continuing. We want to support standards and want to license, create strategic relationships that make us competitive in the market." Elsewhere, Apple is known to be working on a notebook computer with handprint operation codenamed Newton, which may include a cellular modem, and on an audiovisual home entertainment system with a Macintosh CPU combined with a custom Compact Disk player made by Sony Corp.

...APPLE SYSTEM 7, OUT IN MAY, TO GO ONTO RISCs

And Apple is working on a portable version of the Macintosh System Software that will run on other microprocessors - specifically RISCs - as well as the 68000 family, John Sculley told the Software Publishers Association in San Francisco. He also said that the long-awaited System 7 version of the Macintosh operating system will ship in May, and Apple expects to ship 3m copies in the first year.

DEC EXPANDS ITS FAULT-TOLERANT VAX LINE WITH FOUR NEW VAXft MODELS

Fault-tolerant systems were all the rage last week - DEC filled out its fault-tolerant systems strategy by adding a complete range of high availability, fault-tolerant products to its hitherto solitary offering, the VAXft Model 310, launched last year as the VAXft 3000 Model 310. The new products include a low-end machine rated at 2.4 VAX Units of Performance, VUPs, the VAXft Model 110, which is based on two VAX 3100s, with up to 96Mb internal memory and 4Gb storage, and with starting prices from £60,000. DEC says the machine will open up the fault-tolerant market to the reseller market, and widen the market from the traditional area of finance. Then comes the existing 310, rated at 3.8 VUPs. The 410, based on the VAX 4000 series, is a 6 VUPs and 16 transactions per second machine with up to 128Mb memory and 12Gb storage; it costs from £120,000. The 610 has the same processor but comes in a 60" high cabinet for computer rooms, and has a maximum of 24Gb storage, from £140,000. Top of the range is the 612, a dual host system rated at 12 VUPs and 25 TPS, which also takes up to 24Gb storage, and costs from £234,000, or £850,000 for a fully configured system. All will be available from the summer, except the Model 110, available 30 days from order. For the future, DEC plans to add VAXcluster support for the range, and Fibre Distributed Data Interface support. DEC claims the systems are far more than just two VAXes bolted together, as they feature a high performance crosslink between memory, with CPU and registers working in lockstep. DEC says that although it's been late with fault-tolerant machines, the fact that the range is integrated into its main line computing strategy gives it the edge over IBM or specialists such as Tandem Computers Inc and Stratus Computer Inc. But Ultrix/Unix-based fault-tolerant systems, originally promised "within a year" of the 310 launch in February 1990, now no longer seem to be on the cards. VAX systems marketing manager Malcolm Garstang said that problems with a standard approach to file and record locking, and the fact that Unix was not designed for commercial applications, meant that DEC would stick to VMS products, and address open systems by adding Posix and X/Open Portability Guide 3 compliance to VMS.

BOSTON BUSINESS, KI DO VMS SHELL FOR RS/6000...

Boston Business Computing Ltd is one of those gadflies that keep DEC up to the mark with VAX emulation products, and the company reckons that there are plenty of VAX users out there that want to migrate to IBM's RS/6000 but would be most distressed to have to leave their familiar VMS environment behind. Accordingly, it has teamed up with Ki Research Inc, based in Hanover, Maryland to launch vaxpax bundled VMS emulation software for the RS/6000. The vaxpax product includes a VT320 emulator; VMS command shell and utilities, mail interface, and text editor; and DECnet and LAT network capabilities. Under the agreement, Ki and Boston will jointly integrate Ki Research's KiNET software; Century Software's Term VT320 terminal emulation software for Unix; and Boston's suite of VMS-emulation software - EDT+, VCL, Vmail and Vnet. The suite does not mean that VMS applications can simply be dumped onto the RS/6000, but it provides links to existing VAX systems and preserves the VAX user interface on the RS/6000. Ki Research, an official IBM Co-operative Software Partner will act as the main distribution channel for the product in the US.

...AS LANGUAGE PROCESSORS' RS/6000 PL/I ARRIVES...

Framingham, Massachusetts-based Language Processors Inc has now introduced its promised PL/I compiler, and CodeWatch interactive source-level debugger for the IBM RS/6000 Unix box. It says the compiler is a complete implementation of the ANSI PL/I X3.74-1981 General Purpose Subset, and adds extensions for compatibility with PL/I dialects for IBM mainframes and DEC VAX, to ease transfer of applications to Unix. It links to existing system libraries, including Fortran-compiled statistical analysis packages and also makes calls to the system-supplied RS/6000 maths library. The bundled CodeWatch enables programmers to work with true object code using symbols and conventions of PL/I. Development licences start at \$3,000, run-time ones from \$900, now.

...AND INFORMATION MANAGEMENT OFFERS COINS OPTICAL DISK SUBSYSTEM FOR RS/6000

Information Management Technologies Corp, New York reports that its Imtech Optical Systems unit has become an IBM business partner, which in its case means that it can market its Coins Computer Output Information System optical disk based storage system on IBM's RISC-based RS/6000 product line. It plans to offer it as a client-server system for high volume data storage and retrieval, in archival applications as a replacement for paper copies, microfilm or pricey magnetic storage.

SWINGS AND ROUNDABOUTS - HOW THE OPEN SOFTWARE FOUNDATION COULD BE WINNING OUT AFTER A SLOW START

by John Abbott

Could the tide be turning for the Open Software Foundation? A few years ago, when the pretender to AT&T's Unix throne announced itself in its very first guise as the Hamilton Group with the support of IBM, DEC, Hewlett-Packard et al, it seemed that many of the founders - particularly IBM and DEC - were only interested in slowing down the increasing pull towards open systems that Unix had been largely responsible for encouraging. Undaunted, the purists joined Unix International and boasted that their members were shipping by far the lion's share of Unix-based systems. And aside from the small matter of OSF/Motif, Unix International appeared to be winning most of the marketing battles, coming out with an admittedly somewhat premature version of Unix System V.4 a year before the Foundation's OSF/1 alternative.

Today, it's getting harder to dismiss the Foundation as simply a spoiling tactic. A look at *Unix World's* top ten Unix companies, published last December, puts HP on top, DEC third and IBM fifth, with only Sun Microsystems and troubled Unisys Corp representing Unix International. And HP's launch of new high-powered workstations this week - see front page - highlights another problem for the smaller Unix players. Vendors such as Pyramid and Sequent, once the high-flyers amongst the proprietary plodders, are now finding it hard to keep up with the majors in the price/performance battle. In the good old days, those companies could compare their hot boxes against the performance of the expensive VAX 11/780 and laugh all the way to the bank.

Boot

But since IBM's landmark launch of the RS/6000 last February, (UX No 270), the boot has been on the other foot. Big Blue, still remembered for the launch of one of the slowest Unix workstations ever in the RT, jumped straight to the top of the SPECmark chart with the RS/6000, and immediately had a success on its hands. Meanwhile, DEC had swallowed its pride and uncharacteristically bought into the latest RISC processor technology from MIPS Computer Systems. The smaller companies, who originally jumped on the Unix bandwagon because they couldn't compete in the world of proprietary systems, are now finding that they have again got heavyweight competition - right in their own back yards.

Of course the whole strategy means that belts have to be tightened and rationalisations made all round. As we have pointed out many times in these pages, IBM and DEC are saying goodbye to the far greater margins won in the proprietary world as they embrace open systems. IBM appears to be the worse off in this respect: while DEC is now making inroads into the technical workstation business, IBM's RS/6000 seems to be having greater success within its commercial heartland, at the expense of its AS/400 line. Software houses such as accounting specialists Systems Union in the UK are reporting that sales of the AS/400 are stagnating, while the RS/6000 booms. Although this must be causing it considerable internal pain, IBM looks as if it has bitten the bullet to ensure that it builds up a solid base for the future, and has even reportedly changed the commission structure of its sales force to give salesmen an equal incentive to sell Unix and proprietary kit.

Trump card

But the OSF element increasingly looks as if it could be a trump card for the majors. They are capitalising on an increasing awareness from corporate customers and government departments that Unix by itself does not equal open systems. Although OSF/1 has not yet reached the end-user market, it has been carefully positioned as only one part of OSF's computing environment, with OSF/Motif and DCE as the other elements. With the high profile that Motif has built up, and the attractiveness of technologies such as DCE and DME to the corporate market - both areas where Unix International has a long way to go to catch up - the OSF option is beginning to look a lot more credible. On top of that, OSF vendors have been laying great stress on Posix and XPG3 compliance on both their Unix and proprietary ranges, in a bid to ensure they remain eligible for the short lists of all the major procurements.

Unix International, perhaps hoping to capitalise on OSF's tendency to force the market into a particular direction by choosing specific technologies, has reacted with its Open Systems Architecture strategy. This aims to establish application programming interfaces for each of the new components to be added over the next few years, which other vendors will be able to access for their own implementations if they wish. The danger with this is that, in comparison with the OSF, it leaves UI's efforts looking unfocused - by the time it is ready with its own reference edition of multiprocessing extensions to Unix for instance, it looks increasingly as though most vendors will have already have adapted their own versions. Meanwhile, AT&T's promised flotation of between 20% and 30% of its Unix interests has taken rather longer than expected, and may not be enough to convince the industry that it has sufficiently relinquished its control.

So what does the future hold? The emergence of OSF/2 is still a long way off, but looks as if it could provide the most innovative technology when it does arrive. But in the nearer term, hints of a new morale boost to the OSF fortunes look to be gathering. Was Santa Cruz Operation's reluctance to commit to Unix System V.4 the first major crack in AT&T's domination bid for V.4? It is not yet fully clear whether OSF will play any part in the Compaq, DEC, SCO, Microsoft and Mips Consortium announcement due on April 8th - see front page - but if it does, Unix International could have a major schism on its hands. Either way, the next few months are likely to see the swings and roundabouts of power within the open systems market turning at full pelt.

NEWS ROUNDUP

Latest news on Sun Microsystems' multi-processor Sparc project, (UX No 305), has the workstation builder readying two and four-processor 40MHz systems rated at 40 MIPS with from 16Mb to 96Mb RAM, 200Mb to 400Mb disk and SunOS 4.1.1 with tags from \$30,000 to \$55,000. And Sun is now openly talking about producing a 1000 Mips desktop machine, a uniprocessor, within the next five years.

Consortium of the week is Unicode, formed to develop and promote an Esperanto for computers - a universal digital code that can be used to represent letters and characters in all the world's languages - the 12 founders include Sun Microsystems Inc, IBM, Apple Computer Co, Microsoft Corp and Xerox.

Seven year-old Relational database builder Unidata Inc, whose UniData software can run applications originally developed under Pick and Prime Information on Unix and VMS, has arrived in the UK, opening for business in Aylesbury, Buckinghamshire - the operation is headed-up by Richard Preen, and has appointed Amper-sand Systems Ltd as its first UK value-added reseller.

The Liant Group's Template Graphics Software Inc has released versions of its PHIGS - programmers heirarchical interactive graphics system - software, Figaro+, for 80386 and 80486 personal computers running Unix and X-Windows: an RS/6000 edition will follow.

The pharmaceuticals division of UK high-street chemist Boots Company plc, is taking the open systems pill, investing in £800,000 worth of Hewlett-Packard HP 9000 series equipment running Oracle financial software.

Sun Microsystems Inc has won a \$4m contract with the state-owned Paris-based financial house, Caisse des Depots & Consignations - the order includes 30 Sparc servers and 67 Sparcstation 1+s running Teknekron Software Systems' trading room software.

Software Ireland, Newtownabbey, Northern Ireland, has signed up the Buenos Aires, Argentina, firm Novadata, to distribute its Unibol/RPGII migration software in South America: Novadata - a subsidiary of Liquid Carbonic International - has won orders with the local government of Neuquen and the Telam SA news network for the package.

In the UK, London firm TCAM Systems Ltd has launched a new Unix-based financial trading system, Arbitrage Management System, AMS, developed by German outfit Infosoft Datenverarbeitung GmbH - no prices given.

Kettering, Northamptonshire-based Pegasus Group's Informix-based business accounting software, Pegasus Nine, will be available on IBM's RS/6000 by the end of this month, the company says.

Ascot, Berkshire-based FSS Computer Systems and Software has released FSS Powerman - a combined software and hardware package for shutting down Unix computers in an orderly fashion when a mains failure occurs: prices start at £245.

The Congress of People's Deputies of the USSR - the Soviet parliament - has a new computerised voting system from Dutch firm Origin Technology in Business: based upon Motorola 68020 technology with a Unix-like real-time operating system, it can be used by up to 6,000 delegates and can display information in a variety of character sets, including Cyrillic - systems integrator OTIB began life last June after the merger of the internal software division of Philips and Dutch systems integration company BSO; it has a UK office in Redhill, Surrey.

NeXT Computer Inc is setting up in Germany - the operation, based in Munich will be headed-up by Helmut Blank, who hopes to capture some 20% of the German Unix workstation market, but to do that the firm will have to sell some 5,000 machines: eight distributors at so-called NeXT Centres will be signed up by the end of the year - four are on-stream already.

What's behind Hewlett-Packard Co's sudden breaking of ranks and joining forces with arch workstation rival Sun Microsystems Inc on object-oriented technology? The New York Times highlighted some unhappiness at Go Corp over the fact that it went to Microsoft Corp in its early days, discussed its plans and asked the company if it would be prepared to write applications for the pen-driven operating environment it was developing, and was disconcerted when Microsoft later announced that it was developing its own rival pen-driven environment: as for Hewlett-Packard and its Sun deal, word is that the company was concerned that take-up of its object-oriented NewWave extension to Microsoft Windows was not getting the take-up for which it had hoped, and approached Microsoft and suggested a joint effort behind the environment, which it still believes is capable of sweeping the workstation world; the intimate discussions are said to have gone on for about a year, until last October, when Microsoft rejected the idea of joining forces on New Wave, and was soon announcing that the upcoming Windows 4.0 would include object-oriented extensions.

Bracknell, Berkshire-based Sherpa Corp on Thursday has a joint marketing agreement with IBM, to promote its product information system, Sherpa, on the RS/6000: the IBM deal follows a similar pact with Unisys Europe Africa to market the system on the S2000 Unix Sparc 4-compliant series two weeks ago, and with DEC in February to run on VAX, DECstation and Ultrix environments; Sherpa is aimed at vertical markets including aerospace, automotive, defence and consumer electronics, and its 80 worldwide customers include Siemens Defence Systems, GEC Plessey Telecommunications, Thorn EMI, Boeing Electronics and NCR.

Well yes, we had heard tales that the relational database market was fast becoming saturated but strange stories of desperation are beginning to emerge from ex-Oracle salesmen driven to cold-calling public telephone boxes to try and get a sale: the moral is beware answering public telephones - you could end up the proud owner of that database you never wanted.

Markyate, Herfordshire-based Strand Software Technologies Ltd has launched, a month behind schedule, its networking version of its Strand88 parallel programming language for Sun Microsystems workstations: this treats the network as a single parallel machine and, says Strand, enables users in the banking, defence and financial marketplace to develop and run applications on local nets before committing to lengthy executions on a supercomputer; this second Strand88 release, Buckingham, is out now.

Floating Point Systems Inc, which likes to call itself FPS Computing these days, reports from its base in Bracknell, Berkshire that it now has 18 European installations of its modular System 500 Unix minisupercomputers for the scientific and engineering arenas: European installations have doubled over the last seven months, which FPS Computing attributes to the recent addition of a matrix co-processor for parallel processing and Sparc compatibility to the System 500; Telefunken Systemtechnik GmbH has just bought two of the computers, and the Belgian universities of Namur and Liege have each installed a System 500 to support their activities in computational chemistry.

Ready Systems Inc, Sunnyvale, California has announced that VRTXvelocity ULX/68K is now available for DEC's DECstation family of products: VRTXvelocity ULX/68K is a software development and execution environment for real-time embedded applications; the host runs on RISC-based systems under DEC's Ultrix software, and the real-time application executes on Motorola MC68020 or 30-based VMEbus boards; VRTXvelocity ULX/68K is available now for MIPS R3000-based workstations, and licences start at \$147 in quantities of 100; single-user development licences start at \$21,500 with discounts for volume and multiple-licence purchases.

Cambridge, Massachusetts-based Cabletron Systems Inc and Cayman Systems Inc have formed a development alliance to integrate Cayman Systems' GatorBox AppleTalk Ethernet gateway into Cabletron's Multi-Media Access Center intelligent hub wiring series: Cayman's GatorBox, running the company's GatorShare and GatorPrint networking software, translates the standard network protocols that enable Apple Macintosh and Unix users to share files and printers transparently.

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SCI Systems will be making Opus' Personal Mainframe workstations, multi-user systems and PC add-in boards, including both Opus' Sparc products and its Motorola 88000 family. Opus is also moving to a larger headquarters in Mountain View, California.

VISystems is suing Unicorn systems for infringing on one of its patents relating to technology used in VISystems' VIS/TP transaction processing line, which allows CICS/COBOL applications and VSAM data residing on IBM mainframes to run on Unix platforms, generally without source code modification. Unicorn's Unix software, announced at Unix Solutions (UX No 311) allegedly infringes the VISystems' patent. VISystems is seeking an injunction and monetary damages.

Sun Microsystems Inc made a big splash at the CAD/CAM show in Birmingham last week by sponsoring the Sun Village of some 40 suppliers of Sun hardware, software and peripherals: new products include Amtech's PacerLink communications product for Sun, Hewlett-Packard and Macintosh workstations, and an early UK showing of RDI Corp's Brite Lite Sparc portable, distributed by Productivity Computer Solutions Ltd of Wakefield, Yorkshire.

Reto Braun, the Swiss executive now charged with cleansing the Augean stables in his new post as president and chief operating officer of Unisys Corp is one of those bosses that regularly telephones his company to check the kind of response his users are likely to get: he told the Wall Street Journal that too often he finds he's unable to get through to the person he wants and gets shunted off to the phone mail system - "and when I get upset, I don't like to yell at a machine".

Making it a little more likely that AT&T Co will succeed in getting the 80% shareholder vote it needs to replace the entire NCR Corp board, US District Judge Walter Rice, sitting in Dayton, ruled that NCR's proposed Employee Stock Ownership Plan is invalid: he described it as "making a mockery of the upcoming election" for directors and criticised the haste with which it had been drawn up; he also found that it was unfair to existing shareholders; AT&T stepped up the heat and told NCR shareholders that it would raise its bid to \$100 a share if they voted to overturn the entire NCR board; it is thought that 30% of NCR shares are now in the hands of arbitrageurs, 50% with institutions, the balance with individuals.

UK, Cambridge-based Acorn Computers Ltd's R260 workstation running its RISC iX 1.2 Unixlike is now compliant with X/Open Co's XPG3 base profile portability guide - RISC iX is derived from BSD 4.3. And just so you know that we too like to keep up with the standards here, RISC iX is the platform upon which Unigram.X is currently being written - its published using Toronto, Canada-based SoftQuad Inc's dtp package.

Motorola Co's RISC supporters club, 88open, has garnered some extra open systems credibility following a deal it has struck with X/Open Co to act as testing centre for adherence to the X/Open's range of software compatibility standards, and to distribute the guides.

The latest advance specification from X/Open is a snapshot of its Security Interference Specification: Auditing and Authentication - it identifies extensions to base operating systems where additional auditing is required.

Everyone knows its happening, but many refuse to believe the devastation it threatens to IBM's bottom line, particularly if it continues to bleed its mainframe users dry with software price increases way ahead of inflation rates: the Wall Street Journal reports that instead of installing the bank of IBM mainframes it would have needed 10 years ago to track the history of all its tickets rather than just a sample 10%, Northwest Airlines settled for a network of 600 Sun Microsystems Inc workstations and just one mid-range IBM mainframe - and a consultant working on the just completed project says that if it were starting now, it could probably dispense with the mainframe altogether, which suggests the RS/6000, by legitimising the concept of the super-powerful Unix workstation in the minds of IBM users, will actually do IBM more harm than good.

Sun Microsystems is bragging that IDC's latest number shows that 66% of the RISC market now belongs to the Sparc, with 17% going to MIPS (down from 21%), 8% to IBM, 7% to Intergraph and a poorly 2% to Motorola's 88000.

At this timely juncture, Compaq has recruited John Paul to head up its Unix product development, evidently a new task at the DOS clonemakers. Paul, whom Nixdorf lent to the Open Software Foundation in the early days as development director, is leaving the US side of the combined Siemens-Nixdorf Information Systems where he's been executive VP and general manager of Research and Development.

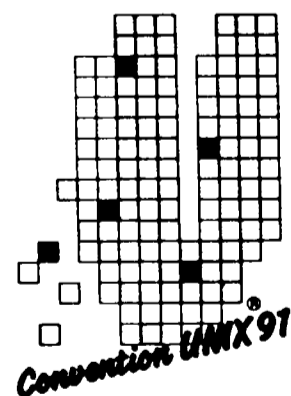
The last seat on the Object Management Group's Task Force to start the selection process for the Object Request Broker has been taken by Intel Corp which has just joined the Group as a corporate member - there had been conjecture that the Group was holding a seat open for IBM, but chairman Chris Stone is adamant that there are no more seats available on the Task Force.

The Object Management Group looks set to find itself beset by controversy: it seems that Microsoft Corp is about to make a joint submission with DEC for the Object Request Broker - joint submissions are allowed but have to involve a company with a submission already in the ring; this marriage of convenience has looked a possibility for a while, since the engineer at work on developing the New Technology kernel for Microsoft is none other than Dave Cutler - chief architect of a certain VMS operating system; strange bedfellows Hewlett-Packard Co and Sun Microsystems Inc have already teamed up on a submission.

Saber software says initial sales of its new C++ programming environment Saber C++ exceed a million dollars for the first 45 days of shipments, more than twice the revenue the product was expected to generate during the entire first quarter. A single-user copy of the stuff goes for \$4,000.

The industry is going to lose one of its most eligible bachelors this week when NeXT chairman Steve Jobs, 36, marries Stanford business school co-ed Laurene Powell, 27, in Yosemite National Park.

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**4th edition
March 26-29, 1991
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BIRP, 33 (1) 47 42 20 21.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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- 2 APR. 1991

The weekly information newsletter for the UNIX ® community worldwide

London, April 1-5 1991

Number 327

NEW INDUSTRY TCP/IP COOPERATIVE "WILL CHALLENGE OSF'S DISTRIBUTED COMPUTING ENVIRONMENT"

Just when you thought you'd heard the last of Unix consortia for a while, the Connectathon interoperability show in San Jose, California, last week threw up yet another industry grouping, this time aligned around that old nut - distributed computing. The ONC/NFS Development Cooperative has been formed by five North American TCP/IP network software vendors to develop applications based around Sun Microsystems Inc's Open Network Computing/Network File System. Their effort is at the very least the bones of a distributed computing environment that will rival the Open Software Foundation's distributed computing model, DCE, which - based upon the Network Computing System remote procedure call, RPC, from Hewlett-Packard's Apollo division - is incompatible with Sun's ONC/NFS RPC. Whilst ONC/NFS environments dominate the industry - DCE is only now coming to fruition, with useful technology thought to be anything up to two years away - at the time of its launch, OSF created a storm by ignoring Sun's submission to its request for distributed computing technology, (UX No 280). The five - TGV Inc, Santa Cruz, California; Interlink Computer Sciences Inc, Fremont, California; InterCon Systems Corp, Herndon, Virginia; FTP Software Inc, Wakefield, Massachusetts; and Canadian outfit Beame and Whiteside Software Ltd, Dundas, Ontario - represent a broad cross-section of the industry, and will pool their resources to create applications using the ONC/NFS RPC allowing Unix, MS-DOS, VAX/VMS, OS/2, Microsoft Windows, Macintosh and IBM mainframe users "to share resources and create a distributed computing environment." Applications will include electronic mail systems, system backup software and database and printer support services. Written using Sun's RPC, the applications will run across different hardware platforms using the de facto TCP/IP, Transmission Control Protocol/Internet Protocol, networking standard. However, unlike the current crop of industry gangs, the Cooperative says it is not in the business of attempting to define another standard - "we're not a standards-making body or a formal corporate entity, we're not an OSF, we have no logo - no nothing," said one spokesman. The group has no standing committees or membership fees, and the applications will be built entirely on public domain software.

Encouragement from Sun

Although Sun will have no direct involvement in the development efforts of the Cooperative, it has given its blessing to the effort in as far as saying "we encourage it," and by turning over more of its RPC technology into the public domain as the group was announcing itself - see page two. A reference port of each application will be published, along with protocol specifications and an application programming interface for developers. The five will incorporate the base technology into their products, for which some - most likely the personal computer and Macintosh software suppliers - will charge, whilst others, like TGV will offer free. Applications and specifications will be delivered by the time of the Interop '91 show in San Jose in October - there are still some record locking and print re-direction problems to be addressed - but many are expected well within that timeframe. The Cooperative is the brainchild of David Kashtan, president and founder of TGV Inc, which supplies Multinet, a TCP/IP connectivity application for DEC VAX/VMS systems, with input from Peter Dawes of UK, Cambridge-based firm Unipalm Ltd. Dawes says Unipalm, UK distributor for TGV, FTP and Beame and Whiteside, will contribute to the Cooperative's effort.

FPS LAUNCHES FIVE SPARC SUPERCOMPUTERS

The first Sparc-based supercomputers and high-performance servers, the five new members of FPS's 500 series, make their official debut this week as scheduled (UX No 325). FPS believes the machines could irrevocably change supercomputer marketing because of their built-in access to the thousands of Sparc programs already available. No other supercomputer can claim an application binary interface compatibility or the inherent scalability that FPS can, according to the company's vice president of new technology, Drew McCrocklin. Details on page two.

THIRTEEN COMPANIES SHARE A QUARTER OF USL UNIX CAKE

On April 3 in the US and Europe - April 4 in Asia - AT&T is to announce who the new co-owners of Unix and Unix Systems Laboratories are. Thirteen companies have bought a share, (UX No 325), but reportedly the names of only 11 will be made public on Wednesday, foreign government stamps of approval still being lacking in two cases. Novell of all companies supposedly bought the largest single stake but exactly how much that is is being kept secret as are the exact number of shares owned by all the others. However, no company was offered more than 4.8%. Other US companies shelling out for Unix are Amdahl, Motorola and Sun, where AT&T has a substantial stake. European companies include ICL, and Olivetti, where AT&T again has a substantial, albeit now an indirect, investment. The Japanese co-owners include NEC, Fujitsu, Toshiba and Oki Electronics - plus one. As predicted (UX No 318), the Fujitsu-led contingent which consists of itself, ICL and Amdahl, two companies Fujitsu owns big pieces of, has garnered the largest combined block of stock, and since it will doubtless be voting in unison, the most influence, second only to AT&T's. The sell-off is believed to represent over 20% of USL but not the full 30% it was shooting for. With USL valued at \$325m, (UX No 318), what was sold will bring AT&T over \$65m. Further tranches are now expected until at least 30% is sold.

OSF PRESSES IEEE FOR DE JURE MOTIF STANDARD

The Open Software Foundation has submitted Motif to the IEEE for a direct ballot as the de jure graphical user interface standard, and says the OSF user environment special interest group has volunteered to participate as the ballot review committee. In its press release, OSF says "the proposal represents a concerted effort to finally resolve issues that have undergone long debate in the IEEE process." However, the move will doubtless only result in heating things up, since AT&T is expected to try to counter it by submitting Open Look as the standard. OSF's proposal offers the Motif Style Guide and Application Environment Specification as the basis of the standard. OSF anticipates having a base document ready for first ballot in July.

FPS SPARC SUPERCOMPUTER CHALLENGES CRAY AT 2,240 MFLOPS

Currently, other supercomputers as marketed by an FPS competitor such as Convex are still basically proprietary, FPS argues, though based on Unix. Ports of applications software such as a database cost as much as a million dollars, a cost that is passed along to the customer. With a Sparc-based engine, says senior product manager Carolyn McClain, it's now simply a matter of buying a shrink-wrapped package. At the high end of FPS's offering is the SPARC supercomputer 500SA3, what FPS calls an integrated heterogeneous supercomputer that modularly integrates dissimilar processor types - scalar, vector, parallel/matrix and application-specific co-processors. It reportedly provides 2,240 MFLOPS performance, field upgradable to 13,440 peak and capable of outperforming a Cray Y-MP/8. The SPARCsystem series 500SC1 processes scalar portions of applications on the one-to-eight ECL Sparc chips running from 67MIPS to 533 MIPS. In addition to symmetric multiprocessing, all or some of the processors can be applied to a single task, introducing fine-grain parallelism to the Sparc world for the first time. The company's 500SD4 file server features multiple Sparc scalar processors doing over 267 MIPS, and offer 300Gb of disk storage at sustained transfer rates of 128Mb per second. The boxes run SunOS which FPS has merged into its own Unix implementation as well as Open Look and ONC. FPS and Sun have a more intimate relationship than most of Sun's co-marketing partners and Sun is expected to bring FPS into customer sites that Sun's own lower-end Sparc machines cannot yet address. Sun's director of corporate technology marketing Bill Keating foresees the FPS 500 used much as a server networked - in a distributed computing fashion new to high-end scientific and engineering applications - to Sun Sparcstation graphics workstations doing pre-level price to half of what was originally anticipated it would be, (UX No 287), has already pre-sold a number of machines to 10 customers including Canon, Telefunken, UCLA, the university of Namur and Veritas Seismic. A minimally configured 500 machine goes for \$450,000 with a full-blown system selling for around \$4m.

SUN PUTS TRANSPORT-INDEPENDENT RPC INTO PUBLIC DOMAIN

Sun last week put the latest version of its transport-independent TI-RPC in the public domain, as it has done with previous versions, and made the source code available to all via Internet. This new TI-RPC, co-developed by Sun and AT&T as part of Unix SVR4, is compatible with the existing ONC RPC but permits applications to be insulated from the underlying network transports and independent of the operating system. Hence, applications written for TCP/IP networks will run unmodified over OSI-based networks, easing migration to emerging OSI standards. Because, as the first transport independent RPC available, it runs on both NCS and ONC, Sun expects it to be the base of the development effort it has recently pledged to undertake with Hewlett-Packard to come up with a common RPC, (UX No 323). The TI-RPC has been endorsed by Netwise, which will support it with its tool compiler, and by Novell which demonstrated it last week at Connectathon in California running on Netware 3.11.

OSF MEETS TO CONSIDER SCOPE OF DME...

As near as we can make out - thanks to the veil of secrecy the Open Software Foundation likes to draw across even the rudimentary working of its RFT process these days, the meetings it has scheduled for April 8 and 11 in the US and Germany, (UX No 326), won't even get around to preliminary review of the Distributed Management Environment submissions it's currently considering. Instead the meetings have been called to consider the very scope of the DME RFT itself. The OSF has prepared a white paper or "Scope Document" evidentially based on the results of a questionnaire it circulated among its membership some months ago, whose merits will apparently be debated by those assembled including submitters, consultants, industry analysts and OSF's own DME technical team. Sources with access to the document say the scope of the DME RFT has been vastly widened since it was first published back in August and now includes a long and perhaps unwieldy checklist of network and management facilities and framework originally called for. New, for instance, are items such as configuration management as in Kernel devices, file systems, network protocols and Streams, OSF/1 services, accounting error logging, loader, mail printer, user, DCE services such as naming and time services and authorisation, and management applications such as monitoring and control, distributing printing, distribution licensing services and software distribution. In the document OSF itself admits that its members are split into camps of strong and contradictory opinion with vendors wanting to limit the RFT's scope to only what is necessary and users demanding management applications. With the basic nature of the RFT thrown open to debate, observers predict the meetings could turn into free-for-all with everyone jockeying for position. An RFT such as the Scope Document suggests would probably also put OSF in the position of canonising particular third-party applications at the expense of others.

...AS BULL SAYS FOUNDATION IS NOW "SMARTER AND WISER"

And in response to last week's front-page item on the due process and progress of the DME, (UX No 326), Groupe Bull's Ashley Stephenson, from the company's corporate strategy and planning group - responsible for all things OSF at the moment - confirmed, as we suspected, that a report in the *Information Week* magazine citing the existence of a shortlist of preferred technologies, is premature. However Stephenson admits that there are some "six significant submissions," which embrace an overall base technology, plus others that will likely be pulled into the finished offering. The ranks of the four-company effort, which aside from Bull includes IBM, Hewlett-Packard and Siemens-Nixdorf, is likely to grow with the addition of technology from other firms over the next few months. OSF, which has been criticised in the past for favouring submissions predominantly from its founder members in its other technology requests, is now "smarter and wiser," says Stephenson, who expects the final cut of DME to include technology from independent software vendors as well from other outside suppliers. Indeed he is confident that "ISVs will determine the success of submissions". Bull, which is contributing a Systems Management Services application programming interface to the effort, says the technology incorporates established standards, as well as anticipated future standards such as X/Open Co's proposed interface to management services.

STARDENT ABANDONS STILETTO, OFFERS CUSTOMERS SYSTEM 750, NEW DESKTOP SERIES "SOON"

Stardent Computer Inc, Concord, Massachusetts, which as far back as September 1989 was talking about its ambitious RISC plan to marry MIPS Computer Systems' R3000 chip with Intel Corp's 80860 in a single visualisation system - the Stardent 500 Stiletto series - has thrown in the towel on the project, citing "the complexities associated with the vector integration unit of two unique and different processors, the Mips 3000 and Intel i860, as key obstacles in the development." "We had serious difficulties" was the way one Stardent spokeswoman summed up the problem. The project was seen as an attempt by the company to finally reconcile the product lines of the former Ardent Computer and Stellar Computer graphics minisupercomputer makers, which came together to form Stardent back in September 1989, (UX No 247). Stardent president Bill Poduska said the "while we regret the inconvenience this has caused our customers, the development efforts on the next-generation of desktop visualisation products have progressed to the point where it no longer makes sense to pursue development of the 500." The Stiletto, several of which had already been shipped to beta sites - and many of which had been on order since its announcement last September - was to have incorporated Ardent's MIPS-based Titan technology running Stellar's successful Application Visualisation System graphics software, whilst also providing support for DORE, Ardent's Dynamic Object Rendering Environment. Stardent, which started life as a minisuper maker, was pitching the Stiletto 500 series as a mid-range machine. The new range of desktop graphics systems - being readied for the "near future" - will bring its product focus even further down the market. Despite the failure of the Stiletto project, the new systems are still likely to use the i860, as Stardent has already transferred future development rights of the MIPS-based systems to its biggest investor, Japan's Kubota Co, which holds a 28% stake in Stardent, and has a 20% holding in MIPS. Stardent's latest product, the one-to-four processor 3000VS, (UX No 301), is an enhanced Ardent 3000 system running Stellar's VX graphics subsystem, built around the Mips R3000 part. Whilst awaiting the new desktop range customers are being offered a Stardent 750 system - the so-called "Baby Titan" - a cut-down 3000VS with one or two-processors developed and manufactured by Kubota, for the price they would have paid for the 500. Poduska says that 70% of those customers which had ordered a Stiletto have opted to take delivery of a 750 in its place. The 750 server has been available in Japan and the Far East for some months - it'll be out here in April. Rated at 32 MIPS and 16 MFLOPS with a SPECthruput mark of 52.8 in dual-processor configuration, the 750 runs Stardent's VX graphics subsystem and the AVS visualisation environment, Unix V.3, X-Windows and TCP/IP. Prices go from £41,000 to £116,400 - \$53,000 to \$152,000 in the US. A single-processor system with 32Mb RAM, 760Mb disk, VX graphics and 19" screen comes in at £63,700 - \$83,200.

MINIMUM INSTRUCTION SET FIRM TERAPLEX SHUTS DOORS

Teraplex Inc, the Champaign, Illinois-based company that was attempting to create a new class of Minimum Instruction Set Computing using a 65MHz microprocessor with fewer than 20 instructions, has shut up shop, (UX No 325). The fledgling company says that it found itself in economic trouble, but because of the US recession, was unable to raise further finance; it is unable to comment on the future and its deal with Atmel to build the MISChip.

NEW INTEL i860 "WITHIN 90 DAYS"

As expected, (UX Nos 326, 323), the next iteration of Intel Corp's 80860 RISC processor, the N11, will debut - along with other new additions to the silicon family - within 90 days, reckons *Electronic Engineering Times*. In addition to the N11, Intel is expected to reveal high-end parts for supercomputing and high-performance graphics applications, as well as low-end, low-cost parts for personal computer-based graphics environments. The existing N10, with one million transistors is followed by a two million-strong N11 - that in turn will be superseded by a five million transistor N15 part in 1993. However software problems persist, and Intel is said to be still beta-testing compilers for the N10 developed for it by Alliant Computer Systems - they were originally due in the middle of last year.

AMDAHL GOES ONE BETTER THAN AD/CYCLE WITH HURON

Finally realising its ambition to offer a comprehensive operating environment to the IBM MVS mainframe world, Amdahl Corp last week answered IBM's AD/Cycle with Huron, a development and production environment that runs under MVS - a UTS Unix version is coming that will also run on workstations. In contrast to AD/Cycle, Huron, 10 years in the making, is a production as well as a development environment and appears to have been developed around the data dictionary rather than having that crucial element added as an afterthought. Amdahl calls its data dictionary MetaStor, and it integrates data about data, data tables and Huron, all identified as objects. The MetaStor supports synchronous read-write access to heterogeneous distributed data in DB2, IDMS, IMS, VSAM and Model 204. Huron also includes its own relational database and all activities that occur in Huron are by definition transactions - and all transactions obey a two-phase commit protocol. The product clearly addresses the growing disenchantment with IBM's software pricing strategy, and seems to offer an escape route for MVS users to open systems. The product has been in beta test for some time - the release is Huron 1.16 - and the first named customer is American Express Travel Related Services Co Inc, which waxes lyrical about the speed of applications development and the resources required. Prices for Huron range from £387,454 to £1.0m, and it is available at once.

ADVANCED MICRO CLOCKS ITS Am386 MICROPROCESSOR AT 40MHZ

Having overcome the key legal hurdles to marketing of its reverse engineered version of Intel Corp's 80386, Advanced Micro Devices Inc has formally launched the first iteration of the Am386, and as it did with the 80286, is playing beat the clock. The Am386DX-40, in 0.8nS CMOS, is clocked at 40MHz where Intel's fastest 80386 uses a 33MHz clock, and is offered at the same \$306 price for 100-up that Intel charges for the slower part. It also has a low-power version with a standby mode, the Am386DXL-40 for portables, and is expected to come out with a reverse-engineered version of the 80486 in January. Clock speed on the part is expected to rise over the next eighteen months as AMD moves to 0.6 micron technology. Deliveries begin this week, with volumes expected by the third quarter.

NCR AND AT&T - TALKING STARTS, TALKING STOPS

Faced with last week's ruling that its proposed employee share ownership plan is illegal, (UX No 326), and a decision by the Federal Communications not to challenge the bid from AT&T Co on anti-trust grounds, NCR Corp finally agreed early last week to meet AT&T Co to discuss the latter's proposals. NCR said it wanted to explain to AT&T why it is worth more than \$100 a share, even though AT&T is not likely to offer much more than that. Not too surprisingly, by the end of the week the talks broke down with NCR saying that AT&T didn't seem interested in its product plans and projections and seemed to be going back on suggestions that it would negotiate up from \$100 a share, and AT&T saying that NCR didn't seem to be interested in negotiating.

...BUT WALL STREET WORRIES OVER VAST GOODWILL WRITE-OFF IF AT&T PROCEEDS WITH CASH BID

Almost everything AT&T Co has done outside its core telephone business since the break-up of the Bell System has quickly come to be seen as hasty and ill thought-out. Starting with the head-long plunge into computers and its deal that turned sour with Ing C Olivetti & Co SpA, through to its unnecessary antagonising of the Unix community that led to the split into two camps, to the joint venture with Philips NV on telecommunications equipment, the tale is no chapter but a whole book of avoidable accidents. And the bid for NCR Corp is beginning to be seen in the same light even before it has reached consummation. The *Wall Street Journal* has been looking at the on-going cost of acquisition of NCR for cash and finds that if AT&T pays only \$90 a share, the goodwill that will have to be written off is a daunting \$4,300m because NCR's book value is only \$1,800m. And where goodwill can often be written off over as many as 40 years, in the case of a high-tech company where assets waste rapidly because of the rate of obsolescence, 10 years is thought likely to be as much as the accountants will allow. That means that the acquisition for cash will lop \$430m a year off AT&T's profits for the next 10 years. The problem could be avoided if AT&T were able to get NCR to agree to a friendly merger on a pooling of interests basis - where AT&T would exchange new shares for those of NCR and no goodwill would arise. But it may be too late for that because the rules applying to a pooling of interests are strict with regard to equal treatment of shareholders. NCR's distribution of a special \$1 a share dividend because it couldn't buy in any more of its own shares while the bid was hanging over it may be deemed to have tainted a pooling and rendering it invalid. And the fact that since 1988, NCR has bought in 19.5m of its own shares but held them in its treasury rather than cancelling them means that they would have to be reissued before a pooling could proceed. The Employee Share Ownership Plan would have caused further problems, and still could if NCR's appeal against the ruling that it is invalid is upheld. All those problems could have been resolved if AT&T had persisted in its wooing of NCR instead of losing its patience and launching an ill-considered hostile bid. It is now clear that AT&T is unlikely to win the day with a bid of anything less than \$100 a share and may have to pay more, taking the effect on its bottom to \$500m a year or more. It wouldn't have the slam-bang headline hitting impact of a full-blown bid, but far more sensible would have been to persuade NCR to take over AT&T's computer business in return for a 30% stake in the enlarged company; such a deal would have required AT&T to bear the costs of trimming its computer business before the deal was completed, and AT&T would have likely had to inject some cash into the enlarged NCR to justify a holding as high as 30%, but NCR's chances of continued success would have been much higher in that scenario than as a sullen, defeated subsidiary, fearful of what mistake AT&T will make next.

SYBASE INTO SOFTWARE ENGINEERING WITH DEFT BUY

Emeryville, California-based Sybase Inc has acquired 22-employee Toronto company Deft Inc on undisclosed terms. The company offers design and development tools for building client-server applications for Unix and VAX relational database management systems. Currently, Deft runs in the Apple Computer Inc Macintosh environment although as the company and products become integrated with Sybase the product set will move to more familiar Sybase territory such as Unix and VAX workstations. However, Sybase's Keith Dixon says that Deft will not become a closed tool tied to the Sybase database - integration with Sybase will be improved but Deft will remain tightly integrated with Ingres, Oracle and Rdb. Sybase wanted to acquire Deft in particular because being based in the Apple environment it offers graphical front ends for design and development rather than being character-based - in future it will be making use of Motif and Open Look. It is also designed to support multiple database management systems and provides for automatic conversion from one relational database schema to another through its reverse engineering capabilities. The rationale behind the acquisition is to enable Sybase to provide a "one-stop shop" for users wanting a total SQL development lifecycle, via Deft, SQL Toolset and the SQL Solutions productivity tools. The company was founded in February 1988, and has sold over 1,600 development licences to over 400 companies worldwide. It distributes its products worldwide through direct sales, distributors and OEM customers. Founder Eric Goldman will become Sybase director of software engineering.

ICL INTRODUCES FINANCIAL SERVICE RETAIL SYSTEM

Although financial service industries, from high-street banks to building societies and insurance houses are gradually coming around to the idea of using open systems in one form or another, ICL's Financial Services Division last week unveiled what is essentially a personal computer/MS-DOS/OfficePower/Windows/LAN Manager-based financial services retail system - Omnia Branch. Targeted in its initial guise at building societies, application software has been put together by the firm's Omnia-ICL division and is designed to run most customer and internal services required by a local building society branch, from within a networked personal computer environment. The system communicates with corporate-level data-processing departments, databases and other external services via ICL's branch message controller software. A partial, Windows 3-based version of Omnia-Branch - mark one - is available now, mark two, with full Windows 3 functionality out at the end of the year. If required ICL, in conjunction with Heywood & Partners can also provide the system under Unix on its DRS 6000 box - called Omnia-NX. ICL Financial Services Division's Roger Dale hopes that many of the elements in Omnia-Branch will be incorporated into a global financial services architecture which ICL is due to unveil later this year. ICL says one in three UK building societies are now using Unix in one form or another.

UNIX IN FRANCE MOVES AT A LEISURELY PACE

by John Abbott

Visitors to Convention Unix '91 at CNIT in the high-tech La Defence district of Paris were few and far between on the first day of the show, but things picked up a little on the second day as the conference started. Initial visitors were denied sight of the Hewlett-Packard's brand new Series 700 workstation by a strategically placed sheet, and had to wait a day after the rest-of-the-world launch for a sighting of the machine. At the show, Olivetti repeated its launch of new Pyramid-based systems, and hardware at the show, with only a few exceptions, was of US origin. Of more interest was a range of home grown French software, including many graphical user interface builders and applications generators.

CHORUS SIGNS ONE MORE MANUFACTURER, REAL-TIME SET FOR SUMMER

Chorus Systemes SA, based in Paris, says that it has now signed up another major hardware manufacturer, but is not letting on just who it is. According to Chorus, things are going to plan, with revenues doubled over last year and the outfit "nearing profitability". Chorus, whose micro-kernel, message-based, Unix compatible operating system looks to be along the same lines as the Open Software Foundation's still speculative OSF/2 operating system, is selling to the data processing and telecoms markets in pretty much equal measure, and Chorus is now nearing a 50% split in business between Europe and the US, with the help of its Beaverton, Oregon office, set up last year. Next stop is the Japanese marketplace. Back in France, Nauhauser says that users are becoming more Unix-literate, influenced by open systems decisions from users such as Electricite de France, SNCF, France Telecom and Elf Aquitaine. Chorus plans to introduce its real-time operating system this summer. While not Unix-based, the Chorus real-time system will host the Unix development environment and utilities for developers working on real-time software.

LOCUS SHOWS PC INTERFACE FOR MAC

Locus Computing held the European launch of PC-Interface for Macintosh at the Convention Unix show in Paris last week, a major extension to the DOS/Unix integration tool that has now 200,000 installations worldwide. The product allows files, printers and other resources on a Unix host to be accessed transparently by Macintosh users using the Mac user interface. Along with the Mac server product, you also get a DOS server bundled in, allowing both DOS and Macs to use the central Unix system as a resource. The product supports Macs from the Classic up, and is compliant with AppleTalk Phase 2 standards. Connection is via the Mac's built in LocalTalk support or directly through an EtherTalk adaptor. There is also a built in Unix terminal emulator for the Mac, from Pacer Inc. Available from the second quarter on Interactive and SCO platforms, the product will later become available for the IBM RS/6000 and Sparc machines, with other platforms to follow depending on market demand. In Europe, Locus relies on companies such as systems integrations and connectivity specialists Synersoft of Paris for distribution and technical support.

E3.X GENERATES C CODE VIA MOTIF OR MS-WINDOWS GUI...

Strangely-named E3.X is a 50-strong, Lyon-based software house that sells on communications and graphical products developed at the French INREA research institute. Aside from the Ucom.X line of X.400 and X.500 message handling products, the company was exhibiting a new C code generator called Odis.X, which separates the code development portion from X-Windows, Motif and Microsoft Windows-based graphical front-ends, and also from the underlying database. Open Look, Mac and Presentation Manager drivers are also proposed. The C code can subsequently be adapted or enlarged by hand if required. The graphics portion is generated by draw and paint programs, and produces code written in a special graphical interface description language, which can also be hand coded. SNCF and France Telecom are among the early customers.

...AS NEWLOG PROVIDES FOR HIGH-SPEED CHARACTER-BASED WINDOWING

Meanwhile, Paris-based Newlog was demonstrating that character-based applications still have some life in them yet. The company has specialised in getting a PC-like windowing interface for character-based terminals to run as efficiently as possible with its multi-lingual Hyperface system administration and applications integration product line, which is OEMed and integrated by the likes of Altos Computer as Preface. At the show, Newlog was showing the latest iteration, NTerm, claimed to be a 100% ANSI, Xenix, SCO Unix and Interactive emulation product for MS-DOS, supporting a mouse. The memory resident program takes up 50 Kb of memory or less, and allows hot-keying between Unix and DOS. It will be available by the end of the second quarter. The company, which hints that its products are likely to show up internationally shortly via some recently signed OEM deals, also produces the SimonSays WYSIWYG word processor for Unix.

MOTOROLA 88000 MAKES A STRONG LOCAL SHOWING IN FRANCE

An exception to the preponderance of US-based hardware manufacturers at the show was Cetia - or Compagne Europeennes Techniques de Lingeniere Assiste - which has its headquarters in Toulon, France as well as offices on the East and West coasts of the US and in Japan. Cetia was showing its delayed 68040-based Cetia 1000 workstation, rated at 20 MIPS and 3.5 MFLOPS, as well as a 68040-based graphics controller board with up to 1600 x 1300 resolution which will be integrated into all Cetia machines from July of this year. And Cetia was also showing its brand new compact 25MHz, 88000-based Cetia 1825 single and multi-processor VME workstations. All include a 68040 graphics co-processor and 68030 I/O processor, but can have one, two or four 88000-based CPUs for performance of up to 100 MIPS. Unix-based machines are aimed at the software development market, but they also run Uni/RT or VxWorks for real-time users. Cetia has an OEM agreement with Dolphin for its top-end 9000 Series server. Other French companies at the show using the 88000 included Telmat Informatique of Soultz with its TR5000 Unix V.4 range, and Dune Technologies of Velizy, which has the 63030-based Dune 3000 and 88000-based Dune 8000 ranges, aimed, like Cetia at the real-time marketplace.

GIPSI FINDS NEW FUNDING

French X-Terminal makers Gipsi SA has solved its short-term financial problems by gaining new funding of 10 million Francs from investment firm Altus Finance, France Telecom subsidiary CAT and INREA, the French computer science research institute, (UX No 322). Altus becomes the major shareholder with 68.09% of the shares, while CAT gets 8.71% and INREA 2.58%. Gipsi has now received some 16 million Francs in funding. Original investor Bull SA, currently having financial problems of its own, did not come up with further cash. Any management and structural changes to the company resulting from the deal will be decided next month.

WHY FUTURE DISTRIBUTED SYSTEMS WILL LIKELY INCLUDE A LITTLE BIT OF ALVEY OBJECT TECHNOLOGY

by Katy Ring

It now looks as if the Object Management Group's request for technology for the Object Request Broker has turned into a two horse race between the Hewlett-Packard and Sun Microsystems submission of the Distributed Object Management Facility, and the soon to be announced DEC and Microsoft submission. It seems likely that the other companies with technology in the ring will decide to support one or other of the unholy alliances, with just IBM in a position to shake things up further. Ironically, both of these joint submissions borrow from work undertaken with Alvey funding, work that is represented by the only UK submission to the Group - Cambridge-based Architecture Projects Management Ltd with its ANSAware product.

From 1985 to 1989 the project ran in Cambridge under the technical guidance of Andrew Herbert with funding from the Department of Trade & Industry's Alvey programme. Half the staff were direct employees and half were seconded from sponsoring companies such as Digital Equipment Corp, Hewlett-Packard Co, ICL Plc, STC Plc, Racal Electronics Plc, Ing C Olivetti & Co SpA, GEC Marconi Ltd and GEC Plessey Telecommunications Ltd.

ANSA Testbench

All involved were researching ways to implement full distributed computing and to find an agreed international standard to which they could all work. In 1987 the group produced the ANSA reference manual, which is updated every year, and to prove that the architecture was viable, a piece of software was developed called ANSA Test bench, which demonstrated distributed computing between Unix, VMS and MS-DOS. The Testbench was made robust enough for sponsors to see the possibilities of the architecture. They were then expected to go and build their own software but they didn't, they took ANSA and used it as it was. In 1989 the funding began to run out, so it was decided that the consortium would be enlarged by going into Europe and getting Esprit funding. So it was that ANSA became part of the ISA project and welcomed more sponsors such as Siemens AG, France Telecom, L M Ericsson Telefon AB, Swedish Telecom, Chorus Systemes SA and Dowty/CASE Ltd.

Meanwhile, aside from developing specifications for distributed computing, the ANSA team was developing and supporting the ANSA software. The sponsors decided that the lab should be put on a more secure financial footing, so the company Architecture Projects Management was set up to continue its research and development work but also to take its software out into the commercial world. Taking advanced technology out to users is difficult, as managing director Mike Eyre explains, a system of relevance had to be built. This was done in Brussels at the Esprit conference last November when the Astrophysics Data System was demonstrated linking six databases and a working population of 600 users together. The system built by Ellery Systems Inc for NASA came in within time and under budget and worked. It was demonstrated by a Smithsonian professor who simply came on the stand and continued his research work as normal. The system's users have only to learn the interface and do not need to learn how to interrogate the remote databases. Following on from such successes, Eyre believes that an international standard for distributed computing will be agreed by 1994 and that distributed computing will be in use by 2000.

Aside from Esprit and the Open Systems Interconnection standardisation process, Architecture Projects is also working with US organisations such as the Object Management Group, the Open Software Foundation and Unix International. Architecture Project's technical director Andrew Herbert claims that 70% of the structure of the Open Distributed Processing model adopted by OSI is derived from ANSA material. Furthermore, as clear from the list of ANSA sponsors, Architecture Projects has allies in both the Open Software Foundation and Unix International. Herbert says that the feeling among members of Unix International is that Distributed Computing Environment has shortcomings, but that if they put forward their own model this would be seen as another split in the Unix community - see front page. Consequently, Unix International is concentrating on the next level of open distributed computing - how applications are to be written, working on the premise that he who controls the interface has greater control of the software. Herbert says that negotiations are ongoing with the Open Software Foundation, which may take out the bottom layers of ANSA and run them over the basic core of its distributed environment.

Great concern

Such a move would mean that the environment could work with other remote procedure calls and could therefore provide gateways between competing systems. For example, the ANSA Trader could be put on top of the environment, which when combined with Hewlett-Packard's Location Broker, means among other things, that the software gateways could be policed to stop unauthorised objects crossing networks. This issue is apparently of great concern to IBM. However, the Foundation seems to have some problems with the idea of opening up the key technology and product areas that this would involve and is undecided about its next move. In fact, as Herbert points out, the Object Management Group request for technology for the Object Request Broker has brought advanced products to the attention of the wider public and is "destabilising to the DCE world". For whereas, the Foundation and Unix International are dealing with this year's issues, the Object Group is really looking two or three years ahead. But because the Group agenda requests commercially proven products be submitted, many vendors have been caught on the hop and rushed out with incomplete offerings that will probably fall over when examined by the Group technical committee. And furthermore, IBM and AT&T have yet to cast their dice. But whatever happens there will probably be a little piece of Alvey in the distributed computing systems of the future.

ARCA BECOMES ACE, HARDWARE EXPECTED TO STEAL THE SHOW

The ARCA crowd, aka the Compaq/MIPS/DEC/SCO/Microsoft consortium, has finally decided on a name and will style itself ACE, short for Advanced Computing Environment or some such, when it goes public next week. When last we heard they were having meetings to rally their troops - that band of converts such as Olivetti and Bull that are expected to jump on their bandwagon when it rolls. The question is will it hit any ruts? Many of the 40 odd companies solicited for their backing may buy off on the hardware platform but give short shrift to the messy operating system solution on offer and opt instead to run Unix SVR4 - especially those like Siemens, Sony, NEC, Pyramid and Tandem that are already SVR4 devotees. That messy operating system is likely to be a version of Unix rather than Microsoft Corp's portable OS/2 (which isn't OS/2 in anything but name) - but an OSF/1-based Unix from Santa Cruz, derived from DEC's implementation of OSF/1. The group is also expected to adopt DEC's little endian byte ordering, used on the VAX and the MIPStations - and also on Intel iAPX-86 family personal computers, easing software portability problems, and differentiating it from Sun Microsystems Inc and most of the rest of the Unix workstation world, which uses big endian. Which bus has the group jumped aboard? Seems that the external bus will be EISA but that DEC's Turbochannel will be used internally, with the latter able to take VMEbus boards as well. The amount of DEC technology that appears to have been adopted suggests that DEC is already close to the spec with its newest MIPStations. Microsoft's New Technology strategy is said to be to develop a New Technology Operating System kernel which can support MS-DOS, Windows, OS/2 and Unix on top - but with which operating system's applications it will be most compatible with is open to question - the likelihood is that Windows and MS-DOS will fare best.

SUN TAKES A POP AT PICK

Sun will be taking a crack at the Pick base and piggybacking on to existing Pick value-added resellers as part of its overall plan to break into the commercial side of the market. It has signed a multi-million dollar agreement with Pick distributor Novadyne Computer Systems to seek an integrated solution consisting of Sun hardware and VMark or Unidata relational database software to its Pick resellers. The VARs will add their Pick applications before reselling to the user. Pick applications, a sizable and desirable base of business applications, including manufacturing, distribution, transportation and insurance, would be a significant contribution to Sun's application list. Novadyne will service and support the Sun hardware. Sun also announced last week its expected distribution deal with Arrow Electronics' commercial systems group, (UX No 325). Sun, which will control authorisation itself in this as in the Novadyne deal, wants commercial Arrow resellers with proprietary Unix applications to port over to SunOS and Open Look. As part of their arrangement, Arrow is to set up three printing centres in Ohio, Massachusetts and California. As predicted too, Sun's technical distributor, Access Graphics, will be taking over 75 of Sun's smaller commercial VARs, bringing the number of accounts Access supports to 275.

HEWLETT-PACKARD UNLEASHES SUN, DEC, RS/6000 KILLERS

In an aggressive worldwide launch, Hewlett-Packard Co last week set the workstation world on its ear, introducing its HP 9000 Models 720, 730 and 750, with the lowest one rated at 57 MIPS, 55.5 Specmarks, the higher two - with a 66MHz clock against 50MHz on the baby - both rated at 76 MIPS, about 72 Specmarks. HP's Mike Gallup reckons the boxes give the firm a nine month price/performance lead over the rest of the Unix workstation pack - at the end of that time HP will bring out low-end snakes, missing from this announcement. Gallup figures the new machines will stymie Sun Microsystems Inc at the top-end of the market and Sun's only recourse will be to push its low-end down, impacting its margins since the low-cost Sun systems don't bring in as much revenue as its servers do. Continuing the assault, HP described Sun's Sparc as a first generation RISC, claiming its own Precision Architecture part to be second generation RISC technology. All the new systems have 256Kb data cache, the 720 and 730 have 128Kb instruction cache, the 750, 256Kb. Memory on the lower two is 16Mb to 64Mb, the 750 goes to 192Mb. There are also server versions of all three, and three graphics options with GRX greyscale standard, CRX colour, Personal VRX for advanced three-dimensional modelling with solids and ray-tracing, and a faster Turbo VRX version. The chip adds features from the Apollo Computer Inc Prism development to the PA RISC, notably additional instructions, and there is a tightly coupled floating point processor with integrated arithmetic logic unit and multiplier, optimised for vector and matrix operations. The speed is helped by a bus that transfers data from cache to CPU at 264Mbytes-per-second. The 720GRX is £8,500 - \$11,900 - with 16Mb. There are also server versions of all three at £10,000 to £12,000, £15,000 to £18,000 and £29,000 - \$16,000, \$24,000 and \$39,700 in the US, and the company is introducing unified pricing across Europe, including the East - up to now, the local subsidiaries have been charging whatever the market will bear. HP attributes its ability to bring the boxes in at such prices to the level of chip and graphics integration - it declined to say how much it cost to develop them, but the technology contribution from Apollo is said to have been "seminal." In addition to the workstations, HP says its has a bunch of "very aggressive" X-terminal announcements coming up.

FUJITSU TEAMS WITH UK'S AFE ON GRAPHICS PROCESSOR

Fujitsu Microelectronics' Advanced Product Division has launched the MB86990 Graphics System Processor, developed jointly with UK, Birmingham-based AFE Displays Ltd. It is claimed to offer workstation and X-terminal builders higher performance than they would get from a dumb frame buffer - but at a cheaper price than existing graphics accelerators. AFE was using old Intel graphics technology and had been searching for a replacement architecture when it realised that what it really needed was a custom device. The part is designed to sit behind a CPU such as Intel Corp's 80860 like a co-processor and do the rendering - pixel writing - for graphics operations. 33MHz samples are expected in April - a 40MHz version will follow. Fujitsu reckons that a GSP, attached to the Sbus on a Sparcstation 1 - even with no supporting i860 - can boost X-Windows performance by up to 100%.

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What with Compaq now squarely in the MIPS camp, the only other high-volume design-win worth getting is Apple which for all its recent talk of abandoning its proprietary stance (UX No 326) is unlikely to join either with MIPS or with Sparc. The betting is it'll stick with Motorola's 88k for its RISC platform but probably tweak the chip in such a way that's not what other Motorola vendors are using.

Spectragraphic last week at Connectathon had X-Windows running under Windows 3.0: it's developed all the network, graphics and X server software needed.

Ten members of the X Consortium last week used Connectathon to test the interoperability of 3D capabilities based on the PHIGS extension to the X (PEX) protocol. Using PEX, Alliant, DEC, Evans & Sutherland, IBM, Silicon Graphics, Sony, Sun, Tektronix and Tyan - shared sophisticated high-quality graphics across a multivendor network, the first test of its kind. The X Consortium only made the PEX sample implementation available to its members two months ago.

VXM Technologies' brand new second generation load balancing software Balans (UX No 325) has gotten its first major customer site: Iowa State University will be running it on about 1,000 heterogeneous nodes. Balans is being designed as a drop-in enhancement to NQS, the NASA-developed Network Queuing System for running distributed batch jobs on Unix machines that seem to be on its way to becoming a Posix standard.

IBM-owned Cadam Ltd's electronic design automation division used the show to announce Premier PCB, a version of its P-Cad printed circuit board design software for Sun, RS/6000 and Intel-based Unix work stations: the version includes a graphical user interface, Prevue.

NCR Corp's Europe Group has created a large systems division to sell its parallel-processing 3600 and 3700 machines, which are at the high-end of its new Intel-based 3000 series - based in Frankfurt, Germany, its headed-up by Wolfgang Koehler.

Sigma Systems, the company that has taken over the fruits of the Sigma Project to develop a standard workstation and - Unix-derived - operating environment for software development, has concluded agreements with both the Open Software Foundation and Unix International Inc, and also with X/Open Co Ltd, with the aim of promoting the use of open systems in Japan: under the agreements, Sigma Systems becomes a member of both Unix International and the Foundation, they become affiliated to the Sigma Consortium, and all four will combine on a survey of Japanese users.

Fujitsu Ltd claims that its latest plasma screen, with 1,280 by 1,024 pixel resolution provides the world's largest display area: the FPF 20000S-001 is designed for use with workstations and as an X-terminal display; the screen is 3.5" thick, has its own memory and draws 25W of power using automatic power control circuits; Fujitsu is budgeting to ship 300 units a month this year and 1,000 a month from next year, at a cost \$4,347, with mass production beginning from mid May.

Data General Corp did not give away too much when it agreed to sell Nippon Data General Corp to Omron Corp a couple of weeks ago: the company stopped local manufacture under licence last year, and made a loss of \$11m in the year to September 30 last; it has been budgeting for a loss of \$7.3m this year on sales of \$90m; the 550 employees are mainly involved in management, development and sales; the present management - and the existing name - will continue, and Omron's plans joint development of workstations and other office products.

Sequent Computer Systems Inc warns that it will report a loss for the first quarter ending on March 29, 1991, confirming speculation by some industry analysts: it says that while revenues from OEM customers will be higher than originally expected by most analysts, its total revenues are likely to be significantly below expectations.

The drain of top talent from foundering Unisys Corp is becoming so serious and embarrassing that the company has had to start a bonus programme to try to prevent any more leaving the company: the company says in the proxy statement for its annual shareholders meeting on April 25 that the "retention incentive awards" were added to regular bonus programmes after the resignations, and that it paid \$480,000 this month to 84 executives who "made significant contributions toward the 1990 debt-reduction goals of Unisys and who will continue to work toward the 1991 debt-reduction goals" - but the company managed to cut its debt last year by only 6% to a still-daunting \$3,730m of very lowly-rated paper.

The Networking Centre Ltd, based in Hemel Hempstead, Hertfordshire has signed value added reseller agreement with Spider Systems Ltd; under the agreement Networking Centre will market Spider's range of Ethernet and Token Ring analysers: the Networking Centre specialises in local area network support and Open Systems Interconnection testing.

Leeds-based Computer Service Technology Ltd has launched a Unix-to-ICL communications system, enabling Santa Cruz Operation Inc Unix users to access files and applications on ICL mainframes via X25 or ICL's Oslan local area network; the product is actually owned by Hytec Ltd, but the version for Santa Cruz Unix was completed by Computer Service: initially the X25 and Oslan versions of the product will be available on the Altos 4000 and 5000 systems.

Fora Inc, headquartered in San Jose, California has launched a notepad computer, the NBS-386S: the 16MHz, 80386SX computer is available for \$3,000: NBS-386S is the first notebook to offer free file-transfer software that features an anti-virus detection and protection system; the SafeLink software uses a virus scan and virus-pattern bank to filter and identify any contamination of the files to be transferred;

Safelink has transfer rates over 500,000 bps, and the NBS-386S comes with 1Mb memory, expandable to 5Mb, as well as 64Kb ROM, an internal 3.5" 1.44Mb floppy disk drive, and a choice of 2.5" 20Mb (\$3,000) or 40Mb (\$3,500) hard disk drives; the product is configured with one parallel and one serial port, as well as ports for an external VGA display and keyboard; the NBS-386S measures 11" by 8.6" by 2" and weighs 6.4 lbs with the battery; the product supports MS-OS/2, Xenix, Unix, NetWare 286 and 386, and Microsoft Windows 3.0; other standard features include AC adaptor and power cord, and MS-DOS; options include 1Mb, 2Mb and 4Mb memory cards at \$200, \$365 and \$600.

NexGen Microsystems Inc's F86 RISC processor is set to ship in small sample quantities from June: Compaq Computer Corp made an \$8m investment in NexGen last year, and now the 50MHz part is being touted as a processor solution for future systems running MS-DOS, OS/2 and Unix - the status of NexGen's NexBus, with a bandwidth of 267Mb per-second, is less certain however.

TeleSoft is to port its Ada compilers and development tools to Intel's 80960 embedded RISC processor, and has also won a \$400,000 order to provide its Ada products for the UK's next-generation anti-submarine command and control system, the Surface Ship Command System.

Advanced IDAS Inc, Tustin, California, is to port its imaging software on to Altos Computer Systems' Unix kit - under the agreement Advanced IDAS also becomes an Altos value-added reseller. The software integrates image capture and indexing with text files, can accommodate scanners, laser printers and optical disk subsystems, and is aimed at banking, insurance, manufacturing and wholesale distribution industries. An initial version of IDAS, called SLIC, is being used on over 1,000 imaging workstations at General Motors and Honda dealers across the US, and the firm also has a contract to provide a similar system for the Space Shuttle programme in cooperation with Rockwell International.

UK, Cambridge-based IXI Ltd says will support its X.desktop software on OSF/1 running on DEC platforms - IXI says X.desktop did not require recompilation to run because standard Ultrix object code was moved directly over to OSF/1.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

- 8 APR. 1991

The weekly information newsletter for the UNIX ® community worldwide

London, April 8-12 1991

Number 328

APACHE UNIX SVR4 GROUP "TO RAID ARCA PARTY" WITH ABI SPECIFICATION FOR MIPS ARCHITECTURE

A renegade group of companies, referred to as the Apache Group, is bucking the leadership of the newly styled Advanced Computing Environment, ACE, consortium - more popularly known as ARCA, (UX No 327) - and is preparing to break away and form a consortium of its own even before the existence of ACE is officially acknowledged by its founders on April 9. This consortium within a consortium, a new twist even for the Unix industry, is likely to remain a secret for another month at least - some say because of the non-disclosure/non-compete pledges the Apache companies originally made to ACE. The Apache Group, believed to include Siemens-Nixdorf, Sony, NEC, Pyramid, AT&T Computer Systems, Prime and Olivetti - though others may be involved - is apparently interested in ACE's proposed hardware platform, to be built around the still non-existent MIPS Computer Systems R4000 RISC chip, but has little stomach for the systems software on offer, preferring instead to run Unix SVR4. The as yet unnamed 88open-style consortium they will form - with SVR4 champion Unix International as a member - is intended to ensure a Unix SVR4 MIPS reference port, continued compatibility of the MIPS Application Binary Interface with Unix SVR4 and inclusion of the system in Unix International's RoadMap. Indeed Unix System Laboratories is expected this Tuesday, the same day as ACE kicks-off, to put flesh on these bones with the announcement of an ABI specification for the MIPS architecture that will be available in May, followed by a reference port of Unix V.4 for applications running on MIPS R3000-based hardware. The port, a big-endian byte-ordering implementation, will suit most of the Unix workstation world, though sources say the ordering can be easily switched to accommodate DEC, MIPS and Intel iAPX-86 little-endian application environments. The ACE operating system environments the Apache companies seem to be rejecting - though some interested observers say the splinter group will not make itself known on April 9 in order to observe reactions to what is announced - are now reported to be Santa Cruz Operations' Open Desktop, and Microsoft's New Technology, or Portable OS/2. However, because it looks increasingly likely that SCO may also end up distributing the Open Software Foundation's OSF/1, some believe the base operating system will be SCO's System V 3.2 with a smattering of Ultrix V.2, Silicon Graphics' graphics libraries and maybe a few lines of OSF/1. However even with the announcement just a few days off as we went to press, Unigram.X was still tracking what appeared to be shifting sands: since the original ARCA gang of nine was unmasked here back in February, (UX No 321), Microsoft New Technology, DEC Ultrix, SCO Unix and Open Desktop - as well as OSF/1 - have all at various times had their turn as front-runners for the choice of operating system, or systems, that ACE will offer. Moreover, where exactly Compaq, one of the ACE keystones assumed from the beginning to be an adherent to the original Gibraltar gang, will eventually fall, will be interesting to watch - considering it has been heavily lobbied by AT&T's Unix System Laboratories to go with Unix SVR4. USL, the Open Software Foundation and X/Open are all understood to have been invited to the announcement.

UNIX SYSTEM LABS PLAYS TIT-FOR-TAT IN GUI STRUGGLE

To offset the Open Software Foundation's attempt to get the IEEE to declare Motif a de jure standard, Unix System Labs has, as we predicted last week, (UX No 327), submitted Open Look for a direct ballot too. And since OSF volunteered its user environment special interest group to count the vote, in tit-for-tat fashion, USL is offering Unix International's User Interface Group. Though it wants to forestall any juggernaut by OSF, USL says its response is more playful than serious. It would rather the IEEE back the common Application Programming Interface approach it originally suggested.

USL READIES "BINARY" UNIX FOR THE DESKTOP...

Without flying in the face of corporate culture that has restricted it to only licensing source code all these years, Unix System Laboratories will inch as near as it dares to distributing binary software when it unveils its first desktop product, hopefully in the fourth quarter. USL's Desktop Technology Laboratory aims to produce what it is calling a "Golden Master Binary" that, while still source code, will be compact and complete enough to shorten the normal turnaround time an OEM spends fiddling with it and adding extensions to it before putting it on the market from the usual endless months to just a few weeks. This method will speed up time-to-market without putting USL in the dicey position of competing against either its OEMs or distributors, according to Desktop Laboratory chief Don McGovern. USL's desktop effort is repackaging Unix SVR4 to accommodate a mass market \$5,000 desktop computer, shrinking memory requirements to 4Mb and disk space to 40Mb while moving some of the functionality of classic Unix like networking out into modules that can be added as needed, (UX No 300). The first version is understood to be for Intel Corp architecture and about six modules are contemplated. However, exactly what all of them will contain has reportedly not yet been settled. Also undecided is the all-important graphical desktop metaphor the system will offer, though the "plumbing" that will shroud it is already pretty much in place. Internal discussions are believed to be taking place this week aimed at sorting out whether USL will develop the metaphor itself or go outside for it. The Desktop Lab's number one priority is known to be ease-of-use, and something modelled along Macintosh or NeXT Step lines - if not the originals themselves - will be under consideration, although the ability to run a variety of GUIs, including Motif as well as Open Look is thought to be a key requirement. —

...READIES DISTRIBUTED COMPUTING REPLY

And in the wake of the Open Software Foundation's Distributed Computing Environment technology and the ONC/NFS Development Cooperative's effort to put together a raft of distributed applications based upon TCP/IP, (UX No 327), Unix System Labs and Unix International will next month enter the fray with their own distributed computing platform which has been a year or more in the making. USL vice president Joel Appelbaum said the architecture will be different from OSF's solution in the breadth of problems it addresses and in the way the whole issue has been approached - however little of any substance has so far been revealed. Appelbaum said the key enabling technologies of the solution will be interface definitions - rather than polished applications - and that the emphasis of the project is on the ability to integrate many kinds of systems, especially at the low-end, into a common architecture. It will also include interfaces to some, or all, components of OSF's DCE.

WHY DEC AND MICROSOFT ARE NOT SUCH STRANGE BEDFELLOWS

by Maureen O'Gara

Why is DEC - by its participation in the ARCA consortium - encouraging the development of a standardised product that will let Compaq compete against DEC workstations and minicomputers? Why does DEC appear to be encouraging Microsoft to use key VMS technology such as the VMS notion of integrated networking and distributed file system support in its anticipated portable OS/2 operating system? The answer, according to Marc Schulman of the New York office of UBS securities, must be to get the Microsoft portable OS/2 also known as OS/2 3.0 or NT, the operating system ultimately intended for the MIPS/ARCA platform, implemented on its expected RISC VAXs. Nothing else would be of sufficient magnitude to merit sharing its technology and paving Compaq's way into the market, Schulman says. On March 20, Schulman put out a wonderfully insightful bulletin aptly titled "Microsoft and the New order in the Computer Industry" that is bound to be well read by the industry - so much so that our advice, in the immortal words of Abbie Hoffman, is "Steal This Book", if you can't come by it honestly. Schulman claims there is a huge technology transfer underway with DEC trading its expertise in multi-vendor networking - and likely integrating Microsoft's OLE technology into its Compound Document Architecture - for the ability to run Windows on the RISC VAX. In part it's because OS/2 3.0 is a migration path for IBM's OS/2 2.0. NT running on RISC VAXes would let DEC raid the IBM fold. In addition, if it trades its technology for Microsoft's power of proliferation DEC finally gets to become a major desktop player. Schulman's diagnosis traces the disintegration of the IBM/Microsoft alliance, the reference point for many of the other alliances in the industry today, to Microsoft's realisation that it has replaced IBM as the "ultimate proliferation." Couple that with IBM's decreasing commitment to Microsoft-style hardware and the fact that it's expected to introduce low-end RS/6000s that overlap in price with high-end PS/2s soon, and you have a scenario for some of Microsoft's testiness. Its ambitions account for the rest: the need to spread Windows and Windows applications on non-Intel hardware, its coziness with DEC and the ARCA consortium - which represents the ability to sell at least a million units - its antipathy for Sun and other desktop Unix vendors who compete for Microsoft turf, and its three-tiered operating system strategy of MS-DOS at the low-end, Windows in the mid range and Windows - or Unix - running OS/2 3.0 at the high-end, countering SunOS, OSF/1, Unix SVR4 and SCO Open Desktop.

SHERPA WINS UNIX CAMP FOLLOWERS FOR ITS PRODUCT INFORMATION MANAGEMENT SYSTEM

Sherpa Corp of Bracknell, Berkshire has recently been active in recruiting large Unix-based system manufacturers to market its eponymous enterprise-wide product information management system. Following earlier joint marketing deals with Hewlett-Packard and Sun Microsystems, \$6m-a-year Sherpa in February signed with DEC to implement its system on the VAX, DECstation and Ultrix environments, and with Unisys' Europe Africa Division shortly afterwards, to promote the product information system alongside Unisys' InfoImage Engineering Document Management System on the company's Solbourne-made S2000 Unix Sparc 4-compliant system. And Sherpa's latest coup is becoming an authorised software vendor for IBM, marketing the Sherpa package on the RS/6000. First shipments of Sherpa for the IBM workstation are scheduled for the third quarter. A product document image system, explains Sherpa's John Moore, is a set of applications that can be tailored by the user to manage any information that describes a manufacturer's product, in the form of computer-based files and attributions about the files which inform the manufacturer for example where a drawing is kept, or when test results were last updated. Sherpa Corp, which has a strong distributor in Cap Gemini Sogeti in Italy, and is represented in the UK, France, Australia, the US, shortly to set up in Germany - claims to have 50% of the market for product information management systems and says that no other software supplier has come up with a product as powerful and integrated as Sherpa, but the company reckons that computer-aided design tool vendors will soon start to encroach on Sherpa's market share with value-added offerings and, at the mainframe level, IBM's Product Manager concept could pose a threat. Sherpa is pitching at aerospace and defence businesses, telecommunications and computer suppliers, and its 80 worldwide customers include Philips NV, GEC Plessey Communications, Thorn EMI, NCR in Scotland, Siemens Defence in the UK and Boeing Electronics.

SIGNAL WAS SO IMPRESSED WITH ILOG'S

GRAPHICAL INTERFACE TOOL IT TOOK IT ON

Guildford, Surrey-based Signal Computing Ltd is moving into the graphical user interface environment thanks to a marketing agreement it has signed with French system house ILOG SA. Signal is a bespoke software house operating in the technical market with its roots in the defence industry, building applications in areas such as signal processing. Signal is part of the Basys group of companies that specialise in broadcasting systems. It was looking for a tool to use internally to build graphical user interfaces and discovered ILOG's product set, which was not available in the UK. Signal was so impressed by the company that it decided to take on exclusive distribution rights for the product. ILOG is based in Paris and currently has 70 employees, net profits of \$935,000 on a turnover of \$7.5m, and has sold 3,200 licences worldwide for the tools. ILOG is in charge of developing the product and leaves independent software vendors to handle most sales and to tailor end-user products. The product set of modular tools is written in Le-Lisp and a package including the Aida graphic library designed to simplify interface programming and the accompanying Masai development environment costs £15,500. Signal is also marketing ILOG's Asquell product, designed to interface applications to any SQL database, although Empress, Informix, Ingres, Oracle, Rdb, Sabrina, Sybase and Unify are fully supported. The company claims that Asquell applications are fully portable, so that, for example, an application developed on a Sun-3 workstation using Oracle can also run on a DECstation 3100 with Ingres. ILOG also claims that Asquell applications can communicate simultaneously with several databases, even when these belong to different database management systems. Sold with Le-Lisp, Asquell costs £5,000. Aida and Masai between them require about 8Mb of memory, while Asquell needs only 200Kb. The products run on most mid-range Unix environments, as well as Apple Mac IIs. The graphical interface products can generate Motif or Open/Look and interface to C or Fortran programs.

TADPOLE TAKES ON RDI WITH BATTERY-POWERED SPARCBOOK

The first battery-powered Sparc-based notebook is currently in the works and should arrive in volume by October, brought to market by UK-based Tadpole Technology, the latest of the Sun-compatible builders. The product, which will vie with RDI's heavier, more expensive Sparc/MS-DOS/Mac laptop and its co-marketing arrangement with Sun, is the Unix pioneer's first foray into Sparc systems. Tadpole's design, developed at its Cambridge headquarters, uses a 25MHz LSI Logic Sparc chip encased in a 8.6" x 11.8" form factor weighing 5.5 lbs including a standard built-in 2400 baud modem - though only on the US models. Tadpole claims the thing, priced at \$6,000 will do 18 MIPS. A standard configuration will include 8MB to 32MB RAM, a 120MB hard drive - 200Mb by early next year - a 1.44MB 3.5" floppy, a backlit monochrome VGA screen getting 640 x 480 pixels and notebook-style keyboard complete with built-in tracker ball. Battery life is typically four hours in one stint and the thing automatically saves everything in a power down situation - you also don't have to reboot the operating system to recover. SunOS is bundled and preloaded - unless you ask for Unix SVR4 - and optional MS-DOS emulation is provided by Insignia Solutions' SoftPC technology. The company's US arm plans to sell it direct through its offices in Austin, Texas and Silicon Valley. It could start appearing in July and will come from England, but if the product proves viable Tadpole could start manufacturing in Texas. The initial model is dubbed the S1 - SparcBook, subject to approval. Volumes projected for the SparcBook in 1992 total 45,000 units - 15,000 each in the US, Europe and Japan. There are at least two other family members planned above this one, which will use more powerful Sparc chips. The company says the unit will run X-Windows and Sun 1152 x 900 applications without modification. It has been some time since Tadpole, which is doing board design with Motorola's 88000 and Intel's i860 and i960, has brought out a complete system: it has never worked at the portable level before.

NEURON DATA FIRES OPEN INTERFACE INTO GUI WARS

Latest firm hoping to cash in on the graphical user interface wars is Neuron Data, Palo Alto, California, which claims that its Open Interface tool kit will allow users to create a single graphical user interface for an application, then port the application, together with the GUI, to other workstation and personal computer environments, including the Apple Macintosh. Out this month, Open Interface is written in C and is reckoned to be a superset of all widgets and functions of all major windowing environments. The tool kit generates portable C code which can be linked to libraries which provide the look and feel of particular GUIs like Motif or Open Look. Run-time licences start at \$250 for MS-DOS and Mac, \$350 for OS/2 and \$500 for VMS and Unix. Development licences go from \$7,000 on MS-DOS and Mac, to \$9,000 for OS/2 and \$12,000 for VMS and Unix.

IXI MOVES IN ON VISIX TERRITORY, WINS DATA GENERAL, TATUNG

IXI Ltd has gotten both Data General and Tatung Science and Technology to go with its X.desktop software worldwide. The Data General account is the first time the UK, Cambridge-based desktop specialist has managed to muscle in on turf controlled by its US competitor Visix Software. Data General wants the simpler X.desktop software for its commercial AViiON users and will also continue to supply Visix's Looking Glass but not bundled the way it had been. Tatung, which expects to sell it predominantly in the US and Taiwan, will bundle X.desktop on its systems.

ICL ADDS LOW-END UNIX SYSTEMS...

Providing a migration path for users of its DRS 300 Concurrent DOS systems that are to be phased out later this year, ICL Plc has added two new Unix systems. The 80386SX-based DRS M55NX supports up to six active users running Officepower and says that its DRS 300 users can carry over all terminals, peripherals and cabling. It also has software migration tools. It costs £5,000 with 8Mb, 200Mb disk and tape streamer, from June. The other machine is the DRS CCU cluster controller, which replaces the DRS 300 controller and provides local and X25 wide area network support for up to 16 terminals. It costs £3,300 and is out now.

...WINS £10m DEFENCE SUPPLY PACT

The UK Ministry of Defence has awarded ICL a 12-month supply contract for Unix systems under its Multi-User System Catalogue programme in a deal valued by ICL at £10m up. Olivetti was the previous holder of the contract.

MITSUBISHI LAUNCHES APRICOT MICROS IN JAPAN

Mitsubishi Electric Corp subsidiary Apricot Computers Ltd has launched its UK designed FT server, LS Lanstation and Qi personal computer lines onto the Japanese market, where they will be sold through Mitsubishi's established distribution channels. Mitsubishi plans to introduce the products at private showings on April 10 and 11, and will begin shipping in the second quarter of this year, once system software in the Kanji language has been completed. Sold under the Apricot name, the systems will capture 10% of the filer server market and 3.7% of the network workstation market, if Apricot estimates hold true - that would equate to some 40,000 units in 1993. The only Apricot systems not included in the deal are the older Zen PC models. Apricot is currently producing some 80,000 units a year at its Glenrothes factory. Apricot also launched in Germany last month through Mitsubishi Electric Europe GmbH, going through indirect channels.

COMPAQ INVESTS \$135m IN SILICON GRAPHICS AND PUTS UP \$50m...

Compaq Computer Corp finally revealed details of its agreement with Silicon Graphics Inc last week, saying that it would seal the technology exchange and the joint technical development agreement with an investment of \$135m in new convertible preferred stock exercisable at \$50 a share, representing a 13% stake. It is also putting up \$50m which Silicon Graphics will use to fund research and development. The agreement covers Silicon Graphics' expertise in the integration of advanced RISC and graphics technologies, including the Iris Graphics Library. Compaq will provide expertise in such areas as the EISA bus, VLSI design and high-volume manufacturing. The equity investment and funds received will speed Silicon Graphics' ability to create and use new technologies in future products - which can be made and sold by both the partners.

...AS MICROSOFT SIGNS TO ADOPT SILICON'S IRIS GRAPHICS LIBRARY

Microsoft Corp has spotted Silicon Graphics Inc's three-dimensional graphics technology as a likely offering with which to expand its empire, and has signed to integrate the Iris Graphics Library technology with future systems and applications software. Application developers can also use the Iris vision product as a development environment to incorporate three-dimensional graphics functionality in their applications today.

EASTERN FIRMS TAKE LION'S SHARE OF UNIX CAKE IN USL IN SELL-OFF

Pacific Rim companies will represent the bulk of the outside investment in Unix System Laboratories once the sale of the initial tranche of shares is complete. AT&T is still waiting for two investors, one believed to be a concern in Singapore, the other a Korean, to pay for their stakes - the transactions are currently delayed pending their governments' approvals. One at least is expected to transfer its funds in the next two weeks, the other could take longer. USL last week went public with the identities of the other 11 new stockholders, including Taiwan's Institute for Information Industry, a non-profit quasi-governmental agency. Other investors from the Far East are Fujitsu Ltd, NEC Corp, Oki Electric Industry Co and Toshiba Corp. Europe is represented by ICL Plc and Ing C Olivetti & C SpA, with Novell Inc, Amdahl Corp, Motorola Inc and Sun Microsystems Inc from the US, (UX No 327). With the exception of Novell, the eleven declared are all members of Unix International.

AT&T Data Systems Group president Bob Kavner said the holdings of the 11 represent an even split between the European and American companies on the one hand and the Pacific Rim firms on the other, and will change when the others come on board. The largest single investor, believed to be Novell, holds 4.6%, having paid \$14.95m for its shares. Citing competitive concerns, AT&T declined to itemize the exact percentage each company now owns, and only ICL among the six investors turning up at the press conference in New York was forthright about its 1%, worth \$3.25m. However at the Tokyo bash USL president Larry Dooling was more forthcoming and revealed that Fujitsu and NEC have each taken 3.6% whilst Toshiba and III each bought a 1% stake. A further ten percent of the stock is earmarked for USL employees. The outside investors will get three seats on the nine-strong USL board of directors and must decide between themselves who their representatives will be, though AT&T has stipulated one must be an independent person from outside their ranks. Apart from USL president Larry Dooling, AT&T will control the remaining five seats, of which one will again be an independent outsider. AT&T said that the new investors are buying into a going concern that achieved profitability in 1989, and should see revenues in the high \$80m this year and close to \$100m next year - double its showing in 1988, (UX No 316). Kavner, however, said the company is not yet ready to go public, if it was, they would not be going through this private placement. A public offering is anticipated in two or three years, after USL "finds its legs" and gains some maturity. Revenues at that point should be between \$150m and \$160m. All the investors, whose stated motives span getting paid for contributing technology, to gaining a strategic advantage, to giving Unix a "vote of confidence" and evangelizing it, to believing Unix's fate should be in multiple hands, believe they will make money in the long-run given the business' growth rate of 20% to 30% a year. Kavner indicated AT&T approached the Open Software Foundation companies with the prospectus, but in vain, since they did not believe in the product. Other companies too were approached but did not have the money to invest. Perhaps naively, Kavner dismissed as "press talk" any notion that the Fujitsu group, composed of Fujitsu, ICL and Amdahl, and worth \$13,000m-a-year in information systems alone, could exert a greater influence than any other by voting in tandem. He also dismissed the idea that the Japanese, having purchased a legitimate entry to the Labs, would now suck out its expertise for its own use. Ray Noorda, president of Novell, said he was interested in supporting Unix at the source level, given that Netware and Unix would be merged. Taiwan's III - or Triple I - whose job it is to foster and promote the island's major industries, said that as Taiwan is the sixth largest systems provider in the world, its investment was clearly to its economic and strategic advantage, since open systems are now mainstream. USL says that all of its existing relationships with Unix International will remain in place, as will most of those it has with AT&T, such as access to the Bell Labs research operation - it will also be ramping up its sales and marketing operation over the coming months and expanding its internationalisation efforts. USL has around 500 employees on its books, most in the US, with 40 each in its European and Pacific operations.

MIPS ADDS TWO 33MHZ

SERVERS AND ONE WORKSTATION

MIPS Computer Systems Inc, Sunnyvale, California has extended its systems line with a new workstation and two servers, all using the 33MHz MIPS R3000A microprocessor. The new workstation is the Magnum 3000/33, the servers are the entry-level RC3330 RISComputer, and the RC3350 multi-user desktide server with VME expansion capabilities. The company also cut prices on the 25MHz Magnum workstation - to \$8,000, and the RC3230 server to \$9,000, and notes that Control Data Corp is also introducing the systems as part of its 4000 series. The Magnum 3000/33 delivers 25.1 Specmarks at a base price of \$11,000; improved compilers mean that the original Magnum 3000, now the Magnum 3000/25, is uprated to 18.6 Specmarks from 17.9. The workstations can be configured with 8Mb to 128Mb of memory and up to 6Gb of disk. The entry-level RC3330 server has a base price of \$12,000, delivers 25.1 Specmarks and supports the same memory and disk. The 33MHz station and server are also available as board upgrades to customers with 25MHz desktop systems. The RC3350, 26.5 Spec marks, starts at \$36,500 with 16Mb ECC memory, 328Mb SCSI disk and 150Mb quarter inch cartridge tape. It goes to 128Mb memory and 4Gb disk in the main cabinet, and up to 12Gb with an expansion cabinet with input-output via two VME slots. All out now. MIPS will also bundle demonstration samples of some applications with RISCwindows 4.10 on all MIPS systems from third quarter.

TRON ASSOCIATION TO OPEN US OFFICE

Japan's Tron Association, set up to promote the Tron chip architecture and The Real-time Operating system Nucleus, is not ready to give up on its baby yet, and is to set up an office in the US in an attempt to broaden the base of interest in Tron. Jim Farrell, previously an editor of the *American Electronics Association* magazine, is to be the representative of the organisation. Of the 143 companies that are members of the Tron Association, only five are American, but paradoxically, suggestions by the US government that Tron was intended as an invisible trade barrier has only excited more interest in the environment in the US.

X CONSORTIUM SHOWS OFF PEX

Ten members of the X Consortium last week used Connection to test the interoperability of three-dimensional capabilities based on the PHIGS extension to the X (PEX) protocol. Using PEX, Alliant Computer Systems, DEC, Evans & Sutherland, IBM, Silicon Graphics, Sony, Sun, Tektronix and Tyan - shared complex high-quality graphics across a multivendor network, the first test of its kind. The X Consortium made the PEX sample implementation available to its members only two months ago.

IBM SEEKS FURTHER WORLDWIDE JOB CUTS OF OVER 9,000

IBM Corp sent employees off for a happy Easter on Maundy Thursday with the news that there are still at least 9,000 too many of them, and that it wants to cut its headcount worldwide by 14,000 this year - although 5,000 of those go with the Lexmark International Inc buyout, which was completed last week. IBM UK's share of job cuts is put at 1,200. The company had a shock for Wall Street too, saying that it will also take a hit of \$2,300m against its 1991 figures to cover the cost of implementing the recently adopted Financial Accounting Standard 106, which relates to retirement benefits. Despite that, the company says that the job cuts and accounting change will have no material effects on its figures. The job cuts, which will be achieved by attrition and voluntary redundancy, are forecast to yield pre-tax savings of about \$200m this year, \$600m next and \$800m annually thereafter.

...OFFERS CONSULTANTS 50% OFF RS/6000s...

IBM UK Ltd wants to win the hearts and minds of consultants over to its view of the Unix world, and if you can persuade the company that you're a qualified industry consultant, you can have up to two RS/6000s complete with peripherals at half price. The purpose of the programme "is to increase consultants awareness of IBM, in general, and specifically IBM RS/6000 Products and Services so that they will be in a better position to recommend our Products". Likely candidates for selection as Industry Consultants will be in recognised professions - lawyers, doctors, accountants, trade associations, end-user associations and user groups, and management consultancies.

...PICKS GEMSTONE FOR RS/6000 WHERE IT TOOK ONTOLOGIC FOR PS/2

In a case of divide and rule, or the left hand not knowing what the right is doing, IBM has signed up a second object database vendor, this time for its RS/6000 range. Alameda, California-based Servio Corp, developer of the GemStone object database system, has signed a joint technology agreement with IBM to put Servio products on the RS/6000. This follows an agreement a few months ago between IBM and Ontologic to market the Ontos object database on the PS/2. Apparently, a lot of Servio customers run applications on the RS/6000 such as InterACT, developer of computer-aided engineering software products, and BehavHeuristics, developer of decision support software, including revenue management systems for the airline industry. While the Ontos product could be developed to run in the AIX environment - it runs in Sun and Apollo Unix environments - it is geared around the C++ programming language, whereas GemStone supports IBM's preferred object-oriented language SmallTalk, which eats processing power and memory for breakfast - perish the thought that that's why IBM likes it so much! What is more Servio offers Facets, a collection of fourth generation language application tools for the Smalltalk environments.

CROSSED WIRES WILL PLEASE INTERNET USERS

General Atomics, Performance Systems International Inc, and UUNET Technologies Inc have signed an agreement to provide Commercial Internet Exchange - CIX - facilities, which will allow AlterNet, CERFnet and PSINet users to exchange Internet traffic directly, with no additional cost, regardless of which network the user gets service from. The three competing firms provide nearly 100% of the commercial TCP/IP-OSI internetworking services in the US. The first CIX, located in the San Francisco Bay Area, will use Cisco Systems routers and Point-to-Point Protocol - it's expected to be operational within 60 days.

PICK FESTIVITIES AT SPECTRUM SHOW

Anaheim, California-based General Automation Inc is a survivor - as it would have to be after surviving a palace revolution that saw its founder toppled in a palace revolution in which armed guards were posted on the premises to keep him out after he dreamed up a plan to move headquarters down to idyllic La Jolla, and then saw its proprietary minicomputer business dwindle to almost nothing over a few months. The company hasn't looked back since it discovered Pick, and it is now safely under the wing of the leading British Pick-popper Sanderson Electronics Plc. The hot item that it has been holding back for the Spectrum show in Anaheim, California, is its new Advantix Operating Environment. It describes Advantix as an integrated hardware and Unix-based software add-on enhancement for the Advantage Series of mid-range and upper-end machines launched in January, which run under the R91 Enhanced Pick Application Environment. Advantix supports concurrent operation of R91 Pick and Unix-based under System V running on the AX3200 Unix co-processor - acquired under the General's big OEM order to Motorola Inc for its Delta Series machines. Advantix, scheduled to ship next month, adds \$30,000 to the cost of the Advantage System A600, System A800 and the dual-processor System A800/2. Advantix supports concurrent Pick and Unix and Unix users can interact with R91-based applications and files while R91 users get access to Unix resources and can initiate jobs such as Unix-based communication and networking tasks, as well as import and export data between Unix and R91. It comes with the co-processor board - 25MHz 69030 with 16Mb, 68882 maths chip, Ethernet interface, one parallel and four serial ports, 760Mb disk and 150Mb quarter inch tape cartridge, high-speed inter-system bus, basic cluster of eight process-interconnect channels so that any eight of the total number of users can have simultaneous access to R91 and/or Unix resources across the Advantix bus. Additional process-interconnect channels are available at a cost of \$2,950 for each cluster of eight channels.

Sanata Ana, California-based Pick-popper Novadyne Computer Systems Inc, the former McDonnell-Douglas Information Systems, has come out with a 40MHz Sparc-based LX/2200 model to top off its LX Series of multi-environment machines. The LX/2200 is designed to combine the communications capabilities and power of Unix with the commercial application base of the Reality implementation of the Pick operating system. The machine is rated at 28.5 MIPS and features an "advanced" memory-management scheme, and comes in above the 25MHz Sparc-based LX/2100 with either RDBMS from UniData Inc or uniVerse from VMark Software Inc, each of which recreates the Pick environment under Unix. It comes with up to 5.3Gb of disk and 64Mb memory. There are communications controllers for Ethernet, X25 and a range of SNA and other IBM interfaces. It has up to three SCSI interfaces and half-inch tape back-up capacity to 240Mb, and can support up to 130 users, coming with one synchronous and up to four parallel printer ports. No indication of prices given.

DEC 80486 UNIX BOX HITS UK

DEC has brought its multiprocessor application DEC 433MP 80486-based Unix machine to Europe. The machine uses Corollary Inc's symmetrical multiprocessing extensions to Santa Cruz Operation Inc Unix and comes with up to four processors. A 33MHz uniprocessor with 8Mb, 209Mb disk and 1.44Mb floppy is £10,610, now. DEC said that the machine would be its first to be marketed through a new reseller operation that will target small and medium-sized companies doing from £2m to £50m a year. The first two resellers to be signed under the programme in the UK are Technology Plc and Metrologie UK.

INTERGRAPH BUYS LICENCE TO X TERMINAL TECHNOLOGY FROM VISUAL

Intergraph Corp, Huntsville, Alabama wants to get a quick leg-up into the X-terminal business and, rather than sign an OEM agreement, has licensed the technology developed by still shaky Visual Technology Inc, Westborough, Massachusetts. According to Computer Systems News, Intergraph plans to build its own 8-bit colour X-Window System terminals and will fit them with a 19" display for sale direct by the company. They will be pitched at the high end of the X-terminal market but the low end of the computer-aided design market. Visual Technology will also have an option to market the terminals developed with its technology. Intergraph will be getting engineering design services, software licences, hardware development services and licences and software maintenance and support from Visual.

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The Weekly information newsletter for the UNIX ® community worldwide

Scorpion Technologies Inc, San Jode, California, has announced SRV Sparc - a version of its Scorpion Raster-to-Vector computer-aided design software for Sun Microsystems workstations: it's the first of many Unix implementations the company says it is planning, and it expects to make \$12m over the next three years on SRV Sparc.

Interactive Systems Corp has signed an OEM deal with CompuAdd Corp, to use Interactive's System V Release 3.2 for its 386/486 line, attracted by Interactive's dual Intel/Sparc product strategy.

Ravaged Tektronix Inc is reorganising what's left into three primary lines of business - test and measurement for oscilloscopes and other test equipment and component manufacturing, computer graphics, and television systems. The graphics side, displays and printers, will adopt future display technologies.

Helios USA, Cupertino, California, is now shipping EtherShare - an application that allows Apple Macintosh Inc computers to act as file servers in networks which include Ultrix, Sony OS, SunOS and AIX-based systems: prices start at \$4,000.

Hostile predators will have a hard time trying to snare Mips Computer Systems Inc following the adoption by the Sunnyvale, California-based firm of a so-called "poison pill" shareholder rights plan last month: it's triggered if anyone buys 15% of Mips' outstanding shares without first getting the board of directors' approval.

Comdex/Fall, that great pantheon built to the god MS-DOS, will be adding a new wing this year dedicated to the Unix sect. Unix has built up enough momentum and credibility that the Interface Group, Comdex's owners, is planning on setting up a Unix pavillion housed at the Mirage, that gorgeous new hotel in Vegas, and selling floor space to Unix newcomers as well as Comdex stalwarts who'll be encouraged to either move their booths out of the main halls or set up additional stalls. Interface is even planning a separate Unix reseller community, it figures it won't butt heads with its end-user oriented Unix Solutions show set for San Jose, California September 4-6. Comdex itself is a little earlier than usual this year and will run October 21-25.

Sweden Post says that it invested \$40m in X/Open-compliant technology during 1990, much of which will be installed over the next twelve months.

The Intervention Board Executive Agency - the government agency responsible for administering the European Economic Community's Common Agricultural Policy for UK farmers - has installed a £1m, 18-processor, Intel 80386-based Sequent Computer Systems mainframe at its Reading headquarters.

Hewlett-Packard has an enhanced version of the Apollo Domain Software Engineering Environment which it claims improves the process of developing software for the OSF/1 operating system: DSEE 4.0 includes support for Motif and X-Windows - it costs \$2,020, requires the Domain/OS operating system with at least 16Mb RAM and is available now.

And Sun has bought the technology and patents of Sutherland, Sproull and Associates, a Menlo Park, California-based consulting firm that has worked for DEC, Apple, Xerox and Citicorp, which will be used by its newly formed research and development subsidiary Sun Microsystems Laboratories Inc, which starts life on July 1.

X/Open has published the second developers' specification dealing with the integration of personal computer networks into open systems environments - Protocols for X/Open PC Interworking: SMB. It adopts Microsoft's Server Message Block protocols and makes it possible to have MS-DOS and OS/2 clients communicating with X/Open-compliant servers. Another specification will appear later in the year enabling developers to write distributed applications, with the server component of those applications portable to all X/Open-compliant systems.

Hewlett-Packard advises us that the real reason Bull and Siemens are joining in on the HP/IBM submission to OSF's Distributed Management RFT is to simplify things for OSF and address its time to market needs. "There are too many technology choices for OSF to get its arms around," we're told, and since it's faced with a "huge integration problem" as well, the consortium will not be successful unless the submitters cooperate as DEC and Microsoft are doing and others are expected to.

London-based Planning Sciences, creator of EIS-Epic, a leading European executive information and integrated decision support system, has found a North American and Mexican distributor for its product in the Massachusetts-based start-up Epic Software Inc. The software, originally designed for multi-user networked personal computers, has been moved to client-server Unix platforms including Sun and other Sparc machines running Unix SVR4, IBM's RS/6000 AIX boxes and 80386 and 80486 SCO Unix 5.3 at prices starting at \$30,000.

What with Compaq Computer Corp now squarely in the MIPS Computer Systems Inc camp for workstations, the only other high-volume design-win worth getting is Apple Computer Inc, which for all its recent talk of abandoning its proprietary stance is unlikely to join either with MIPS or with Sparc International. The betting is it'll stick with Motorola's 88000 for its RISC system but probably tweak the chip in such a way that it differs from what other Motorola customers are using.

IBM Corp, Digital Equipment Corp, Unisys Corp, ICL Plc, Groupe Bull, and Siemens Nixdorf Informationssysteme AG have created a consortium to enable documents containing a mixture of text, pictures and diagrams to be sent electronically: headquartered in Brussels, the Open Document Architecture Consortium will license its software to other companies; however, the software will not be available until 1993.

Ultimate Corp, East Hanover, New Jersey says it has been named Hewlett-Packard Co's top reseller for the HP 9000 Series 800 multiuser Unix machines: according to the Hewlett announcement, Ultimate sold \$30m of 800s to companies in North America, the Pacific Rim and Europe in the first year of the agreement.

IBM Corp will install a \$51.6m air traffic control system for Taiwan: the schedule calls for the first elements of the system, which is based on the one IBM is building for the US Federal Aviation Administration and Civil Aviation Authority, to be in use by late 1993 and all systems up by March 1994; as in the UK, the system will be built around an 4381 mainframe; air traffic control workstations are built around RS/6000 Unix boxes.

DEC is planning to build a wafer fabrication facility in either Hudson or Andover, Massachusetts and is expected to use it to make CMOS RISC microprocessors that it is developing to succeed its complex instruction set VAX processors, Electronic News reports: over time, it is expected to move its Unix software over to the proprietary RISC and phase out the ones designed by MIPS Computer Systems Inc.

Convex Computer Corp, Richardson, Texas plans to introduce its C-3 Gallium Arsenide minisupercomputer on May 7; the company also says that earnings per share for the first quarter are likely to be 15 cents to 20 cents a share below what analysts had been looking for - namely 20 cents to 23 cents a share: it says that sales were about flat with last year's \$48m.

Pyramid Technology is to roll out its long-awaited MIPS Computer Systems R3000 RISC-based machines on April 15 - they have been under development in conjunction with AT&T since October 1989, and will also be resold by Olivetti and Siemens-Nixdorf.

This week's consortium has styled itself the Roack Ridge Group - reportedly after the town in Mel Brooks' Blazing Saddles movie - and includes DEC, HP, SCO, Silicon Graphics, NeXT, Philips, Solbourne and Sun. They've submitted a pair of CD-ROM specifications to the National Institute of Standards and Technology that will help expand the current ISO 9660 standard out of the pure MS-DOS arena, allow Posix files to be recorded directly on to the CD-ROM rather than going to hard disk first, and make CD-ROM disks mountable.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

15 APR 1991

The weekly information newsletter for the UNIX ® community worldwide

London, April 15-19 1991

Number 329

PYRAMID LAUNCHES NEW GENERATION SERVERS - AT&T, OLIVETTI, SIEMENS-NIXDORF WAIT IN THE WINGS

Pyramid Technology will announce its long-awaited Mips-based high-end second-generation SMP servers this week, the boxes that it has been co-developing with AT&T Computer Systems for almost 18 months and which will soon become - under AT&T auspices - the latest additions to the 3B2 line. It is of course this fabled 3B series that NCR has threatened to immediately jettison if the AT&T/NCR merger goes through and AT&T Computer Systems comes under its domain. AT&T has said in the past that it would give NCR carte blanche over its systems but now seems to be drawing a line at the 3B and assuring customers of its continued longevity. The boxes are also expected to be OEM'd by Olivetti and Siemens-Nixdorf. Pyramid is calling the new hardware the S series and says it can deliver up to 300 MIPS in a configuration using 12 of Mips Computer Systems' R3000A RISC chips. Pyramid has also implemented the first commercially available symmetric multi-processing version of SVR4 on the machines, calling the software DataCenter OSx or DC/OSx. The machines have been designed for the large-scale OLTP environments typically serviced by mainframes. There are three members in the series: an entry-level MIServer in one or two processor versions priced starting at \$93,000; the Department MIServer in one to four processor units costing from \$272,000; and the full-blown corporate MIServer in one to 12 processor configurations starting at \$348,000. The S series reuses Pyramid's three-bus architecture of CPU bus, memory bus and Xtend bus for I/O. The boxes support Motif 1.1, X.25, SNA, NFS, Xview 2.0, Looking Glass, Framemaker and X Windows 11.4 as well as the Oracle, Ingres and Informix databases. Sybase and Unify are expected by the end of the year along with Tuxedo. Unit availability is 60 days from receipt of order. Customers of Pyramid's current T series will reportedly see a 100% performance increase with the new machines. The S series delivers over four times the cache of its predecessors through a new multi-tiered cache that can store 4Mb of instructions and data on the processor board for fast access and improved throughput. The second generation SMP architecture Pyramid has devised uses a shared global memory and any task can execute on any CPU. Applications need not be specifically coded for SMP. Pyramid says DC/OSx has greatly enhanced BSD compatibility features over standard SVR4 allowing easier migration of BSD applications.

NCR GETS TWO MONTH BREATHING SPACE FROM AT&T THREAT

NCR Corp has been granted surprise breathing space in its battle to remain independent and to see off AT&T Co's unwanted hostile \$90 a share takeover bid: NCR's request that the court affirm the validity of its shareholder rights plan is not to be heard until June 10. The delay means that there is little pressure on NCR to reduce its demand for \$110 a share before it starts negotiating, because until and unless the poison pill defence is overturned, AT&T can't start to buy tendered shares - and the prospect of the battle, which began at the start of December, dragging on well into the summer may well begin to make AT&T desperate, not least because of the ravages it is causing in its own computer business. The battle and the uncertainty is not doing NCR's own computer business much good either, as is likely to be revealed when the company reports first quarter figures this week. It is now thought that many proxies switched sides shortly before the NCR annual meeting and that AT&T may not even have the 60% it had been confidently asserting that it had. NCR's share price has been drifting down as many holders decided that anything more would be greedy and sold in the market at around the \$97 to \$98 mark.

SILICON GRAPHICS IRIS 4D/480 RATES 159 SPECTHRUPUT

In the latest cranking up of the performance wheel in the world of workstations, Silicon Graphics Inc claims that the top-end MIPS 40MHz R3000A-based Iris 4D/400 in its new Iris Power Series is the highest performance RISC system available and the first to use the 40MHz version of the part with a blinding SPEC Thruput rating of 159. The company also claims low-end minisupercomputer performance of 286 MIPS and 70 MFLOPS for the machine - which has a vast 9Mb of cache memory. The 4D/400 Series symmetric multiprocessing systems come in two, four and eight processor versions and support the Mountain View, California company's VGX and GTX graphics subsystems, and can also be used as network servers. Server prices go from \$64,900 for the two processor 4D/420S to \$164,900 for the eight processor 4D/480S. The graphics systems are rather pricier, starting at \$94,900 for the 4D/420GTX, and rising to \$224,900 for the top-of-the-line 4D/480VGX. Deliveries begin in 60 days.

ASCII CORP EXCITES JAPAN WITH PLAN TO MARKET NEXGEN'S "80386" RISC

ASCII Corp, one of the major investors - alongside Compaq Computer Corp, Ing C Olivetti & Co SpA and Chips & Technologies Inc - in Nexgen Microsystems Inc, San Jose, California has caused a stir in Japan by saying that it will be marketing the 80386-compatible RISC microprocessor developed by Nexgen and due to sample this summer. Kay Nishi's company has 15% of Nexgen and is already testing the chip for IBM compatibility. The part is likely to be fabricated by Yamaha Corp, which is another Nexgen shareholder.

DEC CONFIRMS MASPAR PARALLEL PLAN, AIMS FOR PORTABLE ENVIRONMENT

Digital Equipment Corp has now confirmed that its entry into the massively parallel processing business will be by way of a joint venture with Maspar Computer Corp, founded in Sunnyvale by DEC refugees who retain close ties with their alma mater, and is also looking to bring together a consortium of vendors of massively parallel systems including Maspar, another of its partners, Thinking Machines Corp, and Intel Corp with its iPSC machines, to create a common programming environment to make applications portable between parallel systems. According to the New York Times, the announcement will be made within two weeks. The Maspar parallel machines use from 1,000 to 14,000 simple processors and are designed to be front-ended by DEC machines. DEC has formed a new Massively Parallel Systems Group under Charlie Wilson, who says that the announcement, of Maspar machines running DEC-developed software - specifically parallel compilers and other development tools, will include MIPS Computer Systems Inc RISC-based DECstations running under Ultrix as the front end processors. The massively parallel market for 1990 is put at \$183m, but DEC sees it growing rapidly.

21-STRONG ACE CONSORTIUM'S HARDWARE STANDARD OVERSHADOWED BY POLITICS

"The most significant computer industry announcement of the 1990s" took place last week at simultaneous events in New York and Brussels - at least that is how Digital Equipment Corp viewed the launch of the ACE Advanced Computing Environment, which it reckoned to be more comprehensive than Sun Microsystems Inc's Sparc strategy. Aside from DEC and key members Compaq, MIPS, Microsoft and Santa Cruz Operation, sixteen other companies declared themselves on the day. They were: The Acer Group, Control Data Corp, Kubota Computer Inc, NEC Corp, Nippon Kokan KK, Olivetti Systems and Networks, Prime Computer Inc, Pyramid Technology Corp, Siemens AG Automation, Siemens-Nixdorf Informationssysteme AG, Silicon Graphics, Sony Corp, Sumitomo Electric, Tandem Computers, Wang Laboratories and Zenith Data Systems/Groupe Bull. In fact, of the major supporters of the MIPS Risc architecture at the centre of ACE, only AT&T Computer Systems was not represented. The event set out to mark the establishment of a new specification of a computer platform based around the MIPS R4000 RISC chip, supposed to act as a base for widespread market support - the model being the IBM PC in the 1980s. But the announcement also included emotive issues such as support for Microsoft Corp's "new technology" OS/2 3.0 and SCO's Open Desktop Unix-based operating system, issues that dominated attention, and highlighted differences amongst Consortium members that should have remained hidden, at least on the first day of a brand new joint venture.

...Advanced Risc Computing hardware spec is key

Perhaps the most important aspect is not the political operating system choices, but rather the underlying hardware platform on which the whole thing depends. The Advanced Risc Computing Specification - known as ARC - defines a common set of hardware and system firmware interfaces to both operating systems and applications, allowing for the development of a "shrink-wrapped" base of products, that will run on any ARC-compliant machine without modification. "It's basically a fingerpointing problem between hardware and software at the moment", said David Kearney, software marketing product manager at MIPS. "But with ARC, if compliant software doesn't run, then you know the problem lies with the hardware". The ARC specification has been made more flexible by defining hardware interfaces at a higher level (ie above the base register level) and includes a system firmware interface. This allows for greater hardware independence without affecting applications compatibility - necessary when individual Consortium members demand support for a whole range of buses. EISA, ISA, MCA, DEC's TurboChannel and the emerging Futurebus standard were mentioned at the conference. It also allows for a more rapid evolution of hardware technologies and a broader choice of compatible systems, the weakest part of the IBM PC clone situation. The basic elements are: MIPS Risc processor (R4000, or R3000 to start with, in little endian byte ordering mode); the interfaces to standard I/O devices, such as storage subsystems and network interface controllers; standard 101-key PC compatible keyboard; system firmware services, including initial program loading and execution; I/O subsystem functions; and storage media formats. The spec is designed to be scalable, so that it is suitable for laptops or multiprocessors. Defined, developed and evolving under the control of an industry technical committee chaired by MIPS, the specification is available from MIPS to any vendor intending to build ARC specification products who is willing to sign a non-disclosure agreement drawn up by the Consortium.

...Intel-based PCs also a part of the specification

Intel Corp was understandably keeping a fairly low profile at the announcements last Tuesday - it can't be seen to be endorsing the MIPS Risc chip, especially when it has its own i860 Risc still rattling away in its closet full of skeletons. But nevertheless, industry-standard PCs could not be ignored, and so they too are part of the deal. To offer compatibility with PCs, the ARC spec includes several aspects in common, including the keyboard, storage media and file formats, the consistent little endian byte-ordering and PC-compatible I/O interfaces which allow the use of thousands of PC boards and peripherals already on the market.

More operating system details from Microsoft and SCO

ACE chose to endorse two operating systems as part of its platform - one not yet ported to MIPS (Open Desktop from the Santa Cruz Operation) and one not yet even written (New Technology, or OS/2 3.0 from Microsoft Corp). Both were explicitly said to be supported by all vendors in the initiative, despite the fact that they are basically competing products. Started as long ago as 1988, according to Microsoft, it is to be a high-end 32-bit operating system that can run MS-DOS programs as native, but which also provides a solid base for the forthcoming Windows-32 version of Windows 3.0. The layered software will provide basic operating system functions at the foundation (or kernel) layer, supporting "protected subsystems" (servers) to run as standard, user mode applications, providing system services and environments for the applications. There will be subsystems for Windows, DOS, OS/2 and POSIX applications. The kernel itself, called the Executive, will be a microkernel of some 50k compiled code, aimed at making the system efficient and portable. NT will support symmetric multiprocessing and security to C2 level, including secure distributed processing. It's due out next year. Open Desktop, from SCO, should be ready at the beginning of 1992 for MIPS platforms, with development versions in the latter part of this year. Extra features will include: 64-bit support to take advantage of the R4000 chip; support for OSF's Distributed Computing Environment and Distributed Management Environment software; compliance with XPG4, POSIX 1003.2/4/6/7 and SVID 3 standards; OSF Motif 1.1, X 11.4 and IXI's X.desktop; support for threads, network licence management, logical volume management and diskless systems; and many more, such as security, hypertext and OSI support. Initial bus support will be for EISA and TurboChannel. SCO nowhere mentions System V.4, and appears to lean towards OSF/1. DEC and Bull said they would be underpinning ODT with OSF/1 at the very least, and an executive from Silicon Graphics said he expected OSF/1 to be the base. However, Jim Wilt of SCO insisted that the company was plying the middle ground, and would take technologies from both OSF/1 and Unix System Labs.

...other operating systems will appear, predicts MIPS

Although MIPS' David Kearney predicted that most ACE systems would go out with either NT or SCO ODT as the operating system, he said that other operating systems were more than likely to appear on the ARC hardware platform in the near future, as companies see a market opportunity in following the spec. This might be one route that System V.4 supporters take, allowing them to provide V.4 solutions without the Consortium as a whole having to endorse it. It could also be an attractive route for small companies with proprietary operating systems such as Atari and Commodore, and, said Kearney, niche operating systems such as the Lynx real-time system, which already runs on MIPS hardware, might also be expected to appear.

ACE Consortium announcements - 2

DEC has reason to preen itself

DEC was a runaway winner in the Advanced Computing Environment stakes, as its experience in designing little-endian byte-ordered MIPStations means that it will be able to be first to market with ACE products - and that its MIPStation customers are already using Advanced RISC Computing-compatible machines. DEC claims 1,800 applications for its DECstations and DECsystems, all of which should by definition be ACE object code-compatible. It will also see the development as a means to lay claim to all the applications running on some 60m MS-DOS micros as those users seek an upgrade path in RISC computing on the desktop - including the base of Xenix applications, all of which should be source - but not object code-compatible. The company will also be able to tout its DECstations as ideal development machines for applications vendors wanting to get a head start in developing or adapting programs for the new environment, giving its workstation business a welcome shot of adrenalin.

"Fragmented" ACE does not worry Sun

Sun is practically giddy with delight at the way the ACE Initiative came across. According to Sun GSG Advanced Development director Dave Ditzel, ACE could have been a real thorn in Sun's side if the makings of a single standard and the momentum were there. But with the ACE operating system story as fragmented as it is and even the ACE leadership as lukewarm in its support as Compaq's appeared to be, Sun reckons ACE will not be a serious competitor. Sun's performance rivals, he said, will continue to be IBM and Hewlett-Packard, with the DEC RISC VAX entering the arena when it finally makes an appearance. ISVs, he claimed, are going to be hard put to decide which of the three ACE operating systems they should write to. A fourth alternative could also appear, he mused, with Sun's newly formed subsidiary SunSoft porting the SVR4 version of SunOs to the MIPS architecture, if there were any volumes to support such a decision. SunSoft of course is already expected to move the SVR4/SunOs to Intel's hardware. Doug MacGregor, president of Solbourne, the first Sparc cloner, was also unimpressed by the lack of solidarity behind ACE. "It's an impressive group of companies all going off in their own directions," he said. What made the PC work, he noted, was that it was driven by IBM, not a consortium. "Consortiums haven't proven that they work. What's working for Sparc is that it's driven by Sun." What's lacking for ACE is that there's "no-one there to drive it... and there are four different environments - with four aces on the table, things begin to smell a little fishy." MacGregor, however, saw a benefit in so well-respected a company as Compaq openly recognising that its PC/DOS strategy isn't sufficient. "This is an opening into the PC world" that Sun and the Sparc cloners will exploit.

...ACE gets mixed reception from IDC

Market analysts IDC gave the ACE announcements a mixed reception. While saying that the initiative was "the first building block in the foundation of a potential new standard for networked, distributed desktop computing", the organisation went on to say that "many cracks could develop, and it is premature to call the ACE initiative a success." Although the consortium could slow Sun's momentum by grabbing the attention of software developers, users and system vendors, says IDC, Sun still faces a more serious threat from IBM and Hewlett-Packard. Individually, IDC's Vicki Brown said "it will be difficult for a consortium of companies to compete against one company, namely Sun, that has its act together", while David Card commented that "the unanswered question is what is common between Unix and OS/2. If you're a software developer, you still have to choose one or the other."

Are there clouds on the MIPS horizon?

With DEC understood to be developing its own RISC processor to succeed the VAX CPU, and with rumours that it is thinking of porting Microsoft's NT onto the new chip, it has to be questioned how beneficial DEC's embrace will be for MIPS Computer Systems Inc. It seems highly likely that DEC will want to replace the MIPS RISC with one of its own design when it can, and a pointer to this go-it-alone approach lies in the fact that although the graphics standard for ACE is understood to be coming from Silicon Graphics Inc, sources close to DEC say that it is talking in terms of developing its own rival graphics boards for its own version of the "standard" machine, as well as networking and multimedia boards. It should also be noted that Compaq is an investor in Nexgen Microsystems Inc, almost ready with its 80386-compatible RISC, on which the new operating systems will also run, so it too may be less than 100% committed to the MIPS RISC architecture.

Agreements tie down ACE V.4 supporters

The Apache Group, those renegade ACE members who want to run SVR4 on MIPS boxes, kept a very low profile last week as predicted (UX No 328). And no wonder. Those NDAs (or non-disclosure agreements) they signed demand exclusive public support of the little endian principles implicit in ACE as well as exclusive public endorsement of MIPS as their sole RISC platform. There's no middle ground here. It's either little endian or big endian. You have to choose sides and if you turn coat and go big endian you either have to wait 30 days until after the last receipt of early versions of the ACE specification to say so publically or give five days notice that you're changing sides - whichever is longest apparently. Oh yes, and of course you have to send back your copy of the ACE specification.

...but USL goes ahead and names SVR4 ABI crew

AT&T's Unix System Labs couldn't really have picked any other day to announce the availability of its System V Release 4 Applications Binary Interface for the MIPS Risc chip, supported by NEC, Olivetti, Prime, Pyramid, Siemens, Sony and Tandem, as well as AT&T Computer Systems, pretty much the only significant MIPS vendor not declared as an ACE consortium member. The ABI is set to big-endian form. USL also announced that its SVR4 reference platform, based on Pyramid's MIPS SVR4 operating system, with "significant contributions" from NEC Corp and Sony Microsystems, would be made available on a Sony NEWS 3200 Series laptop by the third quarter of this year.

...Corollary pins its RISC hopes on ACE

The day after ACE went public, Corollary became the first third-party supplier to join. Corollary says it will develop multiprocessor hardware and software products based on MIPS chips and compliant with ARC, the ACE specification. It will be the first non-Intel architecture Corollary has supported. Company president George White says the product line will begin with a version of one he currently has in design, the Cbus+, a faster, more symmetric iteration of the present Cbus which will work well with the MIPS architecture. White said he joined ACE after talking with some of its European members and perceiving a niche. He is not overly confident that the ACE MIPS platform will achieve any volume but it allows him to diversify and doubtless sell more into the Intel arena, since ACE is also supporting the x86. White more or less indicated that he has no place else to go. Solbourne has pretty much sewed up the multiprocessing Sparc market and he is not sure he can trust Sun anyway. Corollary technology is already sold by ACE founders DEC and Compaq.

ACE: COMPAQ'S WILD CARD - THE JOKE IS ON THE UNIX USER

by Bill Ablondi and Dr Portia Isaacson

The ACE initiative, which was announced Tuesday April 9th, further fragments the Unix community. MIPS now has the potential to be a serious contender in a six-way race with IBM, Hewlett-Packard, Sun Microsystems, Intel and Motorola for "personal computer" Unix hardware platforms. This fragmentation at the hardware level coupled with two versions of Unix and OS/2 3.0 is bound to limit Unix software availability. Unless of course some of the contenders switch rather than fight.

Compaq's move to form the ACE alliance is clearly a move to cover its flank from invading workstations. The company has no intention of abandoning the Intel architecture but instead realises that the computer market is not a one-size-fits-all industry. Compaq started examining its RISC architecture options eighteen months ago. If it waited much longer, the company would have to take a back seat in the development of RISC systems and risk losing substantial share in the future personal computer marketplace.

Compaq needed to establish a base in RISC systems so it didn't put any part of the marketplace out of bounds to itself. In true form Compaq management thoroughly examined all of the options. The decision was not based solely on performance criteria; the key factor came down to what systems Compaq could choose that would put it in the driver's seat. IBM and HP RISC architectures were clearly off limits, Motorola's 88000 is less than popular, the politics associated with Sparc would be overwhelming (not to mention the clashing egos that would result if such a path were chosen) and the Clipper chip doesn't matter. Compaq could go off and develop its own RISC system but why reinvent the wheel if you find one that's round and rolls? The Mips processor is just that.

Compaq's move to the Mips RISC architecture is by no means an indication that it believes future generations of the Intel architecture won't be competitive with RISC systems. In fact, many of the promises made by RISC advocates have not been kept.

Compaq's move to develop RISC-based systems is not a move to enter the workstation market as we typically think of it. Rather, it is a move to continue to be on the forefront of high-performance personal computers. By personal computers we don't mean PCs, ie IBM PC compatibles, but computing resources used by an individual. To be successful Compaq must build support in the market for its systems, thereby establishing the ACE architecture as a de facto standard. With this done and shrink-wrapped software available for it, standard off-the-shelf products can be sold through Compaq's traditional channels. In addition, these high performance systems can help Compaq expand its coverage of the market through value added channels.

Indirect distribution channels in this country have been going through some major changes over the past few years. The changes are caused by forces on both sides of the channel, in the end-user's camp as well as on the vendor's side. As prices for high-performance workstations plummet, indirect channels become the most cost-effective way to sell these systems. But is the channel up to it? Yes... but. That but is that not all dealers have the resources required to develop the necessary skills and support staff for these kind of systems. On the other hand, it's very expensive for vendors to sell them directly, so vendors are motivated to build the capabilities of the channel. The real battle in the war for PC marketshare (systems under \$12K) will be fought in the channel, not in R&D.

To be successful in Compaq's traditional dealer channel it must establish customer pull for these systems. Dealers don't have the capability to become evangelists for these high performance systems. Merely dumping them on the dealer's loading dock and expecting them to move through the channel is doomed to failure. To create customer pull Compaq has some very powerful friends; Microsoft, SCO and Silicon Graphics. Digital is a partner in this alliance but by no means a friend of Compaq. What they have most in common is their common enemy - IBM. Together they have the clout to establish a bridge between the X86 architecture and the Mips RISC architecture. Creating this bridge builds a more familiar hardware system for the distribution channel to deal with. The challenge will be bringing ISV's to the party.

Do all partner's to the ACE alliance win? The short answer is yes! But each wins in a different way.

Compaq may be the biggest winner of the bunch although Microsoft wins big too. Compaq now has a platform on which it can take the lead in developing high-end personal computer systems. It has set standards before in the original IBM PC compatible market and later with the EISA bus, so there's no reason to expect that the company can't do it again with ACE. In addition, this time it has some very powerful software partners, Microsoft and SCO. Perhaps one of its biggest advantages is the fact that it's sharing the R & D expense by virtue of having a number of companies developing this standard. Even though ACE systems won't be available for eighteen months or so, Compaq is so firmly placed in the minds of potential high-end system buyers that it too is now in the business of providing high-performance workstation class systems.

Digital's VAXstation (based on its version of the Mips processor) is not setting the world on fire - especially in comparison with IBM's RS/6000 and Sun's Sparc systems. With ACE, Digital now has a platform that will more easily gain the interest of ISV's because of its larger installed base potential. But perhaps the biggest advantage to Digital is the fact that OS/2 3.0 will run on its ACE systems allowing current IBM OS/2 users to migrate to Digital systems painlessly.

Microsoft is a clear winner with ACE because it dramatically expands the software base of systems on which its operating systems and future application software can run. It further frees Microsoft from relying on IBM for proliferating its opportunities. ACE will also help to solidify Windows and advanced versions of Windows in the marketplace. And, with 20% ownership of SCO, SCO's good fortunes translate indirectly to good news for Microsoft. ACE is clearly a step for Microsoft in the direction of dominating the software world as IBM had dominated the computer hardware world.

Mips needed some high volume systems manufacturers to jump on board its platform and now it has those. The ACE alliance insures Mips longevity for some time to come but won't translate into as many dollars of revenue as it will for Compaq, Microsoft and Digital.

SCO is dedicated to providing Unix operating systems for standard platforms. It's the leading supplier of Unix for Intel systems and ACE expands its horizons considerably.

William Ablondi is responsible for directing the New Desktop Advisory Service at BIS CAP International. Dr Portia Isaacson is principal analyst.

DEC STAGES COUP ON OBJECT WORLD WITH FORMATION OF OPEN DOCUMENT CONSORTIUM

DEC has staged a quiet coup in the game to get proprietary technology embodied as a standard, since it appears that its Compound Document Architecture is to be the base technology for a toolkit to enable developers to implement the Open Document Architecture standard. IBM, DEC, Unisys, ICL, Bull and Siemens Nixdorf have got together to form the Open Document Architecture Consortium and it is this consortium that is adopting DEC's CDA as its base technology. The consortium's aim is to develop software that enables documents containing a mixture of text, pictures and diagrams to be sent electronically from one type of computer to another across the world. Such standardisation enables documents to be edited or viewed quickly and easily, and frees users from time-consuming activities like retyping and reformatting. The documents can also be exchanged more rapidly and retained in an accessible form indefinitely. In a roundabout sort of way this appears to bring in DEC's Application Control Architecture - currently submitted in response to the Object Management Group's request for technology for an Object Request Broker - as a backdoor standard. This is because the Compound Document Architecture uses the Application Control Architecture to invoke the applications needed to create compound documents... The software toolkit developed by the consortium, using DEC's Compound Document Architecture as a base, will be licensed and the specifications published. The Consortium says that the ODA standard also complies with the procurement policies of numerous government bodies throughout the world. The group is established as a European Economic Interest Group in Brussels and actively invites new members worldwide. Nobody seemed to know whether Xerox had been canvassed.

JAPANESE LAUD USL SPIN-OFF

In Tokyo, Unix Labs president Larry Dooling was assisted in his announcement by representatives from the five Pacific Rim companies, and by Jim Clark, president of Unix System Laboratories Pacific, who is resident in Tokyo. Dooling said it was appropriate that the announcement was made in Tokyo concurrently with the US because of the support that Japanese companies have given to open systems from the beginning of AT&T's operations there. Fujitsu director and general manager of open systems development, Takeshi Maruyama, said in his remarks that software was the key to open systems and compliance with industry standards was important; Fujitsu runs AT&T's System V.4 on everything from desktop systems to supercomputers. Gary Gong from the Taiwan institute outlined his organisation's aims, which include the fostering of research and development; its activities in the fields of software engineering, operating systems with Chinese language support, artificial intelligence and systems integration; and its hopes that it would become Unix Labs partner in Taiwan. NEC's representative Inoue Takehiko said that his company's purpose in investing at this stage in Unix Labs was to support the development of Unix and the growth of a "healthy" Unix Labs so that customers can use Unix-based systems with confidence. NEC also supports use of Unix across a wide range of systems, but not yet in native mode on its large mainframes. Oki Electric's general manager of the Computer Systems Development Division, Shinozuka, emphasised the opportunity investment gave Oki for strengthening its relationship with Unix Labs in development of software for workstation, server and fault-tolerant computers. And Shigenori Matsushita, manager of the Information Processing and Control Systems Planning Office at Toshiba said his company had been eager to join a team under the leadership of Mr Dooling to help in the development of high quality, stable systems that would satisfy customer needs. According to Dooling, current holders will be invited to increase their stakes to a maximum of 4.6% each as AT&T cuts its stake to 20% or so. The first meeting of the new board is planned for the end of this month or the first week in May, he said.

UNISYS ADOPTS INFORMIX, TUXEDO, ADDS SEQUENTS

Unisys Corp is targetting large corporates with its newly launched transaction processing software, Open/OLTP. The software is the result of Unisys' agreement to bundle a new version of its Ally applications generator with AT&T's Tuxedo transaction processing system (UX No 307), and a joint development effort between Unisys and Informix Software Inc. Unisys has bundled Informix's X/Open-compliant OnLine relational database with Open/OLTP. Unisys will be the exclusive supplier of this current version, 4.1, of the XA database. Open/OLTP also includes graphical performance monitoring and system administration tools. Unisys claims that the major attraction to large corporates will be the mainframe interoperability facilities available with Open/OLTP. Unisys is providing gateways for IBM and Unisys mainframes to use the Open/OLTP facilities within a distributed network. Using the TPC/A benchmark, Unisys claims 80 transactions per second for Open/OLTP. The software is available immediately. In addition Unisys announced extensions to its U6000 product line. The U6000/75 and U6000/85 are the Sequent Symmetry products. The U6000/65 is an Intel 80486-based system which has from one to five processors with up to 40Gb disk and 256Mb memory. Optional is a new MassCab-2 mass storage system which offers high capacity mirrored disks and increased data transfer speed. The MassCab-2 system uses multiple high-speed SCSI-2 disk channels connected to the host's EISA bus. An entry level 6000/65 with one 33MHz 80486 processor, 340Mb disk, 12 ports and 16Mb memory costs £24,000. A two processor version with 2.9Gb of disk, 56Mb memory and 96 ports, which Unisys claims matches the IBM RS/6000 Model 530 in performance will sell for £86,000.

H-P ADDS STRING OF NEWWAVE FEATURES

Seeking to jump-start its NewWave object-oriented environment in the wake of its joint submission with Sun Microsystems Inc of technology to the Object Management Group, and after lacklustre sales of the product, Hewlett-Packard Co has announced NewWave Office 3.0 office automation software that adds 10 new product capabilities, launch of a WaveGroup Developers Programme, NewWave Office business consulting services and additional customer implementations. NewWave Office began shipping in June 1990 and release 3.0 adds enhanced core services to create value-added applications that build on existing systems. It incorporates 10 products including client-server software-distribution capabilities, support for Novell Inc's NetWare, support for the 80386 machines under Santa Cruz Operation Inc Unix System V.3, and agent- and object-based electronic mail, networkwide ad hoc query and terminal-emulation capabilities. The Software Vendor facility enables personal computer users to pick applications from a server on the network; the application is automatically installed for the user - the company reckons that this is particularly useful for things like Microsoft Windows 3.0, which it reckons is typically difficult to install, although 3.0 is much easier than earlier releases. The product also manages functions such as licence tracking and enforcement, usage and configuration reporting. NetWare gives users access to all of the functions of NewWave Office services so that users can take advantage of file and peripheral sharing, connection maintenance and print-queue management. HP 3000 and HP 9000 servers now support Portable NetWare, and can be added to existing Novell networks. The aim of the WaveGroup Developers Programme is to create systems that solve business problems for customers and are tightly integrated with NewWave Office 3.0 products and core services. WaveGroup developers are picked by the company to enhance applications that complement NewWave Office 3.0 and some dozen developers have already been chosen. NewWave Office 3.0 will ship next month.

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A source with Novell connections claims he wouldn't be at all surprised if Novell up and got itself acquired by Sun Microsystems.

Interactive, whose appointment as principal publisher of SVR4 for Intel platforms touched off a still-unresolved firefight among other distributors not given similar status (UX No 322), is sponsoring its first annual developers conference June 2-5 in Los Angeles, aiming at the SVR 3.2 and SVR4 development and reseller communities.

MIPS is expecting the first silicon on its 64-bit R4000 chip from NEC next week. However, the street says they rushed the tape out to meet an end-of-quarter milestone and aren't really as far along as most people would be at this point. So how functioning the thing will be is questionable. Apparently they're expected to have a lot of cleaning up to do and will effectively be making the real submission later. Gossip also says the R4000's a big 16 x 18mm that would probably have to sell for \$1,000 to \$2,000 - more suitable for a \$25,000 box rather than a low-end \$5,000 to \$10,000 machine.

Will ACE duplicate the success of the IBM PC? The main difference is that the PC standard grew from market demand rather than pre-ordained marketing, and few observers expected the scale of growth. In 1981, Dataquest predicted that the market for IBM compatible PCs would rise from \$1,300m to \$4,000m by 1985, and that IBM would win some \$700-800m of the business. In fact, the market turned out to be five times as large, with IBM winning \$5 billion worth. Even Sun Microsystems, which has also been credited with inspiring the ACE consortium, only gradually realised it had a chance of creating a similar workstation standard through its Sparc strategy, as its previous Motorola and Intel product lines testify. ACE is anticipating such a demand before it has shown any sign of existing.

Correction: IXI's people got a little carried away with themselves describing IXI's new relationship with Data General (UX No 328). DG has put IXI's X.desktop software in its price book and is selling it to interested customers, but is still bundling IXI competitor Looking Glass with all its systems.

Motorola Inc has added a 64Kb cache memory management unit, the 88204, to its 88000 RISC chip set, and claims to be the first to integrate 64Kb cache and controller on one chip. It is pin-compatible with the 16Kb 88200 and Data General already has it.

P&P Power Systems Ltd, Rossendale, Lancashire, has placed a £1m order for Hewlett-Packard Co's new HP 9000 Series 700 Snake workstations.

And Sybase Inc says its range of relational database software is now available for the Snakes - prices for the various components go from \$450 to \$40,000 depending on CPU.

Siemens Nixdorf Information Systems Ltd together with Hospital Engineering Ltd has announced an information management system for the UK National Health Service: Case Mix runs on Siemens Nixdorf MX500 Unix systems and can be linked to other applications within the Health information technology environment.

Mitsubishi Electric Corp has added three new models to its line-up of 68040-based engineering workstations: they are the ME550 which comes with 16Mb memory, 320Mb hard disk, 3.5" floppy drive, and 256-colour bit-mapped screen and costs \$32,500; the ME550E, which adds a graphics engine to that configuration; and the ME550F with 32Mb memory, 670Mb disk and 1,670 colour capability, which costs \$74,000; Mitsubishi has complemented the on-chip 8Kb cache with a 256Kb cache which operates in no-wait state mode; the workstations run ME/UX-II which is Unix System V with BSD extensions, and X-Window System release X11.4; Mitsubishi is pitching the boxes at financial and distribution markets as well as design.

Intelligent Wave Inc has become the exclusive distributor of the Technicon Trading System for Japan and Japanese companies around the world: it runs under Unix on an IBM RS/6000.

NeXT Computer says it has shipped 8,000 CPUs this first calendar quarter, all to non-technical users, which, it says, puts it on a par with the amount Sun sold to that same segment in the same period: analyst reckon that sales could reach 36,000 units this year.

Huntsville, Alabama-based Intergraph Corp is hanging out the flags and toasting the fleet, having won a \$362.4m contract from the US Navy for computer-aided design and manufacturing systems and services over an indefinite period: the company looks for \$10m to \$15m of business under the contract this year, rising to \$30m to \$50m next year; overall, the contract calls for 2,820 workstations, 450 servers and 11,000 mass storage devices, plus 500,000 man-hours of support services; helping out Intergraph will be Martin Marietta Corp's Information Systems Group, 3Com Corp, The Jonathan Corp and Casde Corp.

And Intergraph has launched three new workstations: the InterView Series 2000 Model 2020, rated at 16 Mips and with a starting price of \$21,000, and the Series 6000 Models 6240 and 6280, rated at 18 MIPS and costing from \$34,000: a graphics co-processor from Sky Computers of Chelmsford, Massachusetts is optional. Control Data Corp is one of the many companies launching MIPS-based hardware in the reflected light of the ACE announcements: its new machines include the 4320 and 4350 workstations, using a 33MHz R3000 chip, and the 4350, a server using the same chip, rated at 31 SPECmarks and selling for \$30,000.

All this time accusing fingers have been pointed at Bill Gates singling him out as the devious mind behind the ACE initiative - but it's Compaq that actually wants to take the credit for going out and pulling all the various strands together. Bill probably loses the great Satan horns the industry has awarded him, but he's still the demon bent on creating an operating system to compete with - if not to derail - Unix.

The lack of good 68040 parts has caused Arix Corp severe problems, but now that good parts are shipping in volume, the San Jose-based company is finally able to announce the System90/15 with two 68040s rated at 20 MIPS each, distributed input-output processing subsystem, 64Mb memory and room for 15Gb disk, but only for August delivery. The System90/15 supports 64 users and it starts at \$40,000. A version for developers with one 68020 is out now for \$21,900.

The SAS Institute has placed an order worth \$15m for Hewlett-Packard's newly announced HP Apollo Series 700. The three year contract is for up to 1,000 machines.

Informix is the first Unix-based relational database to be certified by the National Institute of Standards and Technology: it complies with the US government's SQL standards.

Ashton-Tate now owns all of Interbase, the Bedford, Massachusetts-based relational database management people and inventors of the multimedia "blob" data type. It acquired the 49% interest it did not own late last month, expecting its technology to play an integral role in future generation dBase products. Interbase will continue to operate as an industry independent entity under a new president, Paul Bergeron, who moves over from Stratus where he was VP, international sales.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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22 1991

The weekly information newsletter for the UNIX ® community worldwide

London, April 22-26 1991

Number 330

SANTA CRUZ COOKIE CRUMBLES INTO OSF/1 - TAKES OVER DEC'S UNIX DEVELOPMENT

Stakes in the battle for control of the Unix skies were raised again when clouds of fallout from the Advanced Computing Environment consortium's launch began to drift ashore last week. It seems, for all intents and purposes, that DEC is giving up on the bulk of its RISC Unix operating system effort and transferring responsibility for development of its future requirements to the Santa Cruz Operation. DEC says it will supply the commercial OSF/1-Ultrix implementation it is currently working on to SCO, which will integrate DEC's source code with its AT&T Unix-derived Open Desktop operating system product bundle. SCO will license the new OSF/1-Open Desktop back to DEC, which it will market as its standard offering across its entire range of Mips Computer Systems-based RISC Unix systems after adding functionality for specific application environments such as transaction processing, fault-tolerance and multimedia where and when it is needed. SCO has promised to make the Open Desktop it builds around the OSF/1 kernel binary and source code-compatible with DEC's existing RISC Ultrix Unix-like. Joe Maynard, DEC's Ultrix manager, expects "most DEC customers to phase over to Open Desktop," but says the firm will continue to develop its Ultrix implementation for an "unspecified" length of time - presumably at least until the beginning of next year when SCO begins to roll out production versions of OSF/1 Open Desktop. The cocktail of OSF/1, Ultrix and AT&T Unix V.3.2 technology will also form the basis of the Unix operating system that is to be offered on the ACE group's Mips Computer Systems-based hardware platform, (UX No 329). Importantly SCO says it will also make that technology available on the Intel Corp architecture platforms which make up the majority of its business via a "seamless" upgrade path for existing Open Desktop customers to the OSF/1-ACE Open Desktop. "It'll be a single piece of software code for Mips RISC and Intel architectures," said SCO's Steve Spill. Moreover he said the technology will also conform both to Unix System Laboratories' System V Interface Definition release 3 - which includes most of the requirements for compatibility with Unix V.4 - and to the Open Software Foundation's AES, which defines OSF/1 compatibility requirements, as well as to X/Open's XPG3 portability guide. Spill said SCO is still trying to figure out whether Unix V.4 applications will run on the initial release, though "we expect some to run immediately." Furthermore SCO says it will remain a member of Unix International and "if things go well we'll continue to take USL technology." A developer's kit, expected by late Autumn, will allow applications to be ported from Intel across to Mips Computer Systems architecture - in readiness for ACE's hardware platform - and SCO says that everything running on its products, from Xenix 808X6 up to the multi-processing 80486 will be able to run, after source-level recompilation, on Mips' R3000A and R4000 architectures. The new Open Desktop bundle will include existing application technology - including the latest version of IXI Ltd's X.desktop manager, see page two - as well as an MS-DOS emulator and a common interface layer for running on LAN Manager X, Novell Netware and X.25 networks. SCO is also reported to be working on a subsequent, bi-endian version of Open Desktop that will allow applications written to a big-endian byte-ordering scheme to run unchanged. The ACE vendors have chosen to support a little-endian operating system because MS-DOS and OS/2 running in Intel architectures and Ultrix running on Mips and VAX processors are based upon little-endian schemas. SCO says the future contents of Open Desktop will be decided by an advisory council which will include OEM customers and end-users, including OSF and Unix International. With this alignment Santa Cruz appears to be tying future of its business perilously close to the success or failure of OSF's operating system technology and ACE's ambitious low-cost workstation gambit, (UX No 329).

IEEE REJECTS BOTH OPEN LOOK AND MOTIF

Late Thursday night in Chicago, the IEEE's Computer Society POSIX Technical Committee on Operating Systems scotched the hopes of both the Open Software Foundation and Unix International by agreeing to accept neither the OSF's Motif user interface nor Unix International's Open Look as part of the POSIX standard (UX No 327, 328). The Committee, which finally closed the discussion towards midnight on Thursday, effectively put the proposal on ice. It appears that the working group did not want to sacrifice the industry consensus it has managed to keep so far by choosing one of two opposing products. Privately, it was thought that given a year, the situation might be clear enough for a decision to be made. Meanwhile, two POSIX committees are now at work on hiding the differences between Open Look and Motif, at least from a programmers point of view. The 1202.1 group is working on a layered applications programming interface, aiming for common code to produce Open Look, Motif, Macintosh and MS-Windows interfaces - the front runner is currently technology from XVT of Colorado (UX No 293). The 1201.2 committee is working on a common style guide for all windows implementations.

OMG PICKS FIVE - BUT REBEL VOICES HEARD

The Object Management Group has picked a shortlist of five technologies that it will consider for use as its Object Request Broker, ORB, the mechanism that allows objects to transparently make and receive requests and responses in an object-orientated environment. The five finalists are UK, Cambridge-based Architecture Projects Management Ltd, DEC, Hewlett-Packard Co/Sun Microsystems Inc, the Data General spin-off HyperDesk Corp and NCR Corp/Object Design Inc. Dropped from the original seven contenders are Groupe Bull and Distributed Software Engineering Tools Inc. From these five a single technology will be recommended for selection at an OMG meeting in June. The votes show that the joint HP/Sun submission was most strongly supported with 17 cast in favour, followed by HyperDesk and NCR/ODI both with 15, DEC with 13 and APM with 12. Bull and DSET were eliminated with 10 and 2 votes respectively. Apart from the contenders themselves, the voters were Data Access, Intel, AT&T, Informix, Visix, Objectivity, Ellemetel, Tivoli Systems, Mentor Graphics, Genesis Development, Philips, Microsoft, Netwise, Constellation, Aldus and Unify, all of whom had a yes/no vote available to cast on each submission. However not all a bed of roses at the Framingham, Massachusetts-based OMG. Several of the participating companies subsequently voiced loud reservations about the nature of the process, and indeed the ORB itself. Microsoft for one said a "fair evaluation of the submissions is impossible [because] the submissions do not appear to be addressing the same set of issues in a uniform manner. The definition of object is unclear. The scope of ORB is unclear. Without this common base, an apples-oranges comparison becomes the only viable possibility; certainly evaluation on technical merit is too difficult." Microsoft believes part of the problem is the weak definition of objects and services for ORB, and that if the OMG is really geared towards defining a standard that guarantees interoperability, then some common notion of object model is required. DSET, though sounding like sour grapes, supports Microsoft's position, saying that the selection process may be moving too fast in light of the fact that amongst OMG members there is still no consensus to what the object model should look like, or indeed on the scope of ORB itself, given that most of the submissions go well beyond ORB's scope given any definition. Another non-submitter shares Microsoft's worries but reckons that OMG already knows the problems - but questions whether it has the guts to do anything about it. "We may know we have a train running full steam in the wrong direction, some may even have ideas what to do about it. But, I have yet to see the commitment necessary, by the number of people necessary to put the train on the right track."

ACE ARGUMENTS CONTINUE OVER COMPONENTS OF OPEN DESKTOP...

The choice of desktop manager appears to be yet another crack in the ACE strategy. IXI Ltd's X.Desktop went completely unmentioned at ACE's huge press conference in New York, despite a business wire from IXI that X.desktop "provides the graphical user environment for the Unix component of ACE." But Scott MacGregor, SCO's vice president of product strategy said last week that a final decision had not been made. X.Desktop is under consideration, along with "lots of others" according to MacGregor, although SCO UK admitted that existing Open Desktop technology would be included in the ACE release - see page one. Both Compaq and DEC declined to comment on the situation, although DEC did eventually say it would go with whatever SCO came up with. DEC currently sells the competitive Visix Looking Glass product, which Compaq is also believed to be evaluating. Pyramid spokesman Doug Free called the decision premature, saying "we have no idea what's in Open Desktop - it's not even a paper spec yet. We would have to see where it fits in with our strategy [but] there's nothing to evaluate. All [the ACE initiative's] managed to define is the chip interface... the little endian byte-ordering. That's pretty low-level compared to an operating system." Pyramid is sticking by its initial choice of Visix for its brand new MIPS-based S series (UX No 329). IXI president Ray Anderson said that he "can't discuss what Open Desktop is", but said that the IXI press release "was a confirmation of what SCO has announced.

OLIVETTI SAYS IT WILL OFFER BOTH OPEN DESKTOP AND V.4 ON ACE

Meanwhile, Olivetti Systems and Networks came out of the closet last week, saying that it would offer a choice of both SCO's OSF/1-based Open Desktop and System V.4 on its forthcoming ACE-compliant platforms. Olivetti, which endorsed the launch of the new Pyramid S Series, showed a diagram separating off the ACE hardware as workstations. This leaves its mainstream Pyramid-based line as strictly Unix V.4-based systems conforming to the (big-endian) applications binary interface from Unix Software Labs, and using Pyramid's V.4 MIPS reference port.

PARALLEL PROCESSING: HP MULLS ENTRY

Hewlett-Packard Co is considering entry into the embryonic but very promising parallel processing market, but according to Electronic News has not yet decided whether to go with one of three projects that use its Precision Architecture RISC, or buy a machine in OEM. It is not certain that any entry will be a massively parallel machine: the company says only that it will be "more than just a four-way computer system". Any use of its own technology will require adjustments to its RISC architecture, which is not designed to handle more than four processors.

TIS MAKES A PLAY FOR UNIX ACCOUNTING BUSINESS

Misys plc's TIS Software Ltd is gearing up to take on the likes of Tetra Business Systems and Multisoft Financial Systems with the release of a Unix accounting software package, Strategix, slated for delivery in June. Ten-year-old TIS says it has spent some £2m on developing the character-based product, which, written in C, runs on the Altos Computer Systems, Hewlett-Packard, DEC, IBM, Mips Computer Systems and Intel-based Unix and SCO Unix systems it distributes. The Unix standard X-Windowing environment, along with the Motif and Open Look graphical user interfaces are not yet supported. CHA Communications, CP Business Solutions, Team Systems Group and Mentor Systems - all Misys companies - contributed to the development of Strategix, which TIS's John Johnston described as "way ahead of Multisoft and Tetra." However TIS hasn't put a price on the software, or indicated whether any of the 50 value-added resellers it is targeting have actually inked agreements yet.

WORLD'S SUPERCOMPUTER INDUSTRY ASSEMBLES FOR SUPER-COMPUTING

JAPAN 91 EVENT IN TOKYO

April 10 to 12 saw the second annual SuperComputing Japan 91 conference and exhibition in Tokyo. Supported by the US Department of Commerce, the American Embassy and the Japan External Trade Organisation (supercomputers are, after all, a trade issue), the three days included a high-level conference with sessions on various application areas including computational fluid dynamics (for aircraft and car design - talks by researchers at Boeing Co and Nissan Motor Co), structural analysis (applications of supercomputing to safety development - Nissan and MacNeal-Schwendler Group), performance (including a talk on the performance of the NEC SX-3 supercomputer by Dr Raul Mendez, head of the Recruit Institute for SuperComputing Research in Tokyo), and others on supercomputer architecture, use in chemistry, and environmental analysis. The exhibition held concurrently had exhibits from 60 companies and organisations and around 10,000 visitors were expected. The Cray Research Inc booth was crowded with visitors wanting information on the newly released Y-MP/4E machine; almost alongside were booths from two companies that are new joint venture partners with Cray, Yokogawa Cray ELS, which was formed in December last year as a 50-50 joint venture with Cray, for sales of the Cray XMS minisupercomputer, and Canon Supercomputing SI Inc, which sells a range of computers including the Cray Y-MP2E and the FPS Model 500EA Sparc minisupercomputer. Kubota Computer Corp had on display the Titan graphic supercomputer as well as a range of MIPS-based machines the RS3230 workstation and the RC6280 enterprise server. Convex Computer demonstrated through its distributor Tokyo Electron, where the Ultra-Net 1Gbps Ultra Network System was also on display - 20 UltraNet systems have been sold in Japan already, according to a Tokyo Electron representative, and this has been primarily on Cray and IBM Japan Ltd systems; however growth in sales is expected as the Japanese supercomputer vendors such as Fujitsu Ltd, NEC Corp and Hitachi Ltd provide interfaces to the UltraNet equipment in their operating systems - Fujitsu's is ready already. BBN Advanced Computing Inc's TC2000 was on display at the Argos Graphics stand. UK company Torque Computer Ltd was represented by its distributor Marubeni Co, and Mark Ware Associates Ltd of Bristol, developer and designer of Transputers said that it was actively looking for representation. In addition, NEC was touting its new SX-3 supercomputer, Fujitsu its strength in research and development and Hitachi its S-820 supercomputer, pandering to the Number One Japanese sporting passion by running among others a golfball path simulation system.

INTERACTIVE EXTENDS SUN PACT

Interactive Systems is to distribute and sublicense Portable Open Windows Source version 2 from Sun Microsystems, extending its SunOS resale pact and fleshing out the Interactive portfolio. Sun has been promising availability of the Open Look-implementing window environment since January but hasn't put it on the market, Interactive said. Perhaps when Sun's new software subsidiary SunSoft becomes a fully-fledged entity in June, it will begin to handle the product. However, OEMs and ISVs may prefer to trade with Interactive to shelter their volumes from Sun's scrutiny. Interactive will distribute two types of licences: one for commercial redistribution of object-code versions and a second for internal use only. Source licences are immediately available at an introductory price of \$995. OpenWindows is bundled with Sun workstations and includes an X11 server. The product, which supports both X11 and Postscript-compatible News applications, is deliverable in portable form for simpler adaptation to other hardware platforms.

88OPEN CALLS ACE "MISLEADING AND TECHNICALLY INCOMPLETE" ...

88Open, widely regarded as the most successful of the organisations working on standard hardware and software for a particular chip - even if the Motorola 88000 itself has not achieved widespread acceptance from the majors - calls the recent ACE Consortium announcements "misleading, technically incomplete and futures oriented." It particularly criticised the choice of two operating systems (NT and SCO), each with individual application sets; the choice of two processors (Intel and MIPS), allowing only source code compatibility between the two; and the change in byte ordering from current big-endian to little-endian for MIPS-based software, which will mean re-compilation or a loss of performance. "People forget, it's not just the hardware vendors who have to do the work, it's the ISVs", said 88Open director of marketing Derek Meyer. "We've been at this for three years, and we've learnt a lot about how long it takes. These things will delay ACE's time to market." 88Open says it has now fully certified its 150th binary compatible applications program for any 88Open-conformant system.

...COMPAQ "COULD WIN OVER DEC'S USER BASE" ...

Other reactions to ACE - mainly off the record - include speculations that DEC could gain benefit from ACE in the short term, but could lose out once Compaq enters the market. "DEC has been losing money, shipping low volumes, and is hoping to give itself a boost by promising customers that ACE systems are down the road," said one source. "But Compaq is a clone company, spending only 5% on R&D. It won't price the boxes at the same level as DEC. So even if ACE is successful, DEC will in effect be shipping its installed base over to Compaq." Meanwhile, Electronics News quoted David House, Intel Corp's senior vice president of the Microcomputer Components Group saying that ACE had clouded the issue by endorsing "so many standards - at least four different sets of binaries for every application".

...AS ACE GETS THUMBS-UP IN SCHULMAN'S "WINNING HAND"

UBS Securities vice president Marc Schulman has followed up his stirring pre-announcement dissection of Microsoft and the ACE consortium, (UX No 328), with another analysis piece called "ACE - The Winning Hand". He concludes that "ACE is the final conclusive proof that the 'open systems movement' has slipped out of the grasp of its originators - AT&T and Sun" and reckons that with ACE making the Open Software Foundation's Distributed Computing Environment the basis of its standardisation and interoperability it's now practically a foot in the door for the dominant multivendor computing environment. He believes pressure will be brought to bear on Sun over the next year to support DCE over its own ONC/NFS and imagines that support would require Sun to become a member of OSF. Get it...it's a good read.

HEWLETT X STATIONS USE 80960

Hewlett-Packard Co's new high-performance X stations for use with its block-busting HP Apollo 9000 Series 700 workstations are built around the Intel 80960 RISC microprocessor which is designed for embedded applications, in this case graphics control. The new HP 700/RX stations - four models priced at between \$3,000 and \$6,000 are for customers that don't need a separate workstation for each user, and they are pitched at financial analysis, computer-aided design, software development, geographic information systems, desktop publishing, and office and manufacturing automation.

IBM LICENSES HEWLETT-PACKARD OPENVIEW PRODUCTS

IBM last week licensed portions of Hewlett-Packard's OpenView network and systems management software, a component of HP NetWave multivendor voice and data network Management scheme, for the RS/6000. It said it intends to expand its NetView family of products to embrace network management for an AIX-based open network management system to support management of AIX and other Unix-based networking environments and telecommunications equipment. IBM gave no date for when a product might be expected. NetView is already used in 370 and 390 environments. The rumour mill has been primed for some time for IBM to acquire some NewWave technology and the win is doubtless an important one for Hewlett-Packard particularly in view of its recent failure to entice Microsoft into the NewWave camp (UX No 326). The base technology licence is an outgrowth of the joint Hewlett-Packard/IBM submission to the Open Software Foundation and its Request For Technology for a Distributed Management Environment (DME). IBM is licensing Hewlett-Packard's OpenView Network Management Server and its OpenView Network Node Manager. The server is one of the components included in the RFT submission but IBM is not licensing Hewlett-Packard's embedded database. The node manager was not part of the submission. Both companies deny that this move will influence OSF's pending DME decision which both also maintain they will adapt to if it goes against them. The node manager allows a systems administrator to configure, troubleshoot and monitor the performance of a TCP/IP-based network from a single workstation. The server extends the node manager's capabilities by means of APIs based on OSI protocols and integrates management information among multivendor equipment. OpenView, which first debuted in 1988, is installed in more than 2,000 sites worldwide and 120+ developers kits have been sold to OEMs. It is available on HP 9000 workstations, Sun equipment and PCs.

MICRO FOCUS COBOL/2 FOR UNIX; LINK TO SMALLTALK

Micro Focus has launched Cobol/2 1.2 and Toolbox so that its tools and compiler are available under Unix. At the moment this product is available as a package for Unix on Intel 80386 architecture. Versions for other Unix implementations will be offered to hardware vendors via OEM deals. Cobol/2 for Unix is compatible with most major mainframe Cobol environments, and seems certain to contribute to the trend of mainframe users downsizing to cheaper but equally powerful Unix machines. It follows the AT&T System V Interface Definition requirements and the X/Open portability guide so that applications will be portable to any machine for which Cobol/2 has been implemented. Features include multi-user file and record locking, pipes and redirection from Cobol syntax, direct call from C to Cobol and from Cobol to C, as well as C pre-processor support. The Toolbox includes Edit or, Screens, Advanced Animator and Session Recorder. Cobol/2 1.2 adds ISAM file data and file key compression and colour support. No prices. Micro Focus has also signed an agreement with Digitalk Inc to enable it to integrate SmallTalk/V PM, IBM's favourite object-oriented language into the Cobol/2 Workbench. The Newbury company has developed an interface that will enable SmallTalk applications to exchange data and messages with Cobol applications. The Object Oriented Option for the Cobol/2 Workbench is \$1,500. It has also launched a "Windows Enabling Kit" so that Cobol developers can write applications to run under Windows 3.0 and can migrate existing Cobol applications over to use Windows memory management and windowing capabilities, by relinking run-time libraries with the new ones in the Windowing kit.

IBM SOWS FURTHER CONFUSION OVER AIX UNIX WITHIN SAA

IBM sowed more confusion in the minds of its users last week as Dale Harris of IBM Austin was brought to the UK to explain that the 1990s will be the decade of open systems, and that IBM was no longer thinking in terms of its proprietary Systems Application Architecture on the one hand and AIX Unix on the other: its open systems approach will encompass both SAA and AIX. IBM's definition of open systems is the Posix definition of "interoperability and portability of data, applications and people". Within IBM the open systems movement is owned by Mike Saringa who is responsible for developing the new structure under the aegis of concept man Earl Wheeler who has hitherto been known as the "father of SAA", but who is probably now contesting paternity. Anyway, there is apparently no longer a separate SAA body politic under Wheeler, there is simply an open systems strategy. As part of this IBM New Age, SAA is being opened up to embrace industry standards: for example, the SAA Common Programming Interface for Communications is being submitted to the Open Software Foundation, as is the Common User Access interface, because IBM wants "a single look and feel for the industry". IBM is also, according to Harris, working towards supporting Open Systems Interconnection, so that IBM can offer a single stack by extending OSI to meet SNA. However, Harris moved quickly to reassure the IBM world that although the company will continue to open up SAA, it will not abandon its customers that have a long-term commitment to SAA and AIX - it will continue to add value but claims it no longer wants to lock people in to IBM kit, it wants them actively to prefer it. Asked how this new "Open IBM" applied to AD/Cycle Harris referred to object-oriented technology as offering the next software development paradigm, saying that IBM will offer more broadly industry-accepted environments that could sit alongside AD/Cycle, or AD/Cycle could be extended to make it more acceptable as an open environment. Harris said that IBM is negotiating to join the Object Management Group and sees this organisation as key to next generation software. As regards the vexing question of when AIX will be included in the AD/Cycle environment, IBM pointed gnominically in the direction of the Japanese Sigma project, which has "similar goals to AD/Cycle" but is being developed specifically for Unix environments - IBM is part of the project but declined to explain its relevance to AD/Cycle. As part of this new look and feel IBM, John Glyde, hitherto IBM UK's AIX manager is now to be IBM UK's IT Infrastructure manager, "providing the infrastructure for customers, whatever they want to do".

CONTROL DATA ADDS MIPS' NEW MODELS

Control Data Corp is one of many companies launching MIPS Computer Systems Inc-based hardware in the reflected light of the Advanced Computing Environment announcements. The company's new offerings are the 4320 and 4350 workstations, using a 33MHz version of the 32-bit R3000A chip, and the 4350, a server using the same chip, which Control Data rates at 31 SPECmarks and is offering for \$30,000. The Minneapolis mainframer buys its machines OEM from MIPS Computer, and the new models are the ones MIPS introduced earlier the month.

INMOS PREVIEWES ITS 200 MIPS, 25MHz SUPERSCALAR TRANSPUTER

Inmos Ltd has launched its H1 Transputer as the T9000. The new RISC microprocessor, with its increased power, parallel capabilities, and communication performance, is targeted at real-time embedded computing - supercomputing, database applications, and X-terminals; imaging - multimedia applications, colour laser printing and image processing; and communications - ISDN and internetworking systems. It fabricated in a triple-level metal CMOS process, integrating a 32-bit integer processor, a 64-bit floating point unit, 16Kb of cache memory and a communications subsystem - consisting of a dedicated virtual channel processor and four 100Mbps serial Transputer-to-Transputer links - on a single chip. The core superscalar CPU, containing the 32-bit arithmetic logic unit and 64-bit floating point unit, enables a peak performance of 200 MIPS and 25 MFLOPS at a clock speed of 50MHz - 10 times more powerful than the T805 Transputer. A five-stage pipeline structure enables the issue of multiple instructions per cycle - an instruction grouper in the pipeline takes code sequences and organises the instructions into appropriate groups, eliminating the need for a compiler to schedule the multiple execution units. The on-chip serial links have a total bi-directional communications bandwidth of 80M-bytes-per-second used for direct communications between T9000s. The 16Kb on-chip cache can be programmed to function as 16Kb of on-chip memory or 8Kb of on-chip memory and 8Kb of cache. A 64-bit programmable memory interface supports the on-chip cache, directly addressing 4Gb of physical address space and provides a peak external memory bandwidth of 200M-bytes-per-second. Dynamic, static, EPROM and video are the four banks of external memory supported - the data bus of each can be configured to be 64, 32, 16 or 8-bits wide depending on the type of memory used. The T9000 is supported by three new peripheral devices - the C104 packet routing switch, developed with in the Esprit II Puma project; the C100 system protocol converter, which converts between first generation Transputer links and T9000 links; and the C101 link adaptor, which provides an interface between T9000 links and external systems such as buses. The T9000 is software-compatible with the first Transputer generation, and Inmos expects first silicon on the part in the third quarter, with availability in first quarter 1992 in a 208-pin ceramic quad-flat pack when optimising ANSI C, Fortran 77 and Occam 2 compilers will arrive.

DEC CONFIRMS MASPAR DEAL WITH A MINORITY STAKE

Digital Equipment Corp has confirmed entry into the massively parallel computer systems business in partnership with MasPar Computer Corp of Sunnyvale, (UX No 329), and revealed that it is taking an undisclosed minority stake in the company, said to be between \$5m and \$10m in the company that did \$8m in sales last year. Under the agreement, DEC will market MasPar computers worldwide and MasPar will pay DEC licence fees for some of its patented technology used in the MasPar computers - the machines are controlled by DEC's Ultrix Unix. DEC's new Massively Parallel Systems Group will also acquire licences from MasPar for its unique programming environment software. Maspar's machine uses a single instruction multiple data or data parallelism approach with a simple custom CPU chip with 64-bit architecture, of which it currently uses only four bits. Its MP-1 line comes with from 1,024 to 16,384 processors with performance up to 26 GIPS, 1.3 GFLOPS. DEC will make specific product announcements in a few weeks. It has dropped its own massively parallel computer development effort.

NORSK DATA HOPES TO BOOST UK UNIX BUSINESS WITH DOLPHIN SERVERS

Norsk Data AS vice president Soren Voigt was in the UK last week at a customer "open systems day" at the company's Benham Valence headquarters near Newbury in Berks. The occasion also marked the UK launch of Norsk's Uniline 88 systems, introduced in Germany at Hannover last month, but on the market for over a year in Scandinavia. The Uniline 88 systems are a range of Motorola 88000-based high-end servers from the company's Dolphin spin-off, and are the first to be certified at all levels in the 88Open test suites. They are designed to act as servers for networks of hundreds - or even thousands - of PCs. (Norsk Data sells on Acer PCs in its home market and Tulip PCs over here). The machines, which up to four CPUs in parallel and intelligent controllers for I/O, disk and networking support, are rated at between 29 IBM MIPS and 173 MIPS, and have achieved a rating of 150 TP1s using the Sybase database. Voigt says the machines have been "extremely successful" in Scandinavia, but that he had wanted to build up the product line before introducing them abroad. The UK focus will be on local authorities, central government and manufacturing. Norsk Data now thinks of itself as a systems integrator, and now that it has ported just about all of its proprietary software over to the new line, it hopes that many of its existing customers will be encouraged to migrate. To help, Norsk has built up a set of migration tools. Norsk has been active in the UK Unix market for two years, mostly selling re-badged boxes from Motorola Computer Systems, but so far it has not been big business. Last June, the company also entered into an OEM deal with Data General for the Aviiion series.

LUCID CUTS PRICES OF WORKSTATION COMPILERS WITH C FOR SUN

Lucid Inc, Menlo Park, California, has launched its ANSI-compliant Lucid C compiler for Sparc-based workstations at the aggressive price of \$495, bucking the trend of workstation compiler prices, which more commonly cost between \$900 to \$2,000. And the company says it has other compiler and programming environment products lined up for the third and fourth quarters of the year, aimed at the same market. Available by the end of April, Lucid C is based on technology previously licensed to Amdahl and Concurrent Computer Corp. It is fully compatible with Sun-provided libraries and tools, and is said to have been specifically optimised for the Sparc. It comes with documentation and 90-day money back guarantee. Six-year-old Lucid also produces Common Lisp compilers. It acquired C and C++ experts Peritas Inc in January of this year. Peritas was one of the contenders for the Open Software Foundation's Architecture Neutral Distribution Format request for technology.

TANDEM ADDS OSI/FTAM FOR NONSTOPS, FTAM-UX FOR S2

Tandem Computers Inc has introduced OSI/FTAM for its proprietary NonStop systems, and FTAM-UX for the Integrity S2 fault-tolerant Unix system, both products being based on the Open Systems Interconnection model's specification for File Transfer, Access and Management. FTAM enables remote file access and transfer and the ability to create, delete or modify files between dissimilar computers in an OSI net. OSI/FTAM is integrated with Tandem's Distributed Systems Management products; both conform to US and UK Government Open Systems Interconnection Profiles. OSI/FTAM arrives in the third quarter at an initial licence fee of \$880, FTAM/UX in the fourth, on limited release at an initial \$5,000.

MIPS IS HOPING FOR FIRST PASS AT 64BIT R4000 RISC CHIP FROM NEC THIS WEEK

MIPS Computer Systems Inc is expecting first silicon on its 64-bit R4000 chip from NEC Corp this week, but word is they rushed the tape out to meet an end-of-quarter milestone and aren't really as far along as most people would be at this point. So how functioning the thing will be is questionable. Apparently they're expected to have a lot of cleaning up to do and will effectively be making the real submission later. Gossip also says the R4000's a big 16 by 18mm that would probably have to sell for \$1,000 to \$2,000 - more suitable for a \$25,000 box than low-end \$5,000 to \$10,000 machine.

SUN LAYS DOWN LAW ON CLONES FOR VARs

In a policy switch that went into effect Saturday, April 20, Sun Microsystems has forbidden its 500-odd US dealers and value-added resellers to sell any of the Sparc clones or compatibles now on the market - except for the laptops - if they wish to continue doing business with Sun. The restriction even applies to Solbourne multiprocessors, a segment Sun's current product line doesn't service, in anticipation that it will move up-market later this year. Sun's tactical marketing director Curt Fisher said the move was made in deference to Sun's direct sales force which threatened to refuse to support, turn over leads or bring VARs and VADs into accounts if they stood to lose sales to the cheaper clones. Fisher said the corporation must back its 470-man sales force since it's determined to increase sales productivity and double or treble revenues in the coming years without adding manpower. Sun is also anxious to avoid price wars and at the same time proliferate Sparc machines in new channels, a job it wants the clones to do. In return for exclusivity, Sun is promising to increase its support of VARs and VADs and intends doubling their training days, admitting them to Sun's internal Sun University classes and doubling their support budget. The channels reportedly seem immediately accepting of the dictate and actually only a half dozen cases of Sun VARs selling clones have come up, mostly on the West Coast, Fisher said. However, how long they remain loyal to Sun is an issue, as is whether they try to sidestep the restriction and set up subsidiaries to resell clones. Sun's action is also meant to force its cloners to spend the time and money needed to build indirect sales of their own, rather than cherry pick. Since the bulk of the Sparc cloners are Far Eastern concerns with little apparent entry to the American dealer community, Sparc International, the outfit now responsible for recruiting companies as well as cloners, has spent months trying to set up a channels development program that will help them find resellers that can handle their workstations. It has put together a profile of that distributor or reseller: He is financially solvent and already familiar with Unix, has networking experience and probably already sells at the high-end of the PC market, has technical hardware and software people in place and already has a dedicated sales force. In combination with a consultant said to have a database of some 1,700 resellers, Sparc International will then try to do a little matchmaking starting with a series of educational seminars for both the cloners and potential resellers some time this summer.

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The Weekly information newsletter for the UNIX ® community worldwide

Frame Technology Corp and Matsushita Computer Systems say that Japanese FrameMaker 1.0, the Unix-based publishing software system is now shipping: it's \$4,300 in Japan.

Locus Computing Corp has appointed Unisoft A/S - nothing to do with the London-based UniSoft Unix developer - as its Norwegian reseller.

Tetra Ltd, Maidenhead, Berkshire, says its Chameleon suite of accounting software is now available across DEC's range of Unix systems.

Sun Microsystems has introduced a NeWS Toolkit for building what-you-see-is-what-you-get, WYSIWYG, applications under Open Look in its Open Windows development environment - prices start at \$225.

Ultimate Corp, East Hanover, New Jersey says it has been named Hewlett-Packard Co's top reseller for the HP 9000 Series 800 multiuser Unix machines: according to the Hewlett announcement, Ultimate sold \$30m of 800s to companies in North America, the Pacific Rim and Europe in the first year of the agreement.

NEC Corp revealed that the primary thrust of its 10-year OEM agreement with Stratus Computer Inc, announced last September, will be the new Intel 80860 fault-tolerant RISC Unix machine, (UX No 326); it now says it looks to sell 600 in three years, raised up from its previous estimate of 500.

Systems Design Technology Inc of Santa Clara, has set up a service to help US software companies find partners and target products for the Japanese market: the company, a wholly owned subsidiary of Systems Design Corp of Osaka, Japan, is porting the source code for US software to run on MS-DOS, MS-Windows and Unix on NEC, IBM Japan and Fujitsu computers; the process includes the double byte implementation necessary to display and manipulate the more than 4,000 Kanji characters, the two syllabic character sets and Roman alphabets used in Japanese; along with the basic source code conversion, Systems Design will adapt menus and rewrite documentation to fit the appropriate Japanese target market; it has also formed a relationship with Smale/Brooks Ventures, a partnership-development company located in Tokyo and Silicon Valley, to help American firms find partners.

Commenting on its first quarter figures, NCR Corp said that earnings per share would have been \$0.06 better - and would therefore have risen - but for a \$7m special charge for defending against the hostile AT&T Co bid: the worldwide order value for small computer systems and workstations reached an all-time high for any quarter with significant orders for the NCR System 3000 Model 3320 - and there was even solid order growth for the NCR 9800 mainframe; the company is preparing to launch two models of the System 3100 notepad and notebook portable computers and, at the high-end, the NCR System 3600 large-scale computer which it expects to be the most powerful general-purpose computer offered in the market at the time of launch.

NeXT Inc has decided to scale right back its reliance on Businessland Inc, and will in future sell its computers through "only a handful" of outlets - which do not include Businessland here in the UK, where P&P Plc is now the sole distributor: in the US, NeXT plans to double its direct sales force to 150.

Separately, NeXT Inc said that it would have to ship its \$4,000 NeXT Dimension 32-bit colour board without C-Cube Microsystems Inc's CL550 image compression processor because the part is not performing to spec: the company has reportedly redesigned the board so it can take an image-compression daughterboard in due course; C-Cube confirmed that the CL550 is delayed three months.

The US Department of Commerce has selected 20 companies for a Japanese Corporate programme to promote US companies and products in Japan - of those 20 two come from the computer industry and they are Compaq Computer Corp and Oracle Corp: Oracle has recently set up an office in Tokyo and has translated its software into Kanji, but needs partnerships to break into the Japanese market; Oracle said it was in no position to comment on renewed gossip that Matsushita Electric Industrial Co may buy into Oracle.

Sun Microsystems released several new Sparc-compiler language products that reportedly improve Sparc system performance by 10% to 18% according to SPEC benchmarks. The new compilers include C, C++, Fortran, Pascal and Modula-2 products. Sun also debuted Open Look versions of its Sparccompilers software development tools, now called Sparcworks, and NSE, a workgroup development product.

Unix software distributor UniPress Software is going into the hardware business reselling Sony's MIPS-based News 3250 portables running SVR4 and other News workstations. UniPress is the exclusive distributor of FrameMaker on the News platform. The move also ties in with other software UniPress has for the Sony boxes including the Emacs family of programming editors, X.desktop session manager and the eXclaim! X-Window spreadsheet. UniPress expects to go after the financial community.

We've sharpened our pencils, done a little basic arithmetic and figured out that AT&T must have sold around 20.4% of Unix System Labs in its initial launch (UX No 328). AT&T Data Systems Group president Bob Kavner said the holdings of the eleven companies that bought in, represent an even split between the US and European firms on the one hand and the PacRim concerns on the other. Although not all the new investors were willing to disclose how much they took, we know the Pacific Rim shareholders total 10.2%. Despite Kavner's accountant's background, we understand he didn't speak with exact precision when he said "even split", but at least we know the ballpark. 20.4%, quite short of the 30% AT&T were looking to unload, would have fetched \$66.3m.

Insignia has signed a long-term pact with Sun to provide PC emulation technology for Sun's Sparc workstations: Insignia is calling the deal a technology exchange. The pair will pool their areas of expertise to produce a first-rate DOS emulation product. Vicom and Sun have expanded the licensing agreement they signed last October: Vicom will now integrate the SunVision visualisation software package and Sun's multiprocessor MVX visualisation accelerator into Vicom's Master Image Data Server to transparently accelerate imaging applications running on Sun boxes.

The Open Software Foundation's Distributed Management Environment initiative went into its laboratory evaluation phase last week: OSF technical experts will scrutinise the technologies submitted (UX No 326) with a view to making a final choice towards the end of the summer. Meanwhile the ANDF technology chosen could be revealed soon, once negotiations with the suppliers have been finalised.

In a reported economy move because of the recession, Visix Software has closed its West Coast and Boulder, Colorado offices, centralising all activities at headquarters in Virginia, and redirecting sales efforts away from end-user sales.

Japan's Oki Electric, active in Unix since 1980 and currently struggling to bring an i860-based workstation to market (UX Nos 302, 325), has joined X/Open as a corporate member: Oki is already a member of Unix International.

Hetra Computer and Communication Industries in Sebastian, Florida, has brought out a Tempest version of IBM's RS/6000 at prices ranging from \$30,000 to \$35,000.

Needless to say, Sun Microsystems Inc's Scott McNealy doesn't think much of Compaq Computer Corp's pretensions to become a major player in workstations and he doesn't mince words: "Compaq doesn't do computers," he says dismissively, "they do handles and sheet metal".

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau. (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

UNIN

29 APR 1991

The weekly information newsletter for the UNIX ® community worldwide

London, April 29-May 3 1991

Number 331

UNIX INTERNATIONAL "SUES FOR SYSTEMS MANAGEMENT PEACE"

Unix International is to send out peace feelers soon to its rivals over at the Open Software Foundation in an attempt to reach some sort of mutual accommodation on the issue of systems management. The overture would be the first thaw in the consortia's glacial relations since the so-called "Unity Talks" failed over a year ago, (UX No 278). UI wants OSF to agree to a standard system management framework. It will propose that OSF upgrades the basis of its current system management search, its Distributed Management Environment (DME) Request For Technology, to include object-oriented technology, an all-important feature UI says went totally missing from OSF's original DME specification. Sources say the time may be ripe for a rapprochement of this kind. OSF has recently reappraised the scope of its DME RFT, (UX No 327), and reportedly overturned the old strictly networking premise on which it was based in favour of a new emphasis on object orientation. The one existing DME submission that incorporates that object management bent comes from Texas start-up Tivoli Systems which - fortuitously enough - is a linchpin in UI's own contemplated system management approach. UI, Unix Systems Laboratories, Tivoli and several other UI members are believed to be on the brink of a system management announcement that will be made public once it wends its way through the UI Steering Committee and contractual terms are agreed. UI is giving much credence to object management out of the strongly held belief that it will form the battlefield for the next generation of applications. In this all-important contest it sees the competitors as Microsoft, HP/Sun and perhaps IBM through its Patriot Partners venture - not OSF. For this reason UI made a formal alliance with the Object Management Group last week, pledging to cooperate on a single common framework for object technology and promising to include key components of OMG's specifications as part of its Roadmap. The horse UI is obviously backing here is the HP/Sun pony whose joint submission, (UX No 323), to the OMG's search for an Object Request Broker is making good strides in the race to be selected (UX No 330).

ADDAMAX CHALLENGES OSF's "DEAL OR DIE POWER"

WITH \$100m FEDERAL LAWSUIT

The other shoe dropped last Tuesday as Addamax launched a massive antitrust action against the Open Software Foundation naming as well Hewlett-Packard and Digital Equipment Corporation, two of its high-profile founders. The suit, filed in federal court in Massachusetts, follows on the heels of an investigation into OSF begun several months ago by the US Federal Trade Commission focusing on alleged antitrust violations stemming from OSF's vaunted Request For Technology scheme for acquiring technology, (UX No 317). All current indications are that the FTC investigation has broadened of late. Addamax is the privately-held five year old Illinois-based software vendor whose trusted systems technology was snubbed by OSF in favour of SecureWare when it selected a security system for OSF/1 in 1989. It has charged OSF, DEC and HP with violations of the US Sherman and Clayton Antitrust Acts, the Massachusetts Antitrust Act, the Massachusetts Unfair Trade Practices Act and Massachusetts common law. It is seeking a permanent injunction against OSF, its seven corporate sponsors or in fact any company from ever marketing any OSF trusted system product. Such an injunction, if granted, could effect the Open Desktop software SCO is putting together for the ACE initiative since it is based largely on DEC's version of OSF/1, (UX No 329). Addamax is also asking the court for punitive treble damages, which the suit itself leaves unspecified but which Addamax president Peter Alsberg estimates could exceed \$100m, based on the size of the market and the pricing that existed at the time he claims he was damaged. The complaint alleges that OSF and its corporate sponsors have acted as an illegal cartel by conspiring to fix prices for software technology, setting price ceilings in certain markets, and providing competitive advantage to OSF's sponsors by dictating standards favourable to their technologies and strategies. Addamax says it named HP and DEC rather than any of the other OSF founders "because we believe they were particularly visible in directing OSF's illegal activity". The case specifically addresses OSF's acquisition via its RFTs of fully paid-up royalty-free perpetual licences to third-party software at prices Addamax contends are below fair market value and even well below the cost of developing the technology. The complaint charges that OSF illegally acquired SecureWare's trusted system technology, bundled it into OSF/1 - effectively an illegal tying arrangement such as has brought IBM to grief in the past - and contrary to industry practice sold it at a single all-inclusive price. "Since OSF/1 includes security at no extra cost there is no incentive for an OSF/1 user to buy a competitive security product even if it is superior", Alsberg claimed. "That can totally destroy a market for a small independent software vendor like Addamax and even the threat of it gives OSF deal or die power". Addamax claims that since OSF represents 70% of the worldwide market, it has restrained trade and substantially lessened competition. As proof of the pudding, Addamax says that the instant OSF opted to go with SecureWare the order stream for Addamax's own B1 secure product, whose clients were largely OSF sponsors and members, completely dried up. In fact, Convex Computer, an OSF member, breached a contract with Addamax and refused to use its product because of OSF's stance, it says. As a result the company suffered a severe revenue loss. It was forced to close its federal office in Rockville, Maryland, and reduce its eighty-man staff to a skeleton crew of fifteen within six months of OSF's decision. Addamax is believed to have filed its suit, which has been expected for some time, in Massachusetts because Massachusetts law is favourable to such an action. In addition, it avoids any attempts by the defendants to seek a change of venue and forestall proceedings since both OSF and DEC are headquartered in Massachusetts. More details on page three.

UNIX INTERNATIONAL READIES

"ATLAS" REPLY TO OSF's DCE

A year after the gauntlet was flung down, Unix International is finally proposing to meet the serious competitive challenge posed by the OSF's Distributed Computing Environment (DCE) with a technical superstructure it thinks is larger and more embracing than DCE, (UX No 328). Reportedly the superset will only use technologies that are either already in the market or an advanced state of development to spur time to market - despite its implicit lateness and despite a planned two to three year rollout. UI has been working on its DCE rebuttal since last September and the companies largely responsible for the forthcoming specification include ICL, Unix System Labs, Sun, Unisys and NCR. Tentatively dubbed UI-Atlas, it is said to address issues unmet by DCE such as distributed transaction processing, the upper levels of OSI and object management; and on a nuts and bolts level, file services, remote job execution and a common data/file/document format. However, it will apparently not attempt to unseat DCE technologies but somehow embrace them, presumably out of a realisation that DCE, whether or not it deserves it, has inspired a considerable following among the end-user set and hence among the vendor community including many of UI's own members. Key system services technologies, more or less comparable to DCE's offering will be Network File System for the distributed file system, an ISO-Remote Procedure Call mechanism for client/server computing, ECMA-backed naming services, National Bureau of Standards time services and HP/Sun object management technology. The scheme also includes Tuxedo for transaction services and Tivoli - at least conceptually - for system management. How or who integrates all of these disparate entities into a whole that achieves UI's goal of transparent access to heterogeneous environments is a notion the UI camp has yet to address. It is at the very least a pricey undertaking - not to say difficult. OSF for instance is believed to be spending \$15m with IBM having the DCE components integrated, and despite the expense the results are still dicey, according to sources who have looked at the code and the documentation recently. To distinguish itself from DCE, which is using a DEC naming service that imposes a single naming syntax on the network, UI is endorsing a "federated" model that allows composite names consisting of components from several naming models. More details on back page.

IBM MAKES IT CLEAR THAT THE AS/400 WILL GET ALL IT NEEDS TO FIGHT OFF THE RS/6000

The industry has been commenting for some while that IBM has a mid-range crisis on its hands with both the RS/6000 and the AS/400 to market and if confirmation were needed that the crisis exists it came last Tuesday with the launch of six new high-end AS/400 models. IBM's solution? Shaft the RS/6000 salesman in the commercial sector - where it hurts. The tone for the launch was set by IBM UK General Manager Nick Temple who commented that the RS/6000 had "done exceedingly well", but in the next breath this was qualified by the statement that "the AS/400 is the most popular mid-range system in the industry". Although unclear whether this was a statement of fact or of direction, IBM undoubtedly means business with the AS/400 by extending the range up to the new 9406 D80 and by offering System 36 users a lower entry cost point into the AS/400 architecture with the 9402 models. However, there was no question who was the spectre at the feast, the ghostly presence of Unix was omnipresent. As Colin Boag, ABS Manager, put it "open doesn't mean Unix" and "proprietary is not bad". IBM is valiantly attempting to reverse the marketing success that Unix has staged by associating the adjective "proprietary" with negative images. Thus Boag explained that proprietary means added value, and with new connectivity options, it doesn't have to be synonymous with a closed architecture either. For example, the AS/400 works with other Systems Application Architecture machines, and can connect to Unix via TCP/IP - furthermore, the new version of OS/400 can fully participate in Open Systems Interconnection, said IBM with a straight face, because it can use OSI standards such as X25 and FTAM. And fie all those that think a proprietary system is closed because people do not have access to the source code, why IBM is offering access to the high-machine level licensed internal code to certain customers and business partners so that they can tune the system. Boag added nervously that this access would be controlled by IBM and that it must be consistent with AS/400 development plans. In terms of price-performance the AS/400 is now in a league with competitive offerings from Digital Equipment Corp and Hewlett-Packard Co - coming as it does complete with built-in relational database. The message clearly is that while other proprietary mid-range systems may be dying, the AS/400 is here to stay, alongside its pal Unix.

HEWLETT-PACKARD ENHANCES ITS OEM OPTICAL DISK OFFERINGS

Hewlett-Packard Co has developed its own multi-function - erasable and write once - optical disk drive and will be offering it OEM. The mechanism is based in part on technology acquired from Optotech Inc, Colorado Springs, Colorado in November 1989. The Model C1716C improves on the company's current multi-function optical mechanisms with an access time of 43mS and a transfer rate of 1Mbyte-per-second for reads and 500Kbyte-per-second for writes. The embedded SCSI controller also improves drive performance through read and write caching, and the drive fits the standard 5.25" form factor. The two-sided platters store 650Mb in total and the write-once format used is based on the established ANSI/ISO standard for the rewritable continuous-composite, magneto-optical format. No indication of price or delivery. The company has also come out with smaller optical disk libraries using 5.25" platters, which are aimed at applications such as departmental archival storage and unattended back-up, particularly over networks. The new ones are the Model 10, with one drive and 16 disks for 10.4Gb on-line at an OEM price of \$15,000; the Model 60, two or four drives, 88 disks and 57.2Gb capacity at \$28,000; and the Model 100, with two or four drives, 144 platters for 93.6Gb of on-line storage, which costs \$63,800 when ordered in OEM quantities.

NEC CORP SURPRISED BY DEGREE OF INTEREST IN THE STRATUS FAULT-TOLERANT UNIX MACHINE

NEC Corp has announced the first fruits of its 10-year OEM agreement with Stratus Computer Inc, launching the Stratus 80860-based XA/R Model 20 fault-tolerant Unix machine as the NEC Super-Tolerant FT20. The price of the system has been set at the equivalent of \$57,800 for a basic configuration with two CPUs, twin 32Mb main memories, cartridge tape and C&C-NET BranchCard II Local Area Network system and Stratus' fault-tolerant implementation of Unix System V.4 with Japanese functions added. NEC says it is targeting the machine at the transaction processing market in the financial and distribution industries and in intelligent communications, linked to its digital telephone exchanges. NEC says it expects to sell 600 of the things over the next three years, up from its initial forecast when the announcement was made last September, of 500 units - because of greater than expected interest from customers, according to Akira Kobayashi, executive vice-president and director. And 20% of the sales are expected to come from overseas, mainly in conjunction with PABX and public telephone exchange sales, but no special arrangement has been made with Stratus about non-competition and some is expected. First shipment is expected in November 1991. Aside from sales as database machines for use with exchanges, the balance of sales are expected from systems linked in with its Acos mainframes - but NEC was quick to point out that while competitor Fujitsu's home-developed fault-tolerant machine was merely a front-end when used with a mainframe, the FT20 runs a full Unix operating system with additional Japanese language functions and can run any normal Unix applications such as Oracle Corp's database. Hardware maintenance for the machine will be undertaken by the NEC Field Service subsidiary. According to NEC, Nippon Stratus is currently not planning to release the FT20 in Japan and is instead sticking to the XA2000 computer running the VOS operating system. NEC emphatically denied suggestions at the press conference that it would want to begin making its own fault-tolerant computer - Kobayashi pointed out that it was no longer the age when companies had to make everything themselves. They also denied that a comparison of the costs of importing a completed product and developing and manufacturing a proprietary product had been weighed; the Stratus deal was an opportunity to take on leading-edge technology, he said. NEC hopes to have 20% of the fault-tolerant market, which it forecasts at \$1,000m, by 1993.

TERADATA MOVES TO 33MHz 80486 WITH NEW DBC/1012 MODEL 4

Teradata Corp, El Segundo, California last week moved its DBC/1012 database processor up to the 80486 chip with launch of the Model 4, the fourth generation of the machine. Claimed to be the most powerful parallel processing computer ever built for business applications, the box comes with new 2.5Gb disk drives, enabling it to manage relational databases up to 10Tb in size. It is claimed to offer three times the power of the 80386-based model for approximately 1.3 times the cost. The scalable system can be configured with as few as six to more than 1,000 CPUs, and uses the 33MHz version of the part, each with 256Kb of cache and 8Mb main memory. The DBC/1012 Model 4 features new Access Module and Communication Processors, a new disk controller, optional non-volatile disk caching, a new Application Specific Integrated Circuit YNET for message-passing logic, the new disk drive, and a new DBC manager performance monitor. The Model 4 comes standard with a Communications Processor and a DBC Manager workstation that is designed to simplify system monitoring and capacity planning for the database administration staff. The Communications Processor connects workstations directly to the DBC/1012 through an Ethernet. The Model 4 runs under a new release of Teradata's relational database management system, Release 4.1.2, which is designed to enhance support for the transaction processing environment, add data centre operations features and performance enhancements and provide for more real-time continuous operation. Also available is Teradata's new high-speed, high-volume, database update utility. Teradata offers current DBC/1012 customers a field upgrade to the Model 4 and pricing starts at \$816,000 for a minimum configuration; out now.

SOFTWARE IRELAND UNIBOL 4 TO LIBERATE SYSTEM 36 USERS

For System 36 users that have thoroughly researched the move to the AS/400 and decided they want nothing to do with it, Software Ireland Ltd is offering the freedom of a jump to open systems with its Unibol product, which provides a System 36-compatible development and execution environment under Unix, and has just launched Release 4.0 of the product. The new release adds support for SSP 6.0 Call/Parm, so that RPG II programs can call other RPG II programs. It also includes initial versions of Unibol RPG400 and Unibol Cobol. And a new shared data facility means that Unix applications can open, close, create and update new Unibol data files; and read, write and update records. A library of C functions can be called by RPG II; no price.

TEKTRONIX FIRST WITH PEX TERM

Tektronix has introduced the industry's first PEX terminal, the TekXpress XP29P, designed for developing distributed 2D and 3D applications. It is based on the MIT X Consortium's initial PEX5R1 release and supports version 5 of the PEX protocol. Enhancements reportedly extend the sample MIT implementation with improved lighting, shading and colour capabilities. The company believes the widgets will be attractive to independent software vendors building graphics software development libraries, vendors peddling high-end servers and researchers developing distributed graphics applications. The unit's multiprocessor architecture uses both a 68030 and a TI 34020 graphics co-processor and 34082 floating point processor. It comes standard with 7MB of memory expandable to 39MB, 128KB ROM, IBM 101-key or VT200 keyboard and a mouse. Prices start at \$7,000. It is compatible with DEC windows, Motif, Open Look and X View. A 17" monochrome screen is also available as is a 1280 x 1024 19" Panasonic monitor and several others.

STANDARD PLATFORMS GETS COMMISSION TO DO ICL DRS6000 VERSION OF KIT

Standard Platforms Holdings Plc, the Blackburn, Lancashire start-up that went public simultaneously in the UK and the US late last year, has reported a couple of significant contracts. The Colonial Mutual Life Assurance Society has signed the company to implement its Datasafe optical file server to the ICL DRS6000 as it moves from three ICL Series 39 Level 80 mainframes to a networked, Unix-based transaction processing system, and will retain a financial interest in the DRS6000 version, which will replace an existing microfilm system. The software will also be supported by the Society's Ingres relational database. And Nuneaton, Warwickshire-based Carryfast has just ordered the Datasafe document image processing system for its new Trackpack proof of delivery service: the optical server will run off the company's ICL DRS6000 Sparc-based RISC Unix system to provide on-line interrogation of imaged documents. The new system includes a write-once optical jukebox, which puts 16Gb on-line at any time, using an array of 20 5.25" platters.

HETRA HAS TEMPESTED IBM RS/6000s

While scores of companies are hoping to make money by writing or converting applications for IBM Corp's RS/6000 Unix family, Hetra Computer & Communication Industries Inc in Sebastian, Florida reckons that many of the things will find their way into sensitive applications, and has brought out a version of the RS/6000 with Tempest radiation shielding, at prices ranging from \$30,000 to \$35,000.

OSF TRIED "TO MUSCLE ADDAMAX OUT OF TRUSTED UNIX MARKET"

The \$100m lawsuit filed last week against the Open Software Foundation claims specifically that the consortium and its sponsors have intentionally tried to drive Addamax from the trusted Unix market by bundling B1 security products, since they aligned themselves with SecureWare. The picture of the OSF Request For Technology mechanism that the suit paints is a far cry from the technologically pure process it is supposed to be. The suit maintains that the independent consultants OSF hired to evaluate the competing Addamax/SecureWare RFT submissions told Addamax that their preliminary assessment favoured Addamax over SecureWare. This evaluation, the suit alleges, caused Hewlett-Packard to despatch Larry Dwyer, a senior HP executive, to OSF to take a principal role in OSF's selection process, an action that itself contravenes the hands-off policy OSF supposedly applies to its founders. HP had already licensed SecureWare's technology to incorporate it into HP-UX as an unbundled add-on and adapted the operating system to accommodate it. Dwyer was a principal in the HP acquisition and because the company had a prior financial commitment to the SecureWare technology, and stood to gain a market advantage by a SecureWare win, the suit charges, Dwyer saw to it that OSF selected SecureWare for OSF/1 - despite the technical superiority of Addamax. In negotiating with OSF, Addamax, which demanded a royalty stream for its technology, was allegedly advised that it either had to deal with OSF and accept a pittance in return, or face the destruction of its market and ultimately be forced out of business. On several occasions, the suit says, OSF representatives noted to Addamax that whoever OSF selected, the other company would be put out of business. Addamax claims that its RFT submission addressed every "mandatory" and "additional" criteria OSF set. Addamax also allegedly asked for a licence fee and royalty schedule lower than that bid by SecureWare. However, OSF, without formally amending the RFT, changed the priority of its selection criteria to emphasise Compartmented Mode Workstation (CMW) technology, one allegedly important to HP, above all other requirements. Previously, OSF had merely designated CMW as a "desirable" but not "mandatory" element of the submission. When Addamax learned from OSF that CMW technology had become a priority, it sought OSF's permission to build its own CMW technology. OSF advised Addamax not to submit a bid and it lost the RFT. Addamax maintains that there is no justification for OSF to bundle B1 class security with OSF/1, a situation unique in the industry. Addamax has requested a jury trial.

DELL COMPUTER BRINGS IN 80486 MACHINE, TRIMS SOME PRICES

Dell Computer Corp has a new 80486-based system, the 443P, that uses Intel's 33MHz 80486 processor. Key features include 4Mb memory, a 40Mb hard disk, three full-length AT slots, up to 16Mb on the motherboard which has two RS232 serial ports, one parallel port and a mouse port. Dell is pitching the system for software development and as a network station. Prices start at £2,800 in the UK and it is available immediately. The company has also announced that its 33MHz 80486 upgrade board is reduced to £1,000, and it has also introduced price cuts on random access memory and hard disk offerings for all its 80486-based systems.

FLOURISHING ICL FINDS THAT THE FUJITSU CONNECTION BUILDS CONFIDENCE IN THE RECESSION

ICL Plc, poised to jump on the 80486SX bandwagon later this year and with a self-designed laptop up its corporate sleeve, has been briefing the press on what it sees to be its major achievements in 1990, and outlining the company strategy for the coming year.

Surprising as it may seem, for a company recognised largely for its mainframes, 50% of ICL UK's total 1990 revenues were derived from software and services, and less than 30% of sales figures were contributed by mainframe hardware. Linda Francis, ICL's Unix Systems Business Manager, was the first to translate her percentages into sterling, boasting that Unix system sales accounted for £80m of UK revenues which, she was quick to point out, was four times the value of Bull SA's 1990 Unix business. A quarter of Unix shipments were made through ICL's value-added reseller channels, and in the UK, ICL claims an installed base of 3,000 Unix systems. Sales of the DRS6000, said Ms Francis, exceeded all expectations, with over 1,500 worldwide shipments - the £9m contract with the Ministry of Social Security being among the company's recent coups. The DRS3000, she went on, has been having early success: recent contracts signed include hospitals in Greece. ICL claims to have taken 20% of the mid-range market - machines in the \$15,000 to \$500,000 bracket - in 1990, according to Inteco figures, compared with just 4% stake of the market in 1989. The company has deduced that it is growing at twice the market rate and therefore gaining substantial share from its competitors. Reasons for the market's confidence in ICL are undoubtedly caught up with the company's new-found long-term financial security from Fujitsu's majority holding. ICL's Unix strategy for 1991 includes rationalising towards two base architectures - Sparc RISC and Intel iAPX-86, and conformance to Posix and X/Open. DRS6000 system developments will focus on the upper end of the market - the two-processor Level 65 model is due out this month and further versions will ship later in the year, in conjunction with memory, disk and back-up facility enhancements. DRS3000 enhancements will be in the realm of disk capacity, as well as communications, and new models at the top end of the range are scheduled for the second half. Peter Slavid, the newly-appointed business manager for VME mainframes, reported that £60m orders were received in 1990 for the new SX (Essex) system, and small SX models are planned for the current year. "Major developments" in systems software are also scheduled, mainly in taking VME into the open systems world. According to John Arnell, UK business manager for personal computers, recent International Data Corp forecasts are that the market for 80386 machines is being squeezed out - so that's why ICL doesn't have one. And Arnell claims that ICL currently has the "leading 80486 box in the UK" - no dates were given for the release of ICL's 80486SX offering. Something that ICL has kept very quiet is that it has been assembling some of its personal computers in the UK for some time now - by the end of 1991, says Arnell, 50% of ICL's manufacturing will be UK-based. Further details were not disclosed, but ICL is planning to make an announcement in six weeks' time. Of the planned laptop, he says that the company wants "a clear ICL product" - ICL badged the Zenith products for a while, but the company now wants its own product - to be built externally at first, with the eventual intention to take production in-house. Some 60% of ICL's business is currently generated in the UK - the plan is to reduce this percentage to 50% - the balance is split 50/50 between continental Europe and the rest of the world - figures on which ICL was unequipped to elaborate. In 1989, ICL shipped £130m-worth of workstations and personal computers abroad.

EUROPEAN SOFTWARE COPYRIGHT LEGISLATION GETS COOL RECEPTION FROM COMPUTER USERS GROUP

The European Parliament's draft directive on software copyright protection, passed last week, threatens to stymie the development of the open systems marketplace and open systems products, according to Rob Briggs, chairman of the Computer Users of Europe group. After intense lobbying by the likes of IBM, DEC and Microsoft from the Software Action Group, a raft of amendments to the directive - which must now be applied by all European Community member states by day one of the single market on January 1 1993 - was defeated. The directive is a common position thrashed out last December after nearly two years of negotiations and lobbying, and is likely to clash with the British government's own software copyright act passed in 1988, which includes a clause providing for the fair use of software, including decompilation for maintenance, by users. The defeated amendments included rights championed by CUE, such as the ability to maintain software beyond the level of simple error correction - doing in-house or third-party customisation - removing copyright claims on interface technology and the right to decompile software to examine methods and techniques, which could then be used to create competitive open systems products. Briggs fears that large vendors may use the directive to hang on to proprietary systems and resist the growth of open systems, creating new monopoly markets in software and maintenance. "If IBM, DEC and others are so committed to open systems, why did they put so much effort into the lobbying?" he asks.

OLIVETTI OFFICE'S NEW PRO PC LINE IS AIMED AT THE CORPORATE DESKTOP

Milton Keynes-based Olivetti Office UK has launched a range of high-end personal computers for the corporate market. Dubbed PC Pro, the family includes an 80286 model clocked at 16MHz, an 80386SX machine, an 80386 running at 33MHz and an 80486 at 33MHz. All but the 80286 are available as mini towers and can be used as file servers. The machines have been positioned to compete with similar offerings from manufacturers such as Tandon Corp and product marketing manager Dominic Macey says he expects to capture 10% market share. The dealer programme involves Olivetti in running work shops and courses in sales, marketing and technical knowledge to immerse distributors and dealers in all aspects of the range. Demonstration models offered to dealers will arrive complete with Novell Inc's NetWare or Santa Cruz Operation Inc Unix operating system. Although the machines are OS/2 and LAN Manager-compatible, Olivetti is marketing the range within the Santa Cruz Unix and NetWare environments. Prices for the range start from £1,200 for the 80286, to £5,500 for an 80486 box.

NCR BEGINS MARKETING OF ITS DOCUMENT MANAGEMENT SYSTEM

NCR Corp has begun marketing its image-based Document Management System, described as a general purpose imaging system based on microprocessor technology and open, scalable systems. Designed to enable organisations to convert paper documents to electronic form and cost-effectively manage storage, movement and processing of documents, it is pitched at claims processing, patient record-keeping, credit card application processing, personnel record-keeping, patent processing and order entry. As well as printed and type-written fonts, the character recognition software can handle hand-printed numeric characters, and NCR plans to add interpretation of machine-printed alphanumeric and handwritten numeric characters, enabling customers to automate manual data entry tasks such as document indexing. The Workflow Manager enables organisations to depict the document work flow associated with a given environment graphically and thus identify and eliminate bottlenecks and optimise system performance. System services such as facsimile, printing, scanning, character recognition, relational database operations and communications can be allocated to servers in NCR's Unix System 3000 client-server architecture, to configure a total image system; no price.

SOLBOURNE ADDS NEW US, EUROPEAN DISTRIBUTORS

Solbourne has added two new European distributors, Delphi SpA in Italy and BMW subsidiary Kontron Elektronik GmbH in Germany, which have both signed three year pacts. The first is worth \$40m, the latter \$30m. Solbourne has also appointed P&P Micro Distributors Ltd, Rossendale, Lancashire, as its UK master distributor. The Sparc cloner now has twelve resellers in Europe and their total business volume is projected to be worth \$15m over the next three years. And in the US, Solbourne has signed an exclusive distributor deal with CAL-ABCO, described as the third largest US hardware distributor, with forty offices worldwide. CAL-ABCO, new to Unix, is putting a special division in to support the gear which it will market to networking VARs, imaging-based DBMS VARs and traditional vertical markets. ABCO, which has been big in mass storage, memory and optical storage products, has a customer base of 13,000 VARs and systems integrators.

SPARC ADD-IN BOARD FOR PCs RUNS UNIX AND DOS TOGETHER

Opus Systems is going after the ocean of personal computers out there, with a Sparc add-in board that will let them run SunOs and DOS applications simultaneously. The board takes up a single AT slot and is supposedly 100% compatible with the Sparc Compliance Definition 1.0, supports SBus peripherals and SunView on standard PC monitors and operates in a Windows 3.0 environment. Available immediately, pricing starts at a hefty \$6,500. And Opus has gained \$3.7m in venture capital financing from Glenwood Management, OSCCO Ventures and Merrill Pickard Anderson Eyre, to fuel expansion.

HEWLETT MAINFRAME TO USE GALLIUM ARSENIDE CHIP TECHNOLOGY

Hewlett-Packard is reported to be implementing gallium arsenide RISC technology in its eight-processor mainframe due out around this time next year. It's being developed in conjunction with Hitachi and is reckoned to be five times the speed of current HP machines.

DATA GENERAL'S UNIX WILL MAKE 30% OF REVENUES THIS YEAR

Data General's vice president of open systems marketing, William Zastrow, says 75% of the firm's Unix business now comes from sales of server versions of its Motorola 88000-based AViiON range. Its open systems products accounted for roughly 10% of the Westborough, Massachusetts-based firm's total revenue's last year - Zastrow reckons that figure will be up to 30% this year. As far as Motorola's forthcoming next-generation 88110 iteration of the 88000 chip family goes, Zastrow says Data General is not expecting sample deliveries until the summer. The firm is still considering the commercial feasibility of doing an eight-processor implementation of its recently launched quad-processor, (UX No 325).

ICL PICKS UP DUTCH CASE TOOL

ICL has gone to Dutch firm Westmount Technology, Delft, for its Information Systems Engineering Environment CASE tool, that it will market on its DRS6000 and DRS3000 Unix systems. ISEE supports Ingres - ICL's preferred database offering under Unix - as well as Informix, Sybase and Unify.

MAXTOR LOSES NeXT DISK DRIVE CONTRACT TO SEAGATE

Maxtor Corp has lost its contract to supply NeXT Inc with 400Mb disk drives to competitor, Seagate Technology Corp: Seagate is to supply an unspecified number of ST1480N 3.5" disk drives for NeXTstation and NeXTcube desktop systems; the Seagate ST1480 provides 426Mb of storage with a 14mS average seek time, data transfer rates up to 25Mbits per second, and supposed mean-time-between failure rate of 150,000 hours; it is available with either a SCSI-2 or AT interface, and the price per unit is \$1,950, although neither company is disclosing the price NeXT will pay; NeXT Inc expects between 25% and 35% of its computers to contain Seagate drives; Maxtor Corp is said to have experienced difficulties producing the new 3.5" form factor.

SCO REORGANISES AS SALES REVENUES APPROACH \$150M

Santa Cruz Operation Inc, Santa Cruz, California has reorganised operations at a time when, it says, it is poised to move past \$150m in annual sales in 1991: it has appointed Bernard Hulme vice-president of worldwide marketing, Michael Tilson as vice-president of SCO Services, and Scott McGregor as vice-president for product strategy; it has also formed new North American and Pacific Rim/Asia/Latin America business units to direct all sales and marketing activity in their designated territories, and says they are modelled on the success of its Europe/Middle East/Africa unit, SCO Ltd in Watford, UK.

MORE RISC-BASED X-TERMINALS ON THE WAY, SAYS IDC

International Data Corp has responded to Hewlett-Packard Co's new HP 700/RX family of 80960 RISC-based X terminals, saying that Hewlett-Packard can be assured that its competitors are sitting up and taking notice of the new price-performance standards it has set. IDC says they will be the first of many expected RISC announcements in 1991, and comments that the all-encompassing family (as opposed to one or two models) is definitely reflective of the HP's commitment and seriousness regarding the X terminal market. IDC calculates that in 1990 HP succeeded in becoming the dominant worldwide supplier of colour X terminals with a 27.6% share of the worldwide colour market, and sees the new models keeping it at number one.

HP MAKES MOVES IN EASTERN EUROPE

Hewlett-Packard Co has established a Budapest-based joint venture for sales and support with Controll, a private Hungarian firm that has been an one of its authorised dealers for personal computers and peripherals since 1989: employees from Controll and Hewlett's sales office in Budapest will move to the new organisation. The Palo Alto company also announced it has established a sales and support subsidiary in Czechoslovakia, with offices in Prague and Bratislava. Its initial staff of 50 comprises representatives from its local sales office and technicians from Czechoslovakian firms which have provided service and support for its products since the company began doing business in the country way back in 1971.

EMULEX HAS LOW-END TERMINAL SERVER

Emulex Corp, Costa Mesa, California, has launched a low-end terminal server, available in four or eight-port configurations. The Performance 2500 supports TCP/IP and DEC's Local Area Transport protocol and is targeted at personal computer-based systems running Interactive or SCO Unix. Out next month, prices go from \$1,850 to \$2,000.

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UI's DCE TO USE AT LEAST A PART OF NCS

Unix International is biting off a big piece of interoperability, larger than OSF has undertaken, including DCE, personal computers, MVS, System Application Architecture, DEC NAS and OSI levels 4-7. It draws the line however at terminal emulation or SNA emulation code or at promising transparent access to all services in alien environments. But it will claim that any application under DCE will run on its platform and will use at least part of Network Computing System. It will also claim forward compatibility and support with the existing base. To remain as flexible as possible, UI will also be back a system of Application Programming Interfaces, including those already published. It rejects recommending providing OSF's Andrew File System with Unix SVR4 as too early, though AFS may be bundled in the future. MIT's Kerberos is specified for authentication. If it passes all legal obstacles, the UI Distributed Computing Architecture will probably be called UI-Atlas, a reference that will also include UI's notion of Corporate Hub and Desktop Computing. It reckons that its scheme is viable for a minimum of ten years.

Making it clear that AT&T Co's acquisition of NCR Corp is all over bar the fine print negotiations, NCR chairman Charles Exley has written to AT&T chairman Robert Allen proposing that NCR shareholders be guaranteed an exchange worth \$110 a share - and no more than \$110 - provided that AT&T shares stay at or above the \$32.50 that was the average closing price from December 3, 1990, the day it announced its \$90 offer, through April 19, the day NCR received its Outline of Proposal for a share swap. AT&T is reported to have spent in the region of \$12m courting the Daytoner thus far.

The expected release date for Sun Microsystems' Galaxy - single and multi-processor systems built Texas Instruments' BiCMOS Sparc part - has slipped to the autumn.

NCube is said to be readying a massively parallel system with 128 processors that weighs only 60lbs: with 512Mb, and a throughput of 2.2 MFLOPS per processor, it's being targeted for use aboard submarines and aircraft - and as a desk-side unit - prices go from \$500,000 to \$1,000,000.

Despite the problems it has been having with its hardware development, (UX No 327), Stardent Computer Inc is having more luck with its software, having won agreements from Sun Microsystems Inc, IBM and Cray Research Inc, to port Stardent's graphical Application Visualisation System to their respective Sparcstation, RS/6000, X-MP and Y-MP hardware platforms. Stardent will then market AVS directly to these customers from the next quarter.

TeleSoft AB of San Diego, California, has had its Telegen2 Ada compiler selected for the \$164m Information System Workstation Segment Project by prime contractor Bull HN; TeleSoft expects to deliver a between 1,000 and 16,000 TeleGen2 Ada Development Systems for Apple Computer Inc Macintosh IIX computers running under the A/UX Unix.

Chiswick, London-based Triumph Technology has signed up to distribute Swiss firm Intunix's Usearch text retrieval system in the UK and Ireland: Usearch is based upon Fulcrum Technologies Inc's Ful/Text system.

Mitek Systems Inc, San Diego, California, is to design, certify, manufacture, configure and sell tempest versions of Sun Microsystem Inc Sparc desk-side workstations: Sun will continue to manufacture and distribute its tempest desktop systems.

And Hughes Data Systems, an offshoot of Hughes Aircraft, is developing Tempest versions of some of Hewlett-Packard's 9000 Series 700 workstations, starting with model 720.

The Santa Cruz Operation has picked up Computer 2000 as a German distributor.

News reaches us that Barclays Bank's planned move to open systems with a whopping order for up to 3,000 IBM RS/6000 machines, (UX No 323), has been "signed, sealed and delivered:" the same source said that IBM knocked out a DEC VAX/VMS solution that had been a previous front-runner for the UK high-street bank's initiative.

A month-old start-up in Taipei called Ether Technology is reportedly busily at work on a Sparc notebook, apparently aiming to give Tadpole, (UX No 328), a little competition.

Following our story on an embeddable version of Quintas Prolog, (UX No 326), Interface Computer GmbH, Munich, asks us to point out that it has been offering its IF/Prolog - fully embeddable within C - since 1988: latest port is to Hewlett-Packard's Series 700 Snake workstation, and source code compatible versions for VMS and MS-DOS are also available.

Developed by Gnome Computers Ltd, St Neots, Cambridgeshire, and Acorn Computers Ltd, Cambridge, !X server software is claimed to enable Acorn Archimedes computers to connect to networks of Unix workstations via TCP/IP and act as a colour X-terminal: !X costs £200, and supports any type of workstation running X11 code.

Hewlett-Packard is offering Sun, DEC, IBM and Apollo workstation users up to \$4,500 to trade in their old gear for a higher performance HP workstation or server.

Hard on the heels of the Snake launch Hewlett-Packard has released version 8.0 of its HP-UX Unix-like operating system for the new 700 workstations, as well as the existing 300, 400 and 800 systems: it supports Insignia Solution's SoftPC 3.0 MS-DOS emulation software.

Unix International's business plan for Desktop Unix, (UX Nos 300 & 328), targets fifty premier commercial applications available with the first product shipments early next year and 200 integrated graphical applications by the end of '92

To be considered successful, Unix International believes Desktop must yield volumes of 100,000 units between mid '92 and mid '93; 400,000 in the next 12-month period; and 1 million between mid must be made a comfortable environment for non-American speaking users, it says.

Unix International counts administration as Desktop Unix's single biggest hurdle. It also needs simple GUI-based productivity tools and Unix International is looking to USL to produce them rather than buy them.

It's hard to tell exactly what Unix System Laboratories has up its sleeve for its Desktop Unix metaphor: Unix International sources indicate it's negotiating or going to negotiate with Apple for the original Mac interface - or with Xerox PARC for the really original stuff - while a Unix System Laboratories insider claimed he's already seen a demo running some apparently home-grown Mac-like non-litigious software.

Thanks to some accountant's trick, it seems that all of the money made from selling a chunk of Unix System Labs -- over \$66m -- has landed with USL even though a goodly piece of it passed through AT&T and everybody though it was going to stay there: good thing too. USL probably needs that much to stitch together all the technology that needs to be integrated.

Hewlett-Packard is said to be readying two high-end PA RISC-based servers for the year-end dubbed Nova and Supernova.

Hewlett-Packard Corp has come under criticism from analysts Annex Research, which claims that HP inflated the competitive advantages of its Snake workstation by omission (sounds like normal marketing practice to us): HP, says Annex, did not show the most powerful workstations from IBM and DEC on its SPECmark chart, emphasising its own lead, and did not even show the MIPS Model 6280, then the second most powerful after IBM. And when measured in MegaFlops, HP's 730 comes second to the IBM RS/6000 Model 550, thus disproving HP's claim to "lead the industry - by any measure", says Annex.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau. (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

- 6 MAY 1991

The weekly information newsletter for the UNIX ® community worldwide

London, May 6-10 1991

Number 332

DEC ACES CONSORTIUM TEAM WITH NEW DECSTATIONS

DEC last week launched a new mid-range Unix workstation series it hopes will pave its way into high volume sales. The DECstation Series 5000 Models 120 and 125 use the MIPS Computer Systems Inc R3000A chip running at 20MHz and 25MHz respectively, and have a removable CPU daughter board which allows for easy up grades to faster processors. According to DEC, the 14 SPECmark systems have higher performance, memory and graphics options than the rival IPC Series from Sun Microsystems Inc, but are cheaper. They come with five different graphics options, including a new monochrome graphics controller, and support DEC's Ultrix 4.2 operating system, introduced last month. Entry-level prices stand at £4,400 for the Model 120, or £8,000 for a real system including 16Mb memory and CD ROM drive. As a result, the DECstation 3100 now becomes DEC's entry-level system, with the 2100 to be discontinued. DEC carefully called the machine compatible, as opposed to compliant, with the ACE Advanced Computing Environment specification, because ACE specifies the MIPS R4000 chip, DEC's Turbochannel bus and Unix version. But DEC can't claim full compliance until the specification has a little more meat on it, but reckons it will have company in the market from other ACE consortium members by year-end. US prices start at \$6,500 and they ship in June. There are also kits at from \$4,000 for DECstation 2100 and DECstation 3100 users to upgrade to 5000s.

OBJECT GROUP SAYS IT IS "NOT A STANDARDS ORGANISATION" ...

Following news of internal discussions at the Object Management Group, OMG, which found their way into the public domain last week, (UX No 331), it appears that the unholy trio of Microsoft Corp, DSET and Data Access Corp, are investigating the ISO's work on a Basic Reference Model for Open Distributed Processing as a point of conformance for the Object Request Broker. Chairman of the Group Chris Stone says he welcomes constructive criticism from all members and will not ignore any suggestions. However, in his opinion, the model for Open Distributed Processing has nothing to do with objects and as the OMG is already participating in the development of this distributed processing model, he can see no grounds for a suggested rift based around the pursuit of that model. Arguments within the OMG are centering around how object-oriented you need to be for distributed applications. In other words, to what extent applications need to be written from scratch and to what extent "wrappers" can be put around existing applications. However, arguing is part of any democratic process and Stone is confident that these issues will be resolved over time. The basic problem - aside from the inevitable politics that Requests for Technology nurture - appears to lie with a widespread misconception about the OMG's approach to defining object-oriented technology. As the Group's technical director Richard Soley explains: "first and foremost THE OMG IS NOT A STANDARDS ORGANISATION. Although we and our members participate in a number of standards efforts, and we have no better word for what we promulgate than "standards," what we really are doing is building corporate agreements on a wholesale basis, and hoping that those agreements will build enough consensus to initiate a broad market of interoperable software". As far as the technology goes, OMG is the first to admit that there are still issues that need to be addressed. In particular Soley agrees with Microsoft's view that the group needs some common notion of an object model if it is to achieve its goal of interoperability. "I heartily agree. It's a glaring lack, and one which we intend to remedy. It's a tough problem that just about every other organised group has chosen to ignore."

...AS APM WITHDRAWS, HYPERDESK AND DEC "MOOT JOINT SUBMISSION"

Meanwhile the only UK submission to the OMG's RFT for its Object Request Broker has been withdrawn. Cambridge-based Architecture Projects Management Ltd withdrew its ANSAware proposal because it says to win would detract from its ESPRIT-funded research. Moreover, parts of its technology are already in the submissions from both Hewlett-Packard/Sun and DEC. According to some insiders, the Hyperdesk technology looks like the best technical submission to the Request Broker RFT, however delegates at an OMG meeting in London last week were insisting that "no-one has a complete Object Request Broker." There is also speculation in some quarters that Hyperdesk may be about to connect with DEC - possibly Microsoft too - in a joint submission. If this were to happen it would effectively turn the contest a "two horse race." Either way APM would still get its glory as "whatever wins would in some way be ANSA-based," a spokesman confirmed. Speculation is that if the Hyperdesk-DEC tie-up materialises, the current front-runners, HP/Sun, would then be hard up against it to win. Sun and HP have already said that they will press ahead with a commercial implementation of their technology, whoever wins. The fact that both horses are carrying ANSA technology should leave some room for manoeuvre whatever the outcome, as it is likely that some degree of interoperability could be achieved between the two - interoperability which may even extend as far as the OSF's Distributed Computing Environment technology.

TAIWANESE MASS MARKET X-TERMINAL TEAM CHOOSES Am29000 RISC CHIP

Finally back in the CPU microprocessor race - unless its efforts are finally stymied in the courts, Advanced Micro Devices Inc has won a fillip for its Am29000 RISC from a consortium of Taiwanese companies dedicated to creating a mass market for X-Window System terminals by bringing prices down below \$1,000. The project, backed by 24 local firms, will be led by the state-backed Computer & Communications Laboratory, Electronic World News says. Key attraction of the Am29000 is that it needs no graphics chip. Industry-watchers have been awaiting just such a move from the Eastern marketplace manufacturers, to bring the price of X-terminals down to a level where they become an affordable solution and can make real in-roads into the mainstream markets. Indeed a wider interest in X-terminals is likely to get a kick-start this week with the expected news that a leading high-street bank and a major manufacturing company will announce large orders for X-terminal-based computer solutions.

CRAY SOUNDS OUT SUN, MIPS ON RISCs FOR ITS MASSIVELY PARALLEL EFFORT

The jury is still out on whether massively parallel computing will be a major wave of the future but the fear of getting left out is intense, and Cray Research Inc is having to play catch-up in mastering the technology. The company's current thinking is reportedly to use an array of RISC processors and it hopes to be able to buy them off the shelf. According to Electronic News, it has been inquiring of Sun Microsystems Inc and MIPS Computer Systems Inc what their future designs include in the hope that a next-generation microprocessor will be able to do what it wants. Otherwise it will settle for a combination of commodity RISCs and custom RISC parts to its own design.

IBM GOES BACK TO HEWLETT-PACKARD, THIS TIME FOR SOFTBENCH FRAMEWORK

The New World Order in the computer industry is characterised by the megacorporations that fight each other like Kilkenny cats in the market, getting cosily into bed with each other when one comes up with something that another wants - especially if both happen to be members of the same club, be it the Open Software Foundation, Unix International or the Network Management Forum. Hot on the heels of IBM Corp's licensing agreement with Hewlett-Packard Co on parts of the latter's OpenView, Armonk has spotted something else it likes the look of, and has now signed a licensing agreement with Hewlett-Packard for the SoftBench integration framework and Encapsulator technologies for use in future software engineering systems for the RS/6000 Unix family. SoftBench is a tool-integration framework into which third parties can plug their software development tools, providing a common interface to and communication between tools used to analyse, design, construct, debug, test and maintain software products. The SoftBench Encapsulator supports integration of third-party tools into the framework, often without modifying the tool. The move is seen as another step towards bringing the RS/6000 and AIX into the AD/Cycle fold.

ANDREW CORP EXTENDS AS/400 HANDSHAKE TO IBM'S RS/6000 UNIX BOX

Bothell, Washington-based Andrew Corp, dedicated to making sure that IBM AS/400 machines and their predecessors can speak peace to alien systems, has now come out with a version of its Handshake-Alliance 5250 terminal emulation and file transfer product for IBM's RS/6000. Handshake-Alliance is a combination of workstation and host-based software, and hardware adaptor board, providing 5250 terminal emulation and file transfer on the IBM Unix box. Prices range from \$3,750 to \$4,700 depending on configuration, and it is shipping now. The company also offers the 5250 emulation separately as Handshake-Emulation, enabling users of Unix workstations to exchange information, access applications, execute programs and share systems resources with AS/400s, at \$2,340 to \$5,400; and the file transfer separately as Handshake-Express at \$1,050 to \$1,600.

DEC HAS A CRYPTIC ARCHITECTURE FOR VMS, ULTRIX

DEC has published a new security specification for distributed multivendor systems, called the Distributed System Security Architecture. Designed for commercial and government users, the specification is said to provide a security framework for current and future applications, and for operating systems based on OSI and TCP/IP environments. The architecture was published in the US earlier this year, and the company claims that it is not attempting to establish DSSA as a standard, but to promote discussion about standards. Security across distributed multivendor systems is still a dark art, and DEC says that development of products and standards must be a cooperative industry effort. Some of the principles in DSSA have also been adopted by the OSF. One of these is the Kerberos Concept, an authentication method for campus type environments and an integral part of Ultrix, but now modified in DSSA for a global environment. Based on the X500 hierarchy, DSSA has a number of Certification Stations which hold information to verify user identification and then pass that verification on to other participants in the network. One of the the most important features of DSSA is its use of cryptographic technology, and the company claims it would take centuries of Cray computing to fake an identification. DSSA is part of DEC's Integrated Security programme, intended to provide security services and enhancements to the built-in security features of Ultrix v.4.0 and VMS v.5.4. DEC says that the Distributed System Security Architecture DSSA will also be featured in future versions of VMS and Ultrix.

AET PICKS UP MARK WILLIAMS' CUT-DOWN UNIX

AET, Lichfield, Staffordshire, is to market Chicago, Illinois-based Mark Williams Company's stripped-down Unix clone, Coherent, in the UK. Coherent costs under £100, and with less than 100,000 lines of code - compared to the 1.2m in Unix - it requires less than 10Mb disc and runs on Intel 80286, 80386 and 80486 platforms. Four discs and one manual will get you going with Coherent - it comes with a C compiler, 200 Unix commands and the Bourne shell. It resides in its own partition on an MS-DOS-based personal computer - text files can be transferred between the two environments.

LSI UNVEILS LATEST MIPS BUILDING KIT

LSI Logic Corp, Milpitas, California, has introduced the second in its family of board-level subsystems for building workstations or peripherals based on MIPS Computer Systems Inc RISC architecture. The Nginer RPM3330 board measures 3.5" square and incorporates the MIPS LR3000A processor, the LR3230 read/write buffer, floating-point accelerator, and cache memory. LSI says the complex timing concerns in RISC designs have been eliminated by putting cache, clock-generation circuitry and reset configuration logic together on the board. Multiprocessor systems can be created by using multiple Nginers. Sampling now, a 33MHz, 27 MIPS version is priced at \$1,550 each per 1,000-up. The 40MHz, 35 MIPS version samples in the fourth quarter and costs \$1,975 for similar quantities. Both are pin-compatible with the existing 20/25MHz 3310-based board.

NEC EXPANDS UNIX OFFERINGS FOR THE JAPANESE MARKET

NEC Corp, now fabricating MIPS Computer Systems Inc's R-series RISC microprocessors, has adopted the R3000 part in Japan for a high-end Unix server. The NEC Super Server UP4800/520 is rated at 33 MIPS and has up to a monster 320Mb main memory, up to 31Gb disk, and supports up to 100 lines. It costs from \$105,000 and will ship in late September: the company is looking to get 3,000 of the things out the door in the three years to 1994. The company has also extended its Motorola 68000 family with three new 20 MIPS 68040-based models, the EWS4800/15, 50% smaller in size than the current EWS4800/10; the EWS4800/35 with high-speed graphics accelerator capable of 300,000 short-vectors per second; and the EWS4800/75, which takes up to 384Mb memory, 13.9Gb disk and colour display. With the introduction of Stratus Computer Inc's 80860 RISC-based fault-tolerant Unix machines and the new in-house models, NEC reckons to have Unix offerings to serve both the technical and commercial sectors - but has yet to put the operating system on its Groupe Bull-compatible mainframes.

UNISYS LIKELY TO BREACH LOAN COVENANTS THIS QUARTER, BUT BANKERS ARE SANGUINE

Unisys Corp and its bankers are refusing to panic over the fact that the company's \$98.2m net loss for the second quarter puts it perilously close to breaching the net worth requirements of its bank loan covenants. The covenants require it to show a minimum net worth of \$3,500m and the loss takes the figure down to \$3,600m - but while the breach will occur this quarter if the company turns in similar losses and has to take charges for restructuring, the banks see the possibility of further restructuring as positive. The company plans to cut employment to below 70,000 by the end of the year from 72,000 now, and that could fall further if the company succeeds in its efforts to sell assets. It also plans to reduce further the number of plants, already cut to 19 from 36 since 1986. The company's target is to reduce debt to \$3,100m by the end of the year from \$3,870m at the end of March.

POOR MIPS FIGURES REFLECT GENERAL ECONOMIC DOWNTURN PLUS ECL CHIP COSTS

Advanced Computing Environment mentor MIPS Computer Systems Inc, Sunnyvale, California, reported an 82% downturn in profits at \$624,000 for the first quarter to March 31, compared with \$3.5m a year ago, on sales up 36% to \$44m from \$32.2m. As well as the general economic downturn, which affected its systems business, MIPS says growing margin pressures have been felt on its high-end server line because of the low volumes received, and the high costs it has had to pay to Bipolar Integrated Technology for fabricating its troubled R6000 ECL RISC processor. A second source for the part - from either Sony or NEC - is on its way, according to MIPS UK managing director Nick Ray. The firm is also waiting for royalties to kick in from volume OEM sales of its kit now being shifted by the likes of Control Data Corp.

...R4000 IS "TAPED OUT" ...

MIPS' forthcoming 64-bit 50 MIPS, 1.3m transistor R4000 part, the basis of the ACE consortium's Advanced RISC Computing platform, is now taped out, samples are expected within 60 days and volume deliveries are slated for the end of the year. Ray says that the impetus the ACE developers are bringing to the MIPS bandwagon should enable it to deliver R4000 parts at the same price as Intel Corp's 80386 in future. Licences for the base R4000 architecture start at \$2m. Although the hardware element of ACE is now more-or-less in place, the operating system software issue is still sowing confusion within the industry. To clarify matters, Santa Cruz Operation has taken a leaf out of Unix International's book and put together its own 'Roadmap' for the future of Open Desktop - one of the two operating systems chosen by ACE to run on the MIPS-based hardware specification. ODT 1.0 will conform to release 2.0 of AT&T's System V Interface Definition for Unix, which SCO reckons will run at least some Unix V.4 applications. ODT 2.0 will comply with release 3.0 of the SVID, which essentially defines Unix V.4 compatibility. As far as Microsoft's New Technology, or OS/2 3.0 ACE offering is concerned, Ray says most of it has already been ported to the MIPS architecture over the last eighteen months. When Microsoft first ported NT to Intel's 80860 RISC, MIPS wrote to Bill Gates and said "great job, but you've ported to the wrong environment, come and port it to MIPS." MIPS' own RISC/OS Unix implementation will be integrated with Open Desktop and will eventually be able to support both big endian and little endian applications.

..EXTENDS METROLOGIE PACT

MIPS has also extended its agreement with Metrologie International SA, which will now market and support MIPS systems in the UK through its High Wycombe, Buckinghamshire-based distribution division Amarante Ltd. MIPS has a year-old agreement with Metrologie in France.

HP PUTS BACK NEW-WAVE FOR UNIX - WAITS FOR OOPS DEVELOPMENTS

Hewlett-Packard Co is discovering the penalty to be paid for moving into a major new technology too early with its object-oriented NewWave environment - it is now having to wait for the others to catch up. It has put back the launch of the end-user version of its forthcoming NewWave for Unix until next year, up to a year later than planned. The delay is so that it can see what the Object Management Group comes up with and decides, and to give its new partner on NewWave, Sun Microsystems Inc, time to add significant additional functionality to the Unix version. According to *Computer Systems News*, Sun is an equal partner in the effort, and one of the key technologies it is to add is support for distributed objects, something that is not in the Windows personal computer version of the environment. A software developer's version of NewWave for Windows - which may have another name altogether in deference to Sun's sensibilities - may be available in the fourth quarter of 1991.

MODCOMP EXTENDS TRI-D LINE WITH COMBO 68000-88000 MULTIS

AEG AG's Fort Lauderdale, Florida-based Modular Computer Systems Inc has extended its Tri-Dimensional family of real time computers with the launch of the Real/Star Series of Motorola 88000 RISC- and 68000 family-based uni- and multiprocessor systems, which also run the Real/IX real-time Unix System V operating system. The series includes Modcomp's first multiprocessor RISC machines. The Real/Star models based on the 88000 microprocessor meet the Posix 1003.1 standard and are designed to be binary compatibility standard- and object compatibility standard-compliant. The company is pitching the line at real-time data acquisition and control, government and aerospace applications, simulation, communications, process control and factory automation markets. The Real/Star 1000 models are uniprocessor Motorola 68000 and 88000-based models offering computational performance ranging from 2.2 to 22 Whetstone MIPS. The Real/Star 2000 symmetrical multiprocessors are Motorola 88000-based multiprocessors rated at 43 to 86 Whetstone MIPS. They support automatic load balancing of tasks across multiple CPUs but users can also explicitly assign individual tasks to a specific CPU. The Real/Star 3000 multicomputers use both 68000s and 88000s in an asymmetrical multiprocessing architecture running Application Worksheet, a unifying software environment. The Real/Star 3000s go up to nine processors and span a performance range of 5 to 86 Whetstone MIPS. Initial shipments of the 2000 systems are expected in August 1991 at \$33,000 to \$110,000. The 1000 and 3000 systems are available now with 1000s starting at \$25,000 and going to \$110,000; the 3000s range in price from \$37,000 to \$240,000.

MICHAEL DELL GOES INTERNATIONAL - DECLINES ACE INVITATION

Last week, the 26-year old Michael Dell was in Europe, announcing the latest steps in the internationalisation of his \$600m-a-year personal computer company. New Dell Computer Corp subsidiaries have been opened in Finland and Benelux and another is scheduled to open in Spain during the summer; a new European technical support centre has been opened in Holland; and Dell's new factory in Limerick has just started producing its first models. Subsidiaries in Denmark, Norway and Switzerland will follow. Dell also took the time to comment on the recent ACE Advanced Computing Environment consortium, masterminded by DEC and Compaq. Dell reveals that the company was invited to take part, but declined. He believes that 75% of the initial ACE sales will be based on Intel chips, not the much talked about MIPS Computer Systems Inc R4000. This will make it easy for Dell to enter at a later stage, should it wish to, he says. In any case, he is not sure that the ACE initiative will survive. In the workstation market where ACE is aimed, Sun Microsystems Inc, Hewlett Packard Co and IBM are already fighting aggressively for business. "They are going to have a real shoot-out" he says. Dell, for one, is going to wait and see what happens. - Andrew Lawrence

MOTOROLA AND 88open COME OUT SHOUTING AGAINST THE STORM

Motorola came out swinging last week trying to take the offensive against chip rivals Sparc and Mips, both of whom have been riding roughshod over Motorola for months now. Dubbing it "the great Risc myth," Motorola contends that the battle for pride of place is far from over. In fact, if you follow its logic, the decision won't be known until sometime in 1995 when the Risc market overtakes Cisc. It also contends that its chances of dominance are better than the others despite the fact that the competitors' volumes are ahead at the moment and have been for a few years. Motorola has had one of those voluminous white papers done up by 88open and with 88open officials in tow was making the rounds of press folklore last week giving reporters a peek at their view of the world.

Motorola and 88Open say that the weight of the 400 engineers it has working on the 88000 and its \$500m investment in a new manufacturing facility to build 88000 chips until the end of the decade has to count for a lot, especially as the state-of-the-art moves from 1 micron technology to 0.5 and smaller. Its resources alone guarantee a long lifecycle and several generations of the 88K, with the company planning to rev the thing to a single 300MHz 110m-device chip by the late 1990s. Motorola charges that the small competitive Sparc semiconductor makers - and MIPS' too - don't have the financial clout to move to 0.5 micron without considerable outside assistance. And the multiple as opposed to second sourcing practices employed by Sun and MIPS means that quality can vary widely, and that compatibility is unassured.

Where Motorola tries to score the most points is targeting Sun's business plan. It claims Sun's clone approach leaves nowhere for its design wins to go. Sparc clones have to compete on price or in market segments that Sun has yet to enter. But Sun continues to drive prices down through increased manufacturing and economies of scale. It also plans to move into the few remaining market segments it doesn't already compete in, such as multi-processors and portables. Unlike the PC model, Unix clones have to pay royalties and licensing fees for proprietary technology and, in addition to the heavy technical support required, there is no high volume commodity market driving it. In picking Sun apart, Motorola also claims that Sun has no real common ABI for shrink-wrapped applications portability across Sparc-based systems, creating a crisis of confidence for ISVs, unlikely to support their software on anything but a Sun platform. And despite Sun's recent division of the company into three entities, Motorola still wonders whether Sun will develop the Sparc to its own best advantage, and use early access to gain market advantage over the cloners.

Intel is dismissed out of hand as unlikely to devote the resources needed to get the i860 widely accepted, its only ready market being as a graphics co-processor. The independence of its support group, Mass860, which works out of the Intel office, was also questioned. MIPS licensees and OEMs, Motorola claims, have few if any new market opportunities because they are going directly after Sun and face tough competition and pricing pressures. MIPS' position on ABIs is worse than Sun's, Motorola says. Its design wins aren't a community but rather a series of incompatible architectures. And as far as ACE goes, no one, not even the ACE members, know if it will be successful in providing software.

Motorola claims for itself the only real ABI and the first real shrink-wrapped applications to exist in the Unix industry. More than 150 applications, it says, are now certified as running on any 88K implementation. And the designability of the 88K gives it design wins the freedom to pursue unique and emerging markets as well as a quicker time to market. The high-performance large-scale network server market is wide open to them. 88K vendors are not competing on price. Motorola claims 67 design wins, 32 in computer systems and 35 in embedded. Only 23 systems makers are announced and shipping today. Four are publicly committed but unannounced. Seven are privately committed and unannounced. So how come Motorola lags the pack?

DEC OFFERS BIG DISCOUNTS TO START-UP COMPANIES IN MASSACHUSETTS

"Give me a child till the age of seven and he's mine for life," said St Ignatius Loyola, and with business so slack at the moment, Digital Equipment Corp is looking to do a little building for the future as its home state struggles to recover from the darkness of Dukakis. It is offering companies incorporated in Massachusetts between May 1 1990 and June 30 1992 a one-time discount of 40% on all its products and services, 50% on personal computers and workstations, and is hoping that there's a new Polaroid Corp or Raytheon Co out there.

DIGIBOARD COMES TO EUROPE

Multi-user board and connectivity solution supplier DigiBoard, Eden Prairie, Minnesota, is setting up a European operation in Cologne, Germany, that will go live in June - it currently has 40 distributors worldwide, five of them in the UK, and has just signed a deal with Bull that will supply its range of intelligent input/output boards on its Unix systems in Europe. DigiBoard says 70% of its market is now Unix, with some 30% of its \$23m business last year being done outside the US, 11% by its OEM customers. It estimates the US and European markets for intelligent input/output board and connectivity solutions to be worth around \$100m each. The firm is currently working on new RISC-based technology that will allow X-Windows-based systems to take advantage of multiport board solutions.

SIEMENS "TO BAIL OUT FRENCH MICROMAKER SMT-GOUPIL"

It may be less visible than the ageing mainframers and superannuated continental national champions, but French microcomputer manufacturer SMT-Goupil SA is in just as much need of bailing out as are the likes of Groupe Bull SA, and according to 01 Informatique, France is once again about to turn to Siemens AG, which has already bailed out another French second liner, Intertechnique Informatique SA. According to 01, after a difficult year in 1990 and months of seeking out a partner, SMT-Goupil is now in advanced discussions with Siemens, as well as with various financial institutions, about a capital injection. The situation has become urgent - the company simply can't go on alone, and the tension among the 1,050 staff is mounting as pay-day is put back - a tell-tale sign of financial hardship. The release of the company's financial results for 1990 left no doubt as to the company's position - the group's core computer activities contributed only \$140m of revenues for the 15-month period to March when it had been looking for around \$220m for 1990 alone. The company's problems are put down to a severe slowdown in the micro market last year, to over-extending itself by acquiring Sfena-DSI, Normerel and Forum International over three years, and to over-dependence on the French public sector, which accounted for 70% of Goupil's business but was squeezed when Bull acquired Zenith Data Systems, creating another natural and hungry contender for public sector contracts. Siemens was not the only name suggested as a potential investor in Goupil: NEC Corp was also considered, but Siemens seems to have the votes. Goupil's Intel-based G60 line servers run Unix.

Letter

Last week's edition of Unigram.X, (UX No 331), did not accurately and fairly represent the facts regarding the Distributed Management Environment, and Unix International's purported activities in that arena. There are several areas that seriously misrepresent reality:

- 1) **"UI sends out peace feelers"**: the truth is that OSF made the initial overtures. We pro-actively invited UI to participate at every step of the entire DME program. At our invitation they sent a representative to participate in our Requirements Workshop last October. As with every RFT, we convened a panel of outside expert consultants, and we extended an invitation to UI to participate; they chose to decline. We have continued to keep UI and their Systems Management Working Group fully informed. We have made it clear from the beginning that we welcome UI's participation and cooperation.
- 2) **"Object-oriented technology ... went completely missing from OSF's original RFT"**: the original RFT specifically refers to objects, including a section expressly titled "Managed Options". Object orientation was, in fact, a fundamental requirement for all submissions.
- 3) **"OSF has recently reappraised the scope of its DME RFT and reportedly overturned the old ... premise ... in favour of a new emphasis on object orientation"**: as is evident from the original RFT this is obviously untrue. In fact, we narrow, (not expand or "overturn"), the scope of RFT's as a normal part of the RFT technology evaluation process. An RFT is, by design, a broad problem statement. We narrow the scope as we evaluate the actual state of available technologies to solve the problem(s).
- 4) **"The one existing DME submission that incorporates that object management bent ... comes from ... Tivoli Systems"**: again, this is absolutely not so. All six of the DME framework submissions incorporate object management.

The errors and misrepresentations gave the piece a slant very different from the reality of the situation. It's unfortunate in that it creates a muddled and inaccurate impression of the DME RFT, and of OSF's open process.

Eileen Coons
Open Software Foundation

VICOM BUYS LICENCES TO ADDITIONAL SUN HARD, SOFTWARE FOR ITS IMAGE SERVER

Fremont, California-based Vicom Systems Inc has extended the agreement under which it licenses Sun Microsystems Inc's image software, and Sun has now given it a licence to integrate the SunVision visualisation package and Sun's multiprocessor MVX visualisation accelerator, built around four 80860s into Vicom's Master Image Data Server. The deal means that the Image Data Server will be able to accelerate imaging applications that run on Sun workstations transparently. Applications developed on a Sparcstation under SunVision can be accelerated by the Image Data Server without changing the application software. The client-server relationship is supported, so the application code can execute on the Sun system, while the image data resides within and is manipulated by the Image Data Server. This provides optimised input-output, memory, processing and display, so that image data manipulation can keep pace with the workstation application execution speed. It provides access to single or multiple 32-bit displays with programmable resolution up to 1,600 by 1,280 pixels, large bulk memory for image handling, fast image data bus for moving and manipulating images quickly, and high-throughput peripherals and local nets for flexible communication with other systems. The Server also provides analogue and digital video acquisition for interfacing to both standard and non-standard cameras and sensors, and video bandwidth disks for storage, retrieval and analysis.

ROUNDUP

Analysts - who stopped following the company in droves as it began to look terminal - are having to come around to our view that if any of the traditional second-line minimakers is to pull the "with one bound he was free" trick and get back onto a steady growth and profit tack, it is likely to be that eternal Houdini, Data General Corp - but they don't like it much: the shares are up 311% since January 1 and now stand at around \$18, but following the second quarter figures announcement, "on the conference call with Data General, the analysts all sounded as if they had swallowed bars of soap," John Adams of Boston broker Adams, Harkness & Hill advised the Wall Street Journal - "nobody enjoys prosperity if they haven't been predicting it."

The National Institute of Standards and Technology in the States has finally accredited a bunch of companies to do Posix.1 compliance testing and certification: Mindcraft in California, Applications Software in Minnesota, Data Focus in Virginia, Hewlett-Packard/Chelmsford in Massachusetts, Perennial in California, National Computing Centre in Manchester, England and Unisoft in California. The UK arm of Unisoft has not been accredited. The race is now on to get the stamp of approval for systems being bid on big government contracts like TMAC, due for award soon, that require certification. Doubtless some of the testing of reputedly "Posix-compliant" boxes is also going to turn up some interesting results.

Another Unix show has taken a hit because of the soft economy: exhibits at the summer Uniforum in Washington, DC have been cancelled.

Xhibition looks as if it might be shaping up despite the economic climate putting a damper on other shows: it's expecting 100-plus exhibitors, 40 tutorials and 8,000 visitors, up from 5,000 last year, and will feature a open-theatre Applications Showcase for live demonstrations of new software on the show floor. Dates are June 3-6 at the San Jose Convention Center in California. To register call (415) 388 7750.

Now that Addamax has filed its antitrust action against OSF, DEC and HP, (UX No 331), the consortium and its founders have got to be worried that other ISV's are going to become emboldened by the Addamax example: there have been rumours of other companies talking to their lawyers. An ISV has to have a good bit of intestinal fortitude for such a move. It's expensive, hard to find a major league lawyer who could take the case without being in conflict of interest with one of the founder members and all told - for a small firm - means giving up the technology business for full-time legal manoeuvring.

It looks as though Sun Microsystems Inc's two-to-four processor Galaxy Sparc system, (UX No 331), will be based on the 28.5 MIPS Sparc CPU from Cypress Semiconductor: it'll be followed by a second, two-to eight processor system using Texas Instrument's 40MHz, 60 MIPS Sparc implementation, (UX No 316), which is shaping up to be a 100 SPECmark machine in two-processor configuration.

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DEC claims the European content of its new DECstations, manufactured in Scotland, stands at almost 100%: it gets the MIPS R3000A chips from Siemens.

And along with the hardware announcements (see front page) DEC also introduced a portfolio of networking products that include new server software for the DOS environment, and enhanced server software to allow LAT and Telnet to co-exist - meaning that DEC terminal server products will work in both DEC and non-DEC environments.

Dutch gas distributor, NV Nederlandse Gasunie, has bought two Convex Computer Corp systems for simulating and scheduling a country-wide natural gas network.

And Sybase Inc says its range of relational database software is now available for the Snakes - prices for the various components go from \$450 to \$40,000 depending on CPU size.

WordPerfect has started shipping release 5.0 of its software for IBM's RS/6000s and Applix has released an Open Look version of Asterix, a companion piece to the Motif version that's been out since January, a quarter ahead of time due to demand.

The US Air Force has installed an Alliant Computer Systems FX/2800 supercomputer at its Wright Patterson base in Ohio which it will use to develop real-time avionics systems in the laboratory.

Frame Technology is shipping a Japanese version of FrameMaker developed by Matsushita under an exclusive joint development pact. It adds Japanese-specific publishing capabilities and will be available only on Panasonic BE workstations running X-Windows and Motif. Sun and Sparc-compatible versions will be added next month.

NeXT Computer UK has established six initial NeXT centres, (value-added resellers): Metric-Alcar, London; Fairhurst Computer Solutions, Manchester; Tri-Mac, Sheffield; Alger, Brownless & Court, London and a new NeXT venture in Dundee - NeXT says it is negotiations with a dozen other firms and will announce further signings shortly.

Deciding that discretion is the better part of valour after receiving a lawsuit from Sybase Inc and its UK subsidiary Sybase Software Inc, UK image processing software developer and systems integrator Sybase Ltd, of Bishop's Stortford, Hertfordshire has decided to change its name to Shadow Technology Ltd.

Structured Software Solutions has announced FaceTerm 2.0, a windowing system for terminals attached to Unix systems. It allows users to run up to ten Unix applications on a standard character terminal and switch between applications at any time. A pull-down menu is included. Sessions running off-screen continue to run and when called back to the screen, display updated information. The software is currently ported to SCO Unix and Xenix, NCR Towers and Unisys Unix machines and is priced at \$500 for a five-user licence up to \$8,000 for a 100-user licence.

Hughes Data Systems, an offshoot of Hughes Aircraft, is developing Tempest versions of some of Hewlett-Packard's 9000 Series 700 workstations, starting with model 720.

Abraxas Software International, the California software house that changed its name to Intrix Systems Group last year, has filed for bankruptcy: its speciality was SQL-based distribution and accounting, inventory control, order processing and purchase order applications packages.

Interbase Software Corporation, now a part of Ashton-Tate, and Convergent Solutions Inc have a joint marketing and development pact for an interface between Interbase's RDBM system and Convergent's 4GL-based applications development system, CS/ADS. Interbase will sell the resulting product.

Language Processors signed a marketing and distribution agreement with ASP Express Inc, the brand new software sales and support subsidiary of Altos Computer Systems. ASP, which is to focus on Unix-based applications and communications software in support of Altos' installed worldwide base, will handle LPI's complete line of packaged compilers and debuggers for 386 and 486 platforms. LPI will provide user support.

UK, Cambridge-based Unipalm Ltd has been signed up as European reseller and support centre for Anaheim, California-based Integrated Inference Machines' Microsoft Windows 3-compatible X Sever X11/AT.

A European C++ User Group has been set up in London, chaired by Mike Banahan: it will publish a quarterly newsletter and hold a twice-yearly conference and exhibition - the group can be contacted on +44 71 253 5121.

Alliant Computer Systems Corp says General Electric CGR, Paris, has installed its FX/2800 and FX/800 RISC-based supercomputers for use in three-dimensional medical imaging applications and as a supercomputing server.

Oracle UK is looking for a UK managing director while the last man to have the job - Ian Thacker - is busy "scoping up" the job of worldwide support manager, a position he hopes to make his own: while he does this Geoff Squires has stepped in as an interim measure until a new UK MD is appointed; Thacker is apparently keen to work in the US.

Access Technology Inc's 20/20 spreadsheet is now available on DEC's RISC Ultrix systems - prices go from \$600 for a single-user DECstation 3100 license to \$11,800 for an unlimited user DECsystem 5840 license: international versions will be out in the third quarter.

Dutch database specialist Uniface says its fourth-generation application development system is now available across Hewlett-Packard's Series 9000 range of Unix workstations.

Maybe it won't be the Addamax suit, (UX No 331), or the FTC investigation that kicks the stilts out from under the Open Software Foundation; maybe it'll be one of its prestigious founders instead. At least that's what they were supposing in some quarters of the industry last week. It seems that there was an ACE Architectural Review meeting and suddenly little lightbulbs were going off in a lot of heads. It's amazing how many ACE founders and big-wig members hadn't realised or understood the implications of ACE's Open Desktop version of OSF/1 being binary-compatible with Ultrix - or what a potential coup it is for DEC - providing ACE comes off. Now it looks like DEC's OSF/1 edition has a clear run at coming out the de facto standard. So how are IBM and Hewlett-Packard going to react? Are they going to keep pouring resources into OSF? Not likely, people are saying, betting that the pull-out is about to happen. Also, they say, you've got to remember DEC doesn't want to be in the hardware business anymore - no money in it. Instead it wants to turn itself into something that looks like the Excel side of Microsoft doing network integration, software integration and applications.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

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14 MAY 1991

The weekly information newsletter for the UNIX ® community worldwide

London, May 13-17 1991

Number 333

FOUR RUNNERS IN OBJECT MANAGEMENT GROUP'S SEARCH FOR A REQUEST BROKER BECOME THREE...

The Object Management Group's search for an Object Request Broker seems to be having the effect of a marriage broker on the industry. First there was the historic HP/Sun union, (UX No 323), and now DEC and Hyperdesk have pledged to merge their technologies in a joint OMG submission, ending the short-lived speculation that such an alliance was in the works (UX No 332). The Object Request Broker provides the mechanisms via which objects transparently make and receive requests and responses. Its significance is that it provides the interoperability between applications on different machines in heterogeneous environments and seamlessly interconnects multiple object systems. DEC and HyperDesk are coming together because their offerings are so similar, not because they are complimentary - they both concentrate on the client side of the interaction are judged to be weak on the server side - and will offer a single application programming interface and a single request communications protocol to ensure interoperability between their respective object request brokers and object managers.

...THREE TO BECOME TWO ?

Furthermore, if insider sources are correct, negotiations are currently underway to find a way for the remaining NCR/ODI submission to be combined with the "HyperDEC" proposal. The DEC tie-up ostensibly makes the OMG Request For Technology a three-horse race. If NCR throws in its lot with DEC too, it will level the competition to a run-off between HP/Sun and an unholy alliance of all remaining technologies from DEC, Hyperdesk, NCR and Object Design Inc. In other words, a fight between those who have an installed base to nurture and those that as yet have no significant market share. Whatever the result, it can be safely assumed that object-orientated technology is now deemed crucial to distributed computing by major hardware vendors. Pressure for such a move is certainly coming to bear on NCR, whose technology is well regarded, but not scalable and unlikely to win on its own. However the HP/Sun faction - as well as the DEC/Hyperdesk contingent - is also believed to be seeking NCR's partnership. NCR has previous commitments to HP technology, being a NewWave OEM. On the other hand, it did not vote for the HP/Sun submission in the last OMG go-round, and on the other side of the equation, ASCII Corp, which owns a 38% holding in Hyperdesk, is also rumoured to have a stake in Object Design. One thing that this series of alliances offers DEC - assuming that the liaisons have a deeper meaning and are not just a set of spoilers for HP - is a very strong development hand it can turn to object-oriented technology. Bill Andreas of HyperDesk and Tom Atwood of Object Design are both acknowledged to be pioneers at the cutting edge of commercially applicable object-oriented technology. The real dark horse in this race however, is still Microsoft, whose Object Linking and Embedding technology has not been submitted to OMG, and could yet wind up allied to DEC and Hyperdesk. Such a combination - whether or not NCR/ODI takes the plunge - would be hard for HP/Sun to beat, especially since in some opinions the Hyperdesk technology could best HP/Sun on its own. However one reason for Microsoft being seen but not heard within the OMG Task Force thus far is probably that it is thinking hard how to out-manoeuvre rivals in the OMG's class library group request for technology, set for June. This is where its OLE technology is more likely come under scrutiny, and where it will be face to face with Borland and "others" - suffice to say that it is believed that Metaphor Computer Systems Inc, representing the Patriot Partners project with IBM, has secretly joined OMG. Meanwhile, the Object Request Broker decision is too important for HP and Sun to lose. In fact, they would reportedly not be content with merely winning but are looking for a landslide on the first vote, scheduled for May 28. They are said to be doing some heavy politicking inside OMG, "twisting arms to get votes," according to one company. What may play to their favour is the fact that it is not a secret ballot. Voters may be put in the position of voting their pocketbooks over their technological choice. There was heavy E-mail traffic last week discussing the open vote issue. Though many voters would prefer it be closed, it appears the OMG technical committee is adamant it be open. Outsiders who have talked to Hyperdesk say that even with DEC in its corner it's not confident it can win, claiming it could be out manoeuvred by superior marketing. This week OMG has demonstrations scheduled at its headquarters in Massachusetts. The May 28 vote is intended to reduce the field to two contestants, but that could effectively be accomplished if NCR makes a move - most likely before the demonstrations. Another vote is set for early June.

AT&T WINS NCR'S HAND...

AT&T Co finally won agreement from NCR Corp for its proposed \$7,480m share exchange proposal after it agreed that NCR holders would not get less than \$110 a share value provided AT&T's share price stays above \$34.125. AT&T's shares were off 37.5 cents on the news at \$36.75. The merger is expected to take four to five months to complete, whereupon Charles Exley will resign and president Gilbert Williamson will step up to become chairman and head of the combined NCR-AT&T computer business, which will be run from NCR's Dayton headquarters under the NCR name. The 107-year-old company employs 55,000 people for its \$6,000m-a-year turnover; AT&T is estimated to have lost about \$200m on computer sales of \$2,000m last year, but although the combined computer company is likely soon to surpass the fading Unisys Corp to take fourth place among US computer companies, it is unlikely that annual sales will initially amount to as much as \$8,000m because AT&T's computer business has been fading fast since it announced its \$90 a share cash bid for NCR at the end of November. NCR is expected to fire between 5,000 and 6,000 of AT&T's computer employees - it has about 9,000 people all told and AT&T will try to find other jobs for many of the surplus people. AT&T will pay 40% in cash and 60% in stock if the regulators refuse to allow the deal to go through as a pooling of interests.

...AS NCR SETS TERADATA LAUNCH

The company may be about to change hands, but business must go on at NCR Corp, and today it unveils the fruits of its joint development agreement with Teradata Corp, Los Angeles when it launches the NCR 3600 - or Level 6 - a multiprocessor 80486 machine it reckons will be the most powerful open general purpose computer currently available. It's set to come with up to 100 Intel Corp 80486 parts, going to 4,000 MIPS and is slated for delivery next year. Meanwhile, reports from the NCR Users Conference - Nucon - in San Antonio, California, last week say Intel's 50MHz implementation of its i486 part - the cornerstone of NCR's Series 3000 Unix systems announced last September, (UX No 301) - will be announced next month, with a 66MHz version planned before the end of the year.

STARDENT LAUNCHES I860 DESKTOPS

After abandoning its ambitious plan to marry MIPS Computer Systems Inc's R3000 processor with Intel Corp's 80860 in a single RISC system, (UX No 327), Stardent Computer Inc, Concord, Massachusetts, will tomorrow announce a series of desktop graphics workstations thought to combine Oki Electric's as-yet unannounced i860-based Okistation 730 workstation, (UX Nos 302, 319) with a Stardent-developed graphics subsystem and the Application Visualisation System graphical software. Oki Data Microsystems in Boston said it could not comment, but confirmed that an announcement was planned for the near future.

HP SYMMETRIC MULTI-PROCESSING RISC SERVERS AWAIT TAGS...

Sources say HP's plans for high-end Nova and Supernova PA RISC-based symmetric multi-processing servers are well advanced, (UX No 331), although a launch date slated for towards the year-end won't be finalised until a price/performance entry point for its distribution channels has been fixed. In addition HP is keen to have the things already stocked in time for the announcement, and is moving production capacity from its LaserJet printer line over to the new servers. The servers, binary compatible with the Series 700 Snake workstations, will use a standard version of the PA RISC, tweaked for the symmetric multi-processing and transaction processing markets at which they're aimed - floating point performance will be de-emphasised. HP will position the Nova and Supernova as solutions for integrating multiple workstation, personal computer and X-terminal platforms.

...CONTINUES WORKSTATION PUSH...

And continuing its workstation attack, in the US, HP/Apollo, Sun, DEC and IBM users are being offered up to \$4,500 credit per computer if they swap their existing systems for Hewlett-Packard's new Series 700 RISC workstations. The offer will be applied to most other countries, except the UK, where, HP says, Her Majesty's Customs and Excise regulations make it impractical.

...HOLDS UP NEWWAVE FOR UNIX TO AWAIT SUN CONTRIBUTION...

Hewlett-Packard Co is discovering the penalty to be paid for moving into a major new technology too early with its object-oriented NewWave environment - it is now having to wait for the others to catch up. It has put back launch of the end-user version of its forthcoming NewWave for Unix until next year, up to a year later than planned. The delay is so that it can see what the Object Management Group comes up with and decides - see page one - and to give its new partner on NewWave, Sun Microsystems Inc, time to add significant additional functionality to the Unix version. According to *Computer Systems News*, Sun is an equal partner in the effort, and one of the key technologies it is to add is support for distributed objects, something that is not in the Windows personal computer version of the environment. A software developer's version of NewWave for Windows - which may have another name altogether in deference to Sun's sensibilities - may be available in the fourth quarter of 1991.

...PRECISION ARCHITECTURE FIRST FROM HITACHI

Hitachi Ltd has brought out its first workstations built around Hewlett-Packard Co's Precision Architecture RISC: they are the top two models in a new 3050 series. At the bottom of the line is the Creative Station 3050, a desktop 68040-based box rated at 20 MIPS. The RISC models are the desktop 3050R and the 3050Rsv server, and use the same version of the RISC as is used in the new HP 9000 Model 720, which is rated at 57 MIPS. The machines come with up to 128Mb memory and 2.4Gb disk. The new machines come in above Hitachi's existing 68030-based 2050 Unix workstations and servers, and bring the number of models in the line up to seven; Hitachi fabricates versions of the RISC under licence.

MIPS HAS TEN MORE ACES UP ITS SLEEVE

MIPS Computer Systems, which is officially charged with recruiting adherents to the ACE Initiative, says it's signed up another ten companies. The revelation came at an ACE symposium held at the venture capitalist firm of Hambrecht & Quist the week before last. MIPS declined any further details, such as their names, until some months down the road, when it fully expects to have even greater participation. Jim Billmaier, the MIPS official directly responsible, would only add that the response from the personal computer community has been heavy. Apparently these latest recruits signed up without too much persuasion from MIPS, Billmaier having been busy with other ACE tasks. Meanwhile, the technical committee overseeing the ACE hardware specification, which MIPS also presides over, was supposed to hold its final review last week before freezing the specification in June. Non-ACE members will be denied access to the specification until they see first product on the market in 1992.

CMS ENHANCEMENTS SET WITH TRIGEM'S SPARC KIT

CMS Enhancements Inc has finally announced its plans to move into full systems under its agreement with TriGem Computer Corp of Seoul, South Korea, revealed here last November. The move gives TriGem a head start in its efforts to get its Sparc-based Sun Microsystems Inc-compatible machines established, because the Tustin, California company is a well-respected peripheral subsystems integrator with a broad spread of retailers taking its products. It is taking both Sparc machines and 80286-based notebooks, 80386SX, 80386 and 80486 desktop and floor-standing machines from TriGem. CMS will integrate them with drives from its existing suppliers such as Conner Peripherals Inc and Seagate Technology Inc to capitalise on the fact that most customers want pre-configured systems but many retailers lack the skills needed to put systems together. CMS says prices will go from \$1,000 for an 80386SX system at the bottom to as much as \$11,000 for a Sparc machine at the top - but there is no mention of the mooted joint venture company in which TriGem was to have held a 40% stake.

NCD BRINGS WINDOWING TO ASCII TERMINALS...

Network Computing Devices Inc, Mountain View, California, has introduced two new mono terminals that bring windowing functionality to character-based ASCII environments without the need to change the host software or applications. The 15", 1024 x 880 MWT15b and 19", 1280 x 1024 MWT19 can display up to eight windows, running different applications such as transaction processing, database management and office automation, from multiple networked hosts. X-Window terminals usually require X-Window client software to be installed on every networked host. NCD has placed these window management and terminal emulation functions - which in X-terminal environments reside on the host - inside the terminal itself. The terminals can be connected to an Ethernet network and replace an ASCII terminal with no changes to the host software. The MWT15b costs \$1,700 - the MWT19 is \$3,400 - both come with 4Mb RAM.

...AS WESTWARD SETS NEW X-TERMINALS

Westward Technology Ltd, Tewkesbury, Gloucestershire, the graphics technology arm of Trend Communications Ltd, is launching three new models in its 4500 series of X-Window terminals at the European Unix Show in London's Olympia between June 18 and 20. Built around 50MHz implementations of Texas Instrument's 34010 processor, the 20" colour 4520T; 17" colour 4517 and a 14" mono 4515 come with from 1Mb to 8Mb RAM and cost £4,000, £3,000 and £2,000 respectively.

CONVEX UNVEILS ITS

GALLIUM ARSENIDE SUPERCOMPUTERS

Convex Computer Corp made the biggest announcement in its history last week, moving up into the supercomputer world with the launch of the Gallium Arsenide C-3800, which competes with mid-range machines from Cray Research Inc, and the C-3400, which uses Gallium Arsenide for critical parts of the system and RISC technology. The Richardson, Texas-based outfit also came out with faster models of its four-year-old C-2 line, renamed the C3200. All machines in the new C-3 series are binary compatible. The high-end C3800 - available in four models - comes with from one-to-eight 0.8 micron, 45,000 gate-array GaAs processors from Vitesse Semiconductor Corp running at 16.67 nanoseconds, delivering 2 GFLOPS performance in 32-bit operation and 1 GFLOPS in 64-bit mode. They come with up to 4Gb RAM and 4Gb virtual memory. The C3800s also incorporate an expert system-based diagnostic tool housed in a Sun Microsystems Inc Sparcstation connected to the machine. The six-model C3400 departmental system uses from one-to-eight Convex-designed, Texas Instruments-built, 150,000 gate-array, BiCMOS RISC chips running at 50MHz, comes with 4Gb memory and delivers 800 MFLOPS performance. Convex expects to double the performance of its RISC architecture each year. The C3200 server comes in four models with one-to-four processors running at 40 nanoseconds, delivering up to 200 MFLOPS performance with up to 2Gb memory. All C-3 models come with 8Kb local cache on each CPU. All run the ConvexOS Unixlike, which the company says is moving towards compliance with X/Open's XPG portability guide. Convex, a member of both Unix International and the Open Software Foundation, says it will evolve its operating system to be compatible with both Unix V.4 and OSF/1. Connectivity options supported on the C-3 series include the High Performance Parallel Interface - HiPPI - Ethernet, UltraNet, Hyperchannel, OpenConnect, DECnet, TCP/IP, NFS and the HP/Apollo Network Computing System. Convex's next move will be into the massively parallel market, with systems running hundreds of processors expected in around three years - it says it will continue to enhance its existing C-2 series. Prices for the C-3 range go from \$350,000 to \$8m at the top - the C3800 ships in 30 days. Convex claims an installed base of 798 systems evenly distributed between the US, Europe and the rest of the world, with 1,100 applications up and running across the ranges. 28% of its installations are in the computer-aided engineering market, 24% in government and aerospace markets, 16% in the chemical industry and 12% in the petroleum industry.

DEC HOLDS OSF/1 SHIP TO AWAIT OPEN DESKTOP...

The decision of the Advanced Computing Environment consortium to adopt Digital Equipment Corp's implementation of OSF/1 as the core of the upcoming Santa Cruz Operation Inc Open Desktop environment has thrown DEC's own plans for marketing OSF/1 into confusion. According to *Electronic News*, DEC has scrapped its plans to ship production copies of OSF/1 late this year, and will now wait for Open Desktop, which is not due until the middle of 1992.

...NEW UNIX/MS-DOS INTEL PC THIS WEEK

DEC is also expected tomorrow, Tuesday, to unveil a new Intel Corp-based workgroup computing personal computer environment running both MS-DOS and Unix. Rumour has it that it may be a DEC in-house design made to order by Intel. And DEC claims the European content of its new DECstations, manufactured in Scotland, stands at almost 100%: it gets the MIPS R3000A chips from Siemens AG.

IBM SLASHES RS/600 PRICES

Having cut prices across the board on the AS/400s, in what looked like an effort to fend off the challenge from its own RS/6000, IBM last week made matters worse for itself from a self-impact point of view by slashing prices on the Unix workstations and servers by up to 60% in a move seen as being a defensive effort to protect the machines from inroads threatened by Hewlett-Packard Co's HP9000 Series 700 machines, currently the price-performance market leaders. The high-end Powerstation 550 was cut by 60% to \$52,500 - £42,327 in the UK - although it has only just started shipping; the 950, not yet shipping, was cut by 35.5% to \$94,500, £69,537, and the new price includes 64Mb of memory against 32Mb previously and disk doubled to 1.7Gb. There are lesser cuts accompanied by improved basic configurations on the smaller models, and a new Fortran compiler is said to give 25% to 30% better performance in compute-intensive work.

OSF URGES MOTIF, PRESENTATION

MANAGER, MICROSOFT WINDOWS MERGER

A review is currently underway amongst the Open Software Foundation's membership to see how the Motif, Presentation Manager and Microsoft Windows graphical user interfaces can be brought closer together - if not merged completely. From an end-user perspective the three already look very similar, and in certain places share similar data structures and windowing technology. The object of the review is to determine how, via the process of evolving the interfaces, the three can be brought closer together - or even merged, as OSF's manager for Motif, Craig Lamont admits would be "the best outcome." A paper - General Interaction Techniques - has been circulated to OSF members for recommendations to see how this can be achieved, and OSF has itself been holding meetings with IBM and Microsoft on the issue.

SPEC UNVEILS MULTI-TASKING PERFORMANCE TEST SUITE

The Systems Performance Evaluation Cooperative, SPEC, tomorrow unveils its latest benchmark suite - this time for measuring the multi-tasking and multi-programming performance of its members' hardware platforms, that is the throughput as opposed to raw speed. SPEC's SDM 1.0 - System Development Multi-tasking - contains two testing tools: Software Development Throughput, SDET, for evaluating commercial Unix systems, and Kenbus1 which measures Unix computers used in research and development. The tests evaluate a variety of system resources such as CPU, memory, disk input/output and operating system services whilst they are performing concurrent tasks such as file editing, compilation and Unix command processing. They address questions of job throughput and how many jobs or tasks can be processed in a given period of time, given a certain workload, by gradually increasing the workload on the system until a bottleneck is reached in some system component. SDET is derived from a proprietary AT&T benchmark - Kenbus1 comes from the Monash University Suite for benchmarking Unix systems. SDM uses a Script/Hour metric for rating throughput and maximum capacity of one system compared to another. SDM 1.0 is available now priced at \$1,450 per licence.

INGRES TAIL BEGINS TO WAG THE ASK DOG AS IT MOVES BEYOND MANUFACTURING STRONGHOLD

by Katy Ring

Sandra Kurtzig recently flew to the UK to outline her strategy for Ask following the acquisition of Ingres. She is clear that following the merger, the company is neither an applications company nor a database company, it is "a serious software company" dedicated to the promotion of client-server computing in the business world. One can hardly quarrel with the view that this is a sensible paradigm to adopt for selling software in the 1990s; but what does it actually mean, and does Ask have the credibility to cut it as a serious software house?

Ask is defining client-server computing as follows: the ability to "split applications and databases across multiple processors or multiple computers". All well and good but Ingres is some way from delivering anything more complicated than a means to insulate application developers from system level engineering via Visual Object Templates when writing applications for client-server computing. A little more of which later. The core product driving this new strategy is Ingres version 6.3, a substantially re-engineered database to embrace modern features such as Windows 4GL, Knowledge Manager and Object Manager. This version is well-respected within the software industry, although to be fair, while it outshines several well-known commercial databases with its implementation of some object-oriented technology and some expert system technology, it is not leading edge - in the commercial marketplace Sybase and Interbase are not being outpaced by Ingres Object Manager and Knowledge Manager. Where Ingres is scoring points is with Windows 4GL and here, of course, the company has been knocked back by the departure of six key members of the development team. Ms Kurtzig denies that this has had any impact whatsoever; she added that three further Windows 4GL products had nearly completed development when the band of developers left. Indeed, a Windows 3.0 version of the product is already in beta test, and Open Look and Apple Mac versions will follow. Aside from a strong database offering and a whizzy application development tool that Ingres had before it joined Ask, what else is Ask offering for client-server computing? Well, the company says it will launch products it describes as Visual Object Templates to be used in conjunction with Windows 4GL, which will be marketed complete with an object-oriented data dictionary. Windows 4GL product marketing manager Matthew di Maria compared the Templates with the Ingres Vision product insofar as you can compare a character-based 4GL tool with a forms-based 4GL tool. The Templates, combined with other Ingres products look likely to take Ask Ingres into a fully-blown object-oriented lower CASE object-oriented environment.

Advance next generation of ManMan

Matt di Maria disliked the term CASE to describe the Templates because they do not prescribe the analysis and design side of software engineering, although the templates are generic and when brought to market will work with a variety of CASE methodologies. Ingres has also followed Informix and joined the Object Management Group - spot that Hewlett-Packard connection - and so presumably the Object Request Broker will be its favoured method of distributing applications in a client-server environment. And then there are the applications themselves - Ask's forte in the manufacturing sector. Here, Ms Kurtzig mentioned the Advance product, as yet unlaunched, which is the next generation of its ManMan manufacturing product. Under the Advance name, a General Ledger will be released, followed by Order Entry, Accounts Receivable, Inventory and Payables - these are generic applications that will be offered, along with Ingres, Windows 4GL and the Templates, to third parties for customisation in sectors other than manufacturing.

Only then will manufacturing-specific applications come out under the Advance brand name. In sum, Ms Kurtzig did a good job at squashing rumours and gossip that Ingres would become a manufacturing-dedicated database - the Ingres Products Division is clearly driving Ask; manufacturing applications is now only part of Ask Computer Systems' business. Since the merger, the industry has also noticed that Ingres is scoring marketing successes in its promotion of Windows 4GL and of Object Manager - indeed, rivals are grumbling about "slick presentations", and for that the Ask Ingres marketing divisions must take a lot of credit, although having a less ebullient Oracle to contend with has undoubtedly helped. The technology is strong, the marketing is focused, the financing is in place, the arch rival is currently on its knees - the flip side? If Ask is serious about being "the recognised software leader in the worldwide evolution to client-server computing," it helps to offer a blueprint, an architecture, some details about how this is to be done...

SECURITIES FIRMS, LAWYERS ARE THE REAL WINNERS OF AT&T-NCR BID BATTLE

The AT&T Co-NCR Corp battle, finally settled in AT&T's favour, but on terms that should prove very acceptable to NCR's shareholders, has been Christmas and birthday all rolled into one for the handful of securities and legal firms retained by the companies on deal-starved Wall Street. According to the *New York Times*, NCR paid Dillon Read & Co \$2.5m upfront in fees to conduct its defence, plus a percentage of the value of the final deal, which means it will get \$18.5m; Goldman Sachs & Co was added to the team later on the same terms. Oddly, the team on the losing side comes out better than AT&T's advisors: Morgan, Stanley & Co got \$3.5m upfront when there was no certainty that a deal would ever be done, but collects \$13.5m all told. On the legal side, AT&T reported that up to March 31, its legal fees were \$12m, and NCR's legal advisor Weil, Gotshal & Manges stands to do as well.

TANDEM TO ADD POSIX, X/OPEN COMPLIANCE TO NONSTOP GUARDIAN/90

Tandem Computers Inc has made a commitment that its Guardian/90 NonStop operating system will comply with Posix and the X/Open Co Ltd Portability Guide Issue 3. Initially it plans to comply with Posix.1 for the operating system interface, Posix.2 for shell and utilities, and Posix.4 for interprocess communication message passing, and it plans to qualify for XPG3 base branding. The moves mean that new applications developed on Tandem machines will run on other Posix and XPG3 machines with recompilation.

MARKET ROUNDUP

At this year's European Unix Show, which takes place in London's Olympia between June 18 and 20, Empress Software UK will announce release 4.6 of the Toronto, Canada-based firm's Empress database and fourth-generation language.

Abraxas Software International, the California software house that changed its name to Intrix Systems Group, and declared bankruptcy last week, (UX No 332), is one of a group of companies owned by CSY Investment, a Sacramento-based real-estate outfit.

mbp Software & Systems GmbH's UK subsidiary, Berkhamstead, Hertfordshire, is now shipping version 1.1 of Westborough, Massachusetts-based Applix Inc's Asterix 1.1 office and publishing software for Sun Microsystems Inc's workstations running Open Look - it's priced at £1,000.

Prime Computer UK has won orders totaling £320,000 for its Series 5000 systems from the London Docklands Development Corp, the Institution of Civil Engineers and food processing equipment manufacturer APV Rosista.

Siemens Nixdorf Information Systems Ltd together with Hospital Engineering has announced an information management system for the UK National Health Service: Case Mix runs on Siemens Nixdorf MX500 Unix systems and can be linked to other applications within the NHS information technology environment.

UK-based InfoTek is distributing UniVerse, Vmark's data management and applications development system on Sparc, MIPS and Motorola 88k processors.

In the UK, relational database firm Unidata has taken on Staffordshire-based Specialist Computer Group as its second value-added reseller.

Intergraph Europe has opened a new office in Prague, Czechoslovakia to market mapping and geographical information systems and establish partnerships with universities and industry; it will provide support to dealers of MicroStation PC, a computer aided design software package for personal computers.

Cincom Systems, Maidenhead, Berkshire, has a version of its Supra relational database for Motorola's 88000-based Delta Series 8000 RISC machines: it's available from Landmark Computer Systems Ltd.

Stratus Computer Ltd, Hounslow, Middlesex, has installed its first system in Ireland at the Trustee Savings Bank, Dublin: the order, for an XA2000 Model 200, is worth £300,000.

And Stratus has won a \$1.1m order from Cathay Pacific Airways, Hong Kong, for an XA2000-based cargo system, following its agreement with Japan Airlines, Lufthansa Airline and Air France to develop a global logistics system for cargo delivery: the box will run Mosiak software from Danet GmbH, Germany.

Research Machines Network Systems has won a £250,000 order from Racal Radar Defence Systems for forty Intel 80386 machines running Santa Cruz's Open Desktop operating system bundle.

Unisys distributor Open Technology Group, Leeds, has bought the hardware distribution business of Bristol-based systems integrator Realstream from Eldridge, Pope & Co, and formed a new Open Systems Distribution division.

The Medical Research Council's Laboratory of Molecular Biology, Cambridge, has installed a 24-processor, Intel i860-based Alliant Computer FX/2800 system for biomedical research.

Computer Associates is now shipping release 11.0 of its CA-Disspla graphics development environment for IBM's RS/6000 AIX, Silicon Graphics' Irix and Cray's Unicos Unix operating systems: it already runs on DEC's Ultrix implementation.

Data General Corp is to distribute Integrated Computer Solutions Inc's Builder Xcessory tool for creating OSF/Motif-based user interfaces: Xcessory is now compatible with Motif version 1.1 - it costs \$2,500.

The Conselho Nacional de Desenvolvimento Cientifico e Tecnologico, or CNPq, Brazil's council for technological development is buying 526 desktop workstations which it will donate to universities throughout Brazil; and Sun has won a contract for 50 Sparc systems from the Polish Academy of Sciences - Polska Akademia Nauk - in Warsaw, Poland.

Weitek Corp has coupled a Sparc processor with a 2-D graphics accelerator for manufacturers building Sparc-based desktop systems that sell for less than \$15,000: it includes Weitek's W8701 Sparc at 33MHz or 40MHz and integrates Sparc integer and floating-point functions on one chip - the W8701 is socket and binary compatible with the standard 601 SPARC integer unit chip and so can be used with existing Sparc motherboard designs.

The compilers that Alliant Computer Systems has developed for Intel Corp's i860 RISC processor are unlikely to become available before the autumn, a year later than planned, according to US reports.

Wind River Systems is opening a research and development centre in Vannes, France: the firm reckons that 20% of its revenues now come from Europe - it has now begun shipping a version of its VxWorks real-time Unix operating system for the MIPS Computer Systems R3000 processor.

The Open Software Foundation's OSF/1 Validation Suite Extensions - one of two test suites required for vendors to verify that their OSF/1 implementations conform to its Application Environment Specification for Operating System Programming Interfaces, AES - is now generally available, it costs \$15,000: the second suite is X/Open's VSX3 which verifies XPG3-compliance.

Borland International Inc thinks object-oriented programming is so wonderful that every programmer should be introduced to its benefits: to this end it has cut the price of its Turbo C++ programming language in half and it's now \$100.

NCR Corp of Grand Rapids, Michigan has signed with Baan Info Systems Inc, also of Grand Rapids, to provide Unix-based solutions for manufacturing, wholesaling and construction using NCR System 3000 computers with Baan's Unix software - the contract will be worth \$1.5m to NCR over the next 18 months.

Hewlett-Packard Co is not going to get all of MAI Systems Corp's OEM business for Unix systems: the Tustin, California company has done a deal with Sun Microsystems Inc under which it will market a new set of accounting modules it developed specifically to run on Sun machines in a client-server schema; the new product will make full use of the latest Sybase relational database management systems and the Open Look graphical user interface.

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Sequent Computer Systems and Oracle Corp are claiming 319 transactions per-second for the Transaction Processing Performance Council's TPC-B test with Oracle version 6 running on a 16-processor Symmetry 2000/700 system.

AGE Logic Inc, San Diego, California, says its XoftWare X-Windows software is now available for Intel's 80960 RISC processor series, allowing developers to design X-terminals around the Intel part.

Hewlett-Packard has won a £600,000 order from British Aerospace for 11 Unix workstations and 16 emulation systems which it will use to develop real-time software for the Tornado and European Fighter Aircraft.

Unify's Accell 4GL and Unify 2000 database are currently being ported to ICL's Intel 80486-based DRS3000 Unix V.4 platform - they'll be available in July.

London-based Olivetti systems house, Aspirin Business Computers, has won a two-year, £1,360,000 contract to supply the London borough of Newham with open systems computer equipment.

BIM Information Technology NV, Everberg, Belgium, has released version 3.0 of its Prolog development system for Sun Microsystems Inc platforms: it includes Carmen, a facility which generates SunView or X11R4user interface code.

In the UK, the University of Salford Computing Centre's Salford Software Marketing Ltd has released a Unix version of its FTN77 Fortran compiler.

Dutch software house Uniface's multiplatform database development system is now available on Sun Microsystems Inc Sparcstations: it allows users to access data from Ingres, Oracle and Sybase databases simultaneously.

Susan Kelly Barnes, NeXT Computer Inc co-founder - with Steve Jobs and her husband Bud Tribble - is quitting her post as chief financial officer at the company, where she was credited with raising NeXT's enormous war chest of venture capital, to join investment bankers Richard C Blum & Associates Inc "to strike a better balance" between her professional and personal life; Tribble remains the vice-president of software at NeXT.

Beaverton, Oregon-based FPS Computing has won Oxford Molecular Ltd, Oxford, UK over to its Sparc-based FPS 500 Series minisupercomputer, and the company, the first to be set up by Oxford University's technology transfer unit, will support its PIMMS molecular modelling software on the FPS 500: the software enables high-performance graphics on Sun Microsystems Inc Sparcstations to be coupled with the compute power of 500 Series machines to provide all the basic facilities required for effective drug design at the protein and molecular level, and the 500 Series is the only supercomputer licensed for PIMMS.

Mountain View, California-based Verity Inc's Topic text retrieval software is now available on IBM's RS/6000 systems - prices go from \$15,600 to \$150,000 depending on the number of networked users and data sources.

Softsel Computer Products Ltd, Brentford, Middlesex, has signed to distribute Motorola Co's Delat and MPC series 88000 RISC systems in the UK.

Great Plains Software, Fargo, North Dakota, is now offering Clearwater, Florida-based Snow Software Corp's Snow report writer as part of its Unix accounting software.

Sparc silicon makers' ability to get below 1 micron technology, (UX No 332), Cypress Semiconductor has just taken its first serious step towards achieving geometries of less than 0.3 micron, going out and buying an X-ray lithography wafer stepper system.

Trivoli Systems, the little Texas start-up that seems to be in the middle of the rapprochement between OSF and UI on the issue of systems management, (UX No 331), has got itself a new chief executive officer - Frank Moss, formerly of Lotus where his last job was vice president of its Consulting Services Group.

Liant Software has acquired the Oakland Group, an eight year-old Cambridge, Massachusetts-based software firm that provides development tools to C and C++ programmers. Terms were not disclosed.

Massively parallel house NCube has made its vice president of international operations Michael Meirer president and chief executive officer. While Meirer runs day-to-day operations, NCube chairman, co-founder and former president Stephen Colley will focus on the company's strategic technology development.

Rogue Wave is now shipping version 4.0 of its C++ class library, Tools.h++, reportedly the only foundation class library compatible with Windows 3.0: It can be combined with classes from CNS, Glockenspiel or Zinc and handles Strings, Dates, Times, Files, Btress, Smalltalk-like collection classes, Link Lists, Queues and Stacks.

Micronics has now signed Xecuts, the largest X-terminal reseller it has landed to date, to handle its X-terminals bundled with Asterix in the north east US: Micronics does not sell direct.

Golden Gate Ltd, Maidenhead, Berkshire, is now offering Corollary Inc's high-end Multiport subsystem, the Intel 80286-based 8X4GT, in the UK.

Microport Inc, Scotts Valley, California, is planning further enhancements to its "go faster" Unix System V/4.0, (UX No 322), which uses technology from ProLogic Inc, Somerset, New Jersey, for October, when the Intel binary compatibility standard for Unix is published: the long-time Unix distributor, with European distributors in Germany and Scandinavia, is currently lining up outlets in Spain, France and Italy, and is on the hunt for UK firms to distribute its products.

Got Unix problems? Well now there's a 900 number you can call in the US for answers. BMU Softworks, a Unix reseller in Reading, Pennsylvania, has staffed a tech-support hotline set up for both users and resellers. Cost is \$4 for the first minute, \$2.99 a minute thereafter. The number is 900 USA-UNIX of course.

One interesting result of the NCR takeover is that AT&T now joins the ranks of the rival Open Software Foundation - by the back door: NCR says it won't be giving up its membership of OSF so AT&T gets its card by default.

Latest news on the penetration of telecommunications and information technology in Eastern Europe has Czechoslovakia with 13 telephones per 100 of its 15.7m population - and a waiting list of 700,000. There are reckoned to be 1,000 mainframes and 400,000 personal computers in use there. In Hungary there are 10 telephones per 100 of the 10.56m population - with a waiting list of 600,000: Hungary has 600 mainframes, 500 minicomputers and 250,000 personal computers. Poland, with a population of 38m has seven telephones per 100 citizens with a 2.2m waiting list. It has 1,000 minicomputers and mainframes and 350,000 personal computers.

Borland didn't bother to tell us about it last week, but it seems that early last month it provided the Object Management Group with ObjectWindows, an object-orientated program interface that facilitates Windows programming. Borland, a long-time OMG member, wants to make the language-independent class library a standard. Borland, which is developing a C++ version of ObjectWindows, is expected to make it support Presentation Manager, Motif and other graphical user interfaces.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

22 MAY 1991

The weekly information newsletter for the UNIX ® community worldwide

London, May 20-24 1991

Number 334

NCR/ODI THROWS IN ITS LOT WITH HEWLETT-PACKARD/SUN IN OBJECT REQUEST BROKER SUBMISSION

There can surely be no doubt now that Hewlett-Packard's language-based approach to creating an object request broker will prevail. As hinted last week, (UX No 333), the NCR/ODI submission has joined forces with the Hewlett-Packard/Sun Distributed Object Management Facility. Fast and furious negotiations have been going on over the past few days as NCR has been evaluating what it stands to lose or gain by joining the "HyperDEC" submission and opposing the Distributed Object Management Facility. HyperDesk's Joe Forgione said that in the end the differences between DEC's Application Control Architecture and the NCR/ODI submission were too great to move together quickly. Furthermore, NCR's business interests via its licensing of NewWave clearly pointed in the HP direction. The main architectural difference between the two remaining submissions for the object request broker is that HyperDEC takes an application programming interface approach to the object request broker whereas the HP/Sun submission uses its Class Definition Language as a common compiler for implementing different object classes. The NCR/ODI and HP/Sun technologies will be combined by taking the Distributed Object Manager Facility architecture apart and giving different technical teams responsibility for the different object classes. The architecture will basically be split into three parts: source code program language access for C++, the handling of small, local transient objects, and the handling of meta data for the database - the last being the software layer lying between the database and different remote procedure calls. Tom Atwood, president of Object Design Inc, believes that this low-level interface directly handling communication between the application and the remote procedure call makes the Distributed Object Management Facility much easier for database vendors to work with than opposing technology. Sources within the Object Management Group community believe that the Distributed Object Management Facility is now so strong a submission that HyperDEC must either stand the embarrassment of losing or join its technology to the Distributed Object Management Facility. Forgione believes that there are benefits to both the Facility and the Application Control Architecture and that software developers and independent software vendors could end up using parts of both technologies. However, all those with technology in the ring now seem to be keen to bring the two architectural approaches together to provide interoperable applications. Recommendations for the technology will be given to the Object Management Group's Technical Committee at the Object World Conference in San Francisco at the beginning of June. If all remaining submissions can be pulled together this would be quite a feat both from the technological and the political viewpoints for the Object Management Group. Nevertheless, even if the Group was able to pull all these rival vendors together, both IBM and Microsoft have yet to weigh into the fray. Nobody is sure what Microsoft is up to although it seems most likely that it will throw itself in with DEC, but Sun, HP, NCR and Object Design Inc are definitely courting IBM. Any party interested in watching some of this courtship ritual should turn up at Comdex in Atlanta, Georgia this week where NCR and Object Design will be showing a distributed personal-computer-based object database using the DOMF object request broker protocol for handling remote procedure calls running on Windows, which NCR intends to put up on OS/2 - more on page two.

NCR UNVEILS PARALLEL-PROCESSING MONSTER

Despite the veil of its arranged marriage to AT&T Co now looming, it was business as usual for NCR last week as the Daytner launched its System 3600 parallel processing computer - level six in the seven-level System 3000 series introduced at the end of last year - details on page three.

IXI WINS NEW OEM DEAL FROM ICL

IXI Ltd is still on the trail of OEM deals for its X.desktop graphical desktop manager, and the latest is ICL, which has announced a worldwide licensing agreement with the UK, Cambridge-based company. X.desktop will now be available on both ICL's Sparc-based DRS 6000 and Intel-based DRS 3000 Unix lines. ICL sold 1,300 DRS 6000s into the commercial sector during its first year of release, and IXI sees the move as an important part of its efforts to conquer the European marketplace. Bull already takes X.desktop through the Open Desktop component on its ProStation workstations, but two other European majors - Olivetti and Siemens/Nixdorf - are still undeclared.

STARDENT UNVEILS OKI-BASED VISTRA DESKTOPS

As expected, Stardent Computer Inc, Concord, Massachusetts, last week launched a range of Intel Corp 80860 RISC-based desktop graphics Unix systems, the Visualisation Through RISC Acceleration - Vistra 800 series. The CPU element of the new machines - reckoned by Stardent to represent around one third of the system - is derived from Oki Electric's unannounced, but widely previewed OkiStation 730, which is built around a 40MHz i860 part, (UX Nos 302, 319). The series comes in three models, the 800, 800e and 800ex, rated at 31 MIPS, 11.4 MFLOPS and 26 SPECmarks. Each comes with from 16Mb to 64Mb RAM, 3.5" floppy drive, 200Mb or 400Mb disk, six SCSI ports, run OSF/Motif, Stardent's Application Visualisation System and its implementation of Unix V.4. The 16-bit colour 800 and 24-bit colour 800e are rated at 33,000 polygons and 260,000 three-dimensional vectors per-second. The high-end, 24-bit colour 800ex incorporates two additional i860s and is claimed to perform 90,000 polygons and 500,000 three-dimensional vectors per-second. The 800 ships next month, the 800e and 800ex from September. With 32Mb RAM, 400Mb disk and a 19" colour monitor, prices go from £23,000, £26,230 and £35,800 respectively. Kubota Corp, Stardent's largest investor, will manufacture the boxes, and will also market the things in Asia in a few months time. At the same time Stardent also joined the Mass860 Intel i860 supporters club, which, like others in the genre, encourages software developers to port their applications to the part, and ensures that systems comply to an application binary interface standard for the processor.

INTERACTIVE SHIPS V.4 - PREPARES FOR "UNIX LITE"

Interactive President and CEO Dennis Peck was in London last week, and revealed that the company's System V.4 release is now shipping, initially to Intel Corp's Unix SVR4 software customer base. The product, based on Unix System V.4 Release 3, will ship generally from the middle of June. OSF/Motif will be offered as well as the Open Look graphical user interface. Interactive value-added will include DOS to Unix capability and Portable NetWare later this year. Peck also said that Interactive would launch the long-awaited "Unix Lite" desktop Unix early next year, an all graphical, drag and drop version specially cut down for PCs with less memory. According to Peck, the version has been given the internal development name of Unix Easy, due to built-in features to make it easier to use and install. Peck claimed the desktop market for Unix is all set to explode, with Intel forecasting sales of 12-14m 386s and 486s next year - implying 1.3 million Unix sales if only 10% of those run Unix.

...AS KODAK BUILDS UP FOR UNIX-BASED DESKTOP IMAGING

US press reports suggest that Kodak will be previewing a photofinisher workstation at the Interactive developers conference next month (to be held at Hollywood's Universal Studios from June 2nd), and Peck confirmed that a new generation of Unix-based imaging products would begin coming out of Kodak towards the end of this year, and in the first quarter of next. Kodak expects the desktop colour imaging market to be worth some \$7 billion by 1993, and it wants to be prepared. It has already released Photo CD through Interactive, which allows colour images to be stored and accessed in CD format, and it is to use Interactive's software distribution skills to push the technology onto the market. Next year, Interactive will publish both the source and documentation of SVR4 on CD-ROM, and will have a version of the package that includes a CD Reader bundled in. Longer term, Interactive is planning a desktop colour imaging release of SVR4, which will include all the drivers necessary for imaging and colour peripherals, such as scanners, printers, fax etc, along with accessories and toolkits. Colour management software, which will automatically adjust colour to suit the different properties of the various peripherals and monitors attached, will also be included. The object is to tie in with local photo finishers, so that photographic quality images can be supplied and accessed on low-cost CD format and transmitted between different machines - colour space algorithms that allow this have already been put into the public domain by Kodak and are part of Adobe's Level-2 Postscript implementation. The image version of SVR4 will be released late in 1992 or early 1993, and "will be the glue that binds together all the colour peripheral devices out there" said Peck.

DEC ADDS \$6,000 DECpc 433

Further compounding Compaq Computer Corp's problems, Digital Equipment Corp has now formally launched its onslaught onto the US personal computer market with the headline item being the DECpc 433, built for it by Intel Corp - reportedly because Intel could do the complex machine more cheaply than its principal OEM supplier Tandy Corp - coming in at \$6,000 where Compaq charges \$11,000 for a similar configuration. Describing it as "a power user's dream machine", DEC says it can reproduce graphics with greater clarity than any comparable product. The Triumph-Adler Workstations were announced as the DECpc 320sx for the 6lbs model at \$4,900, the DECpc333 for the 11 lbs one at \$6,450, and the DECpc 433 T, a 27" tall desktop machine from Tandy Corp. DEC will sell the machines only direct and via its authorised distributors - but that will reach a substantial part of Compaq's core customer base. Key added value of the knockout 33MHz 80486-based workstation is the graphics subsystem, which comes from Sunnyvale, California-based Appian Technology Inc. This uses Texas Instruments Inc's TMS34020 Graphics System Processor and Appian's software interface and drivers "to provide the highest graphics performance available on a personal computer". It supports high quality, fixed-frequency 1,280 by 1,024 monitors in both that mode and in standard 640 by 480 by use of its proprietary VGA Grabber technology. Only slight passing mention was made of the machines running Unix in the fine print of one of the press releases. But the one box DEC openly declared would now eat DEC's dust is the Sun IPC, two-thirds more expensive, it was said.

NOW MITSUBISHI ADOPTS THE HEWLETT-PACKARD RISC

Mitsubishi Electric Corp last week announced that it would be the second Japanese company - Hitachi Ltd was the first - to offer Unix machines built around the Hewlett-Packard Co Precision Architecture RISC. It appears that Mitsubishi will be buying the machines OEM, and it is to sell the workstations at prices ranging from the equivalent of some \$16,500 to \$62,500. Mitsubishi is aiming to get more than 15,000 away over three years, implying business in the low hundreds of millions of dollars for Hewlett-Packard. It will offer the HP-UX implementation of Unix on the machines, and will also work with the Cupertino company on Unix software and technology. This month, Mitsubishi ended mainframe development and agreed to buy ES/9121s and operating software OEM from IBM Japan Ltd.

CRAY COMPUTER AHEAD OF NEW SCHEDULE WITH GaAs CRAY-3...

Cray Computer Corp, Colorado Springs, Colorado has been pipped to market by Convex Computer Corp with the first Gallium Arsenide-based supercomputer, but the company says that it will ship its first \$30m, 16-processor GaAs Cray-3 supercomputer to the US Department of Energy's Lawrence Livermore Laboratory in Livermore, California this year. The company told shareholders at the annual meeting that making its own GaAs circuits, increasing processor production timetables and the fact that it encountered few problems during system tests helped speed the delivery. Most of what remains for the company's first sale involves interconnecting the computer's 200 modules for each of the 16 processors and then testing the completed machine. "We're much further ahead than we expected, but we clearly have a lot of work still to do," the firm said.

...FURY AT LOSS OF KEY CANADIAN ACCOUNT: HEADS ROLL

The top brass at Cray Research Inc is furious that the company has lost out at its biggest Canadian customer to NEC Corp with its SX-3 supercomputer, and the top management at the Canadian unit is out. The customer was the Canadian Atmospheric Environment Service, which currently has a Cray X-MP/28 and an X-MP-48. According to Electronic News, where NEC pitched its bid at \$47m, just under the centre's procurement budget, Cray complacently bid a Y-MP configuration at about twice the level of the budget. The value of the contract is expected to run to at least \$60m over its seven-year term. Fujitsu Ltd was the other losing bidder with its VP series machines. And, rubbing salt into the wounds, Convex Computer Corp has scored its first ever coup over Cray Research Inc, winning a £4.5m contract to replace the Cray X-MP/28 at the University of London Computer Centre with one of its new GaAs C3800s - a four processor C3840.

HP SPURNS PEACE STRATEGY IN PURSUIT OF TOTAL VICTORY

Attempts were immediately made last week to head off the coming clash between HP/Sun - and now NCR - versus Digital paired with little Hyperdesk, see front page. But for the staunch opposition of HP, sources at the meetings said, there would have been an agreement to consolidate the technology of each of the five surviving contributors into one submission, avoiding what could become a highly divisive run-off. The terms of such an agreement would have had all the parties supporting the HP/Sun Class Definition Language, CDL, (UX No 323), with application programming interfaces provided for the Hyperdesk and DEC technologies. HP, however, which wants a clear run at total victory, (UX No 333), was reportedly adamant in opposing any such rapprochement. And Sun, who initially supported the agreement, withdrew its backing after a conference call with its Mountain View, California headquarters. With the choices now down to only two submissions, the May 28 vote, intended to do the same thing, has been scrubbed and there will be only one more vote, this time in early June. The secret ballot debate of two weeks ago (UX No 333) has been resolved, reportedly by OMG's lawyers who advised making it secret. Although the decision still had to be approved by the OMG task force at press time, it is believed the OMG board has made its wishes known so that the June vote may be - or at least appear to be - unswayed by pure business considerations.

NCR ROLLS OUT ITS PARALLEL LINES

Just a week after it agreed to be purchased by AT&T, NCR, the fifth largest computer manufacturer in the US, announced its System 3600 parallel processing computer. The 3600 comes out of a joint development agreement with Teradata Corp, Los Angeles, and is being touted by the firm as the most powerful general purpose, open systems computer currently available. Initially delivering 2,000 MIPS - 10,000 MIPS by the middle of next year - the 3600 comes with up to 288 Intel Corp 80486 processors, acting as Application Processors or Access Module Processors. Up to 36 tightly-coupled APs, with from two-to-eight 50MHz 80486s parts, and up to 512Mb memory on each AP, can be configured in a 3600. Teradata's contribution, the AMP back-end database engine and software, utilizes 33MHz 80486 parts, and handles the interfacing between the APs and disk subsystems, which currently support 300Gb data, a figure set rise to 1,000Gb by the middle of next year. Each AP has six Micro Channel Architecture slots - the AMPs can be configured with up to 360 SCSI ports. The 3600 runs the multi-processing version of Unix V.4 developed by NCR, Intel and others, that Unix System Laboratories will next month release to its members as SVR4/MP, as defined by Unix International's RoadMap for Unix. In addition to Teradata's parallel database software, the 3600, which, it is claimed, will be capable of performing 1,200 transactions per-second by the middle of next year, supports the Sybase and Ingres relational databases, as well as NCR's Top End transaction processing monitor. Unveiled back in March, Top End is currently installed at pilot sites in the US, but as yet no-one is using it in the UK. An entry-level 3600, with two APs, eight AMPs and 20Gb hard disk comes in at £900,000 - a mid-range configuration with eight front-ends, 32 back-ends and 160Gb disk is priced at £4m. Ships begin in October with volume deliveries expected by January of next year. The 4.8m transistor, 50MHz 80486 part that NCR has already begun receiving from Intel is claimed to deliver 40 MIPS. NCR, which has also been working with Intel's 80860 part, looks close to announcing its RISC intentions, although it says no commercial decision has yet been made. Next System 3000 deliveries, set for sometime next year, will be the 3125 notepad - which will be announced next month - and top-end 3700, which will initially come with 100Gb memory, 1,000Gb disk, deliver 100,000 MIPS and perform 60,000 transactions per-second. NCR officials present at the launch would not comment about the future shape of the company in the light of the AT&T takeover, but said that the transition teams set up to oversee the integration of the two companys would also be looking at conflicts between the two companys' respective hardware and software products.

MICROSOFT HANDS LAN MANAGER FOR UNIX OVER TO AT&T

Microsoft Corp has handed over development of LAN Manager for Unix - originally conceived with Hewlett-Packard Co - to AT&T Bell Laboratories, which will become responsible for development of future Unix versions of the portable network operating system that is based on OS/2 LAN Manager. The agreement is intended to help ensure continued consistency and compatibility between LAN Manager for OS/2 and LAN Manager for Unix in terms of application programming interfaces, interoperability, features and functions. Both AT&T and Microsoft will be able to license and promote the jointly developed LAN Manager for Unix worldwide to hardware manufacturers and independent software vendors. AT&T Computer Systems intends to market it as a "premier component" of its StarGroup Software. However, in its efforts to tidy up development and marketing of LAN Manager, Microsoft has got Hewlett-Packard Co's agreement that it will no longer supply its HP LAN Manager for OS/2 beyond the present 1.1 release, but that it will continue to sell and enhance its existing HP LAN Manager/X for Unix systems, in competition with the upcoming AT&T version. Microsoft is committed to adding TCP/IP and Arpanet support in a future version of LAN Manager, and has authorised Microsoft-trained Hewlett-Packard people to support its LAN Manager, Windows, MS-DOS, OS/2 and SQL Server worldwide.

UNIX INTERANTIONAL'S ATLAS SPEC

TO BE REVEALED NEXT MONTH...

Initial specifications for Unix International's distributed computing platform - Atlas - will be made public next month, according to European manager director Scott Hansen, (UX No 328). ICL, Unix System Labs, Sun, AT&T, Ingres and Oracle are all said to be involved in the effort, together with several undisclosed, non-UI members. The technology, reckoned to address a wider set of distributed requirements than the Open Software Foundation's Distributed Computing Environment, will not demand Unix V.4 as a pre-requisite. As far as the Advanced Computing Environment, ACE, consortium is concerned, Hansen is confident that the Santa Cruz Operation will come around to supporting Unix V.4 in its OSF/1 and Ultrix-based Open Desktop operating system that will run on ACE's MIPS Computer Systems-based architecture. For example, if SCO wants to continue its work with the European Commission, it will have to offer some kind of Unix V.4 compatibility, as the EC has now standardised on V.4 for its client/server architectures, says Hansen. Looking down UI's RoadMap for Unix, Hansen says the initial multi-processing extensions to Unix V.4 - SVR4/MP - will be delivered to UI members from next month. Further on, the 'Golden Master Binary' desktop implementation of Unix V.4, which is being scaled down for systems with as little as 4Mb RAM and 40Mb disk, will be offered in both Open Look and Motif versions as standard, (UX No 328). In Europe, UI is currently setting up a series of user councils at the behest of different sectors of industry. The councils, representing for example petroleum, electrical and banking corporations, will get a chance to review upcoming Unix technologies, such as Atlas, and make recommendations. Two councils will be up and running by the end of the summer, five or six others are planned for next year.

...AS UNIX SYSTEM LABS NAMES BOARD OF DIRECTORS

Eight members have been elected to Unix System Laboratories Inc's board of directors by AT&T and the companies that bought shareholdings in the firm earlier this year, (UX No 325). Those elected by the new investors are Franco Agostinucci, vice president of Olivetti Systems and Networks; Takeshi Maruyama, general manager of the open systems group at Fujitsu; and Raymond Noorda, president of Novell Inc. Those elected by AT&T are Richard Bodman, vice president of AT&T corporate strategy & development; James Clark, vice president of high performance and fault tolerant systems; Daniel Stanzione, vice president of operations systems at AT&T Network Systems; and Robert Kavner, group executive, AT&T Data Systems, who was also elected chairman of the board at its first meeting at the beginning of the month. USL president Larry Dooling also has a seat on the board. A ninth director, independent of AT&T and its investors, has yet to be appointed. USL has also set up two new advisory committees: a technology and planning committee chaired by Andy Roberts of ICL is charged with providing five-to-ten-year technology change assessments to help USL do long-range system software planning; a marketing and distribution committee will advise USL on how to achieve the widest possible distribution of Unix V.4 and other USL products in the marketplace.

BUSINESSLAND ON BRINK OF CHAPTER 11 FILING

Fallen retailer Businessland Inc - it has shut all its retail outlets now and markets mainly to big companies - says it is considering filing for Chapter 11 bankruptcy protection after its daunting \$43m third quarter loss. NeXT Computer Inc simultaneously announced that it was terminating its unsuccessful sales agreement with Businessland, whose only other recourse is to sell the company, with Electronic Data Systems Corp about the only possible buyer to have been named.

SIEMSNS-NIXDORF RELEASES**UNIX-BASED FINANCIAL PACKAGE**

Siemens Nixdorf Information Systems Ltd, Bracknell, Berkshire, has introduced a knowledge-based financial management system for large Unix systems running Informix, Ingres or Oracle relational databases. The core accounting module of SN Financials has been picked up from an undisclosed UK financial software house, with which SNI has worked to add the knowledge base. SNI says it allows users to tailor applications without having to re-program. The multi-lingual, multi-currency package, written in C, is being targeted at mainframe customers downsizing to open systems strategies. It requires 64Mb memory and 4Gb disk to run, supports OSF/Motif graphical user interface and is aimed especially at multi-processing Unix systems. Available now in the UK - other SNI subsidiaries will offer it when required - prices start at £100,000.

METIER MANAGEMENT BECOMES LUCAS MANAGEMENT SYSTEMS

Metier Management Systems Ltd, Hayes, Middlesex, is changing its name, adopting that of its new parent, Lucas Industries plc, Solihull, West Midlands, which acquired the project management software house from Lockheed in April of last year. Metier, and its 50 subsidiaries round the world, will go under the name of Lucas Management Systems from next month. Metier's managing director, Chris Barfield, says new validation, testing and quality assurance features will be added to its flagship Artemis project management software over the next six months. In addition the firm will be buying-in computer-aided design and other software from third parties for use with Artemis via distribution and bundling agreements. Lucas itself now uses Artemis, although the firm has no overall corporate information technology strategy. Although Unix remains a fairly small component of Metier's overall business, platforms now supporting Artemis include IBM's RS/6000, HP 700 Snakes, Sun Sparcs-tations, Toshiba Sparc systems, DEC Ultrix and ICL's DRS6000 - on which it has recently won a Home Office contract. Unix databases supported include Ingres and Oracle. In addition, Metier has just signed a deal with Bull and signed up another, undisclosed German car manufacturer for Artemis - Volkswagen and BMW are already users. The firm has also snapped up Irvine, California, and Philadelphia-based K&H - claimed to be the the oldest project management software company in the world - to provide local area networking and financial management expertise, which it will add to Artemis.

PORTSMOUTH AND SUNDERLAND MOVE TO UNIX WITH DANSK DATA PUBLISHING SYSTEM

Portsmouth and Sunderland Newspapers has installed a £1m, Unix-based publishing system from Danish manufacturer Dansk Data Electronic which will replace a ten year-old DEC editorial system currently in use. The DDE system incorporates full on-screen page make-up and is reckoned to be the first of its kind installed in the UK. Portsmouth and Sunderland pioneered direct input techniques in the regional press and publishes The News, a Portsmouth daily evening paper, together with several weeklies. The changeover will take around a year, and the company is currently looking for a way to bridge the two systems. First issues produced on the new system - weeklies - will appear in around two weeks time, according to associate editor Peter Thompson. By the time production of The News is incorporated onto the DDE machine, expected next year, journalists will also have access to electronic cuttings via a new library system.

COMDISCO BRINGS UNIX VERSATILE NETWORK DESIGN SOFTWARE TO EUROPEAN MARKET

Comdisco Inc, Rosemount, Illinois has announced European availability of BONEs, a software package for the design and simulation of networks, from local nets to mobile phone systems. Aimed at network engineers, the system - Block Oriented Network Simulator is what the name stands for - which runs on Sun Microsystems Inc and Digital Equipment Corp workstations, draws the network as a block diagram on screen. Comdisco says the program then "simulates the behaviour of the system" under a variety of conditions to predict events such as traffic change delays and node failure. Designers can define their own protocols to BONEs, either from scratch or by modifying existing definitions. A useful way, says Comdisco, to compare proprietary and standard systems. Network models supported include Ethernet, Token Ring, FDDI, X25 and Network File System. BONEs translates the completed program model into a C program. BONEs can also interface to protocol analysers, such as Hewlett Packard Co's LanProbe or Network General Inc's Sniffer to process real network traffic. Networks types that can be simulated using BONEs include local and wide area nets, ISDN networks, packet radio, packet and circuit switched networks and computer buses and architecture. The software, which first shipped in the US a year ago and now has around 200 users worldwide, including the University of California and Hughes Aircraft Co, is available for an average UK price of £15,000 - that's for a couple of users and a whole library of software. In the UK, users so far include Bristol University's Centre of Communication Studies.

INTERGRAPH GETS IN ON KUWAITI REBUILDING ACT

Intergraph Corp is hoping to cash in on the rebuilding of Kuwait City with its digital database, which maps the entire infrastructure of the ravaged city - prior to the invasion by Iraq. The Kuwaiti government has given permission for Intergraph to distribute the database to firms that win contracts for the reconstruction of the country. Data collection for the system was undertaken by the Japanese firm Mitsui, and was completed in June 1990, just prior to the invasion. The Kuwaiti government bought an initial Intergraph system back in 1983 for use in its massive modernisation project, but the \$5m system was carried off by Iraqis during their occupation. The Kuwaitis have asked Intergraph to put together a proposal for a replacement system which consists of a VAX-based server, Intergraph Unix workstations, a mapping geographic information system and land records management software. It will also tender software for architecture, engineering and construction that is compatible with the municipal database and allows data to be seamlessly transferred between different reconstruction projects. Intergraph estimates that it may receive up to \$15m over the next three years from sales of software and workstations. Map data is available in a public domain graphics file format, with an optional Informix database containing non-graphic descriptions linked to map graphics - one-kilometre increments start at \$210. The US Army Corps of Engineers is using more than 2,700 maps generated from the database to assess war damage. Intergraph also says its is reopening its office in Kuwait, no doubt to await a rush of orders.

X/OPEN READIES COMMUNICATIONS GUIDE

X/Open says that its CoMix initiative, with which it aims to defuse potentially conflicting communications choices between TCP/IP and OSI by network planners, should be completed by the autumn, when it expects to publish its Guide to IPS - OSI Coexistence and Migration. X/Open's manager of connectivity strategy says "we are not making judgements about when OSI will supplant TCP/IP. We believe it will in the long term, but our primary interest is in guiding users who face considerable practical problems today."

IBM BITES THE BULLET ON RS/6000 PRICING, CUTS TAGS TO THE BARGAIN BASEMENT LEVEL

IBM Corp is claiming that significant performance increases across the RS/6000 family are due to a new compiler, AIX XL Fortran Compiler/6000 Version 2 Release 2, which includes a new release of AIX XL Fortran Run Time Environment/6000. The company claims that in development tests with the new Fortran compiler, the low-end Powerstation 320H achieved 27% improvement in combined SPECmark and a 48% increase for SPECfp, SPEC floating point, while the high-end Powerstation 550 saw a 28% improvement in combined SPECmark and a 52% gain in SPECfp. Large price reductions apply to the RS/6000 520, 530 and 550 desk-side systems; the Powerstation 730 Supergraphics workstation; and the Powerserver 930 and 950 rack-mounted systems, (UX No 333). Prices on the 8-bit and 24-bit colour graphics adaptors have also been reduced, and the 8-bit adaptor is now \$2,320, or with optional Z-buffer solid rendering feature, \$4,000, while the 24-bit adaptor is \$4,520, or \$6,195 with the Z-buffer option. Memory capacity enhancements double the amount of memory that comes standard for four models - the 520, now with 16Mb, the 530 and 930 have 32Mb and the 950 has 64Mb. Disk storage is doubled on the Powerserver 950, with 1.7Gb now standard, and disk storage for the 320H desktop system is increased to 400Mb from 160Mb. The price, memory and disk storage enhancements are effective immediately, applying to systems currently on order as well. The new release of the AIX XL Fortran Compiler/6000 products will be available in September and customers using the current release will automatically receive the new version at no charge. The 320H costs \$11,750, the 520 is \$21,500, a 530 is \$31,500 and a 550 is \$52,500. Previously, the systems cost \$11,750, \$22,330, \$38,410 and \$130,000 respectively. The 730 is now \$48,275, a 930 is \$59,500 and a 950 costs \$94,500, formerly \$62,625, \$61,910, \$146,640 and \$146,640. In the UK, the price changes start with the 320H at £8,163, down from £9,399. The 520 stays at £16,327, and the 530 is reduced to £26,001 from £27,211. The 540, 550 and 730 are now £38,094, £42,327 and £37,490, down from £65,106, £91,795 and £40,035 respectively. The 930 and 950 are £42,327 and £69,537, reduced from £43,537 and £108,626 in that order. The 320H, 930 and 950 have additional memory capacity - 400Mb, 670Mb, and 1.7Gb - but the rest are unchanged.

THE DEBT BURDEN STARTS TO CHAFE AS PRIME SETS ANOTHER 800 JOB CUTS

Prime Computer Inc is determined to prove wrong the conventional wisdom that only with five years of sunny skies unclouded by recession could the ludicrously leveraged buyout of the company make any sense and bring a worthwhile return to holders of the stub equity, and for the first year or so, things didn't seem to be going too badly, even if it didn't look that way to the near 2,000 employees that lost their jobs last year. The net loss for 1990 was trimmed to \$135m from \$277m a year earlier and turnover actually increased 4.7% to \$1,590m. But the company did 65% of its business outside the US, most of it in Europe - where in contrast to US users, many of its customers are no doubt quite unaware of the significance of the onerous financial burden that has been placed on the company - and European markets are now either already in recession or heading in that direction. The rise in the value of the dollar against the Exchange Rate Mechanism currencies isn't helping either, all of which means that the company is going to have to cut another 800 jobs from its 8,700-strong workforce, although it hopes that many of the cuts can be achieved by attrition. What makes matters worse for the company is that it has to wrestle with the problems of debt servicing just at a time when all its management attention needs to be focused on managing what would be a difficult and dangerous transition for a company - like Data General Corp - that didn't have to pay any particular heed to the state of its balance sheet. Prime is effectively starting from Ground Zero as it tries to manage the phasing out of its proprietary minicomputers and makes the switch to bought-in open systems: it has to persuade its customers that they should make the switch to Unix with Prime rather than with any one of a host of other companies, many with much more cash to spare for easing the pain of conversion. And on the Computervision side, it is moving to marketing its software without the hardware, which in the long-term is very likely the right thing to do, but in the short term threatens to knock a big hole in its volume. President John Shields told the Wall Street Journal he remains confident that Prime can generate the cash to service its debt.

NEWS ROUNDUP

There is some considerable confusion brewing in the UK over the distribution of RDI Computer Corp's BriteLite, the Sun Microsystems-compatible Sparc-based laptop. When development of the laptop was first mooted, a US company, Parity Inc, signed up as a sponsor for the project. PCS Ltd of Wakefield, Yorkshire, is the sole distributor for Parity in the UK, and, via this association, is offering the BriteLite with 8Mb RAM and 120Mb disk to end-users at a price of £7,000. However, the Basingstoke, Hampshire-based Unix distributor Frontline Distribution Ltd, has exclusive distribution rights for RDI in the UK. When the BriteLite came to fruition, RDI appointed US firm EMS - which also has offices in the UK - as its worldwide marketing partner, and EMS subsequently gave the nod to Frontline to go ahead and sell the BriteLite in the UK. Frontline sells exclusively to resellers, and is offering the laptop to them at £8,900 - almost £2,000 more expensive for the same machine, in the same configuration, than the deal from PCS. You pay your money and take your choice.

Bull is moving into DEC territory with some RISC-based workstations it has waiting to be announced - the MIPS-based machines will undoubtedly tie-in with Bull's existing Prostation range, not to mention the ACE initiative, by offering at least the future promise of running SCO's Open Desktop package, currently being ported to MIPS.

From next year, Sun Microsystems Inc workstations will be fitted out with Intel Corp's i750 DVI audiovisual processor, Ethernet video-telephone facilities and an ISDN - Integrated Services Digital Network - port, according to Sun's Wayne Rosen: but there is much more to come, he says, with multimedia capabilities that will appear on "the mother of all motherboards," expected sometime in 1993.

Not content to rest on its laurels, Hewlett-Packard is said to be readying an entry-level, 25MHz, Motorola 68040-based workstation rated at 22 MIPS that'll come in under \$5,000 - and if that wasn't enough, the firm is also reported to be working on a low-end version of its recently launched Series 700 Snakes priced at under \$10,000 and performing at 110 MIPS: it's dubbed the Bushwhacker, according to Electronic News.

Kubota Computer Inc, which has taken over responsibility for development and manufacturing of Stardent Computer Inc's MIPS Computer Systems-based RISC systems, has come out with the RS3330 Unix workstation in Japan. Built around MIPS' R3000A part, it runs MIPS' RISC/OS 4.5 Unix implementation, delivers 4.6 MFLOPS, 25.1 SPECmarks and comes with up to 128Mb RAM and 600Mb disk. With a 17" mono screen prices start at around £8,200.

Acer America Corp, San Jose, has launched the AcerFrame 3000SP33, the first in a family of 80486-based systems designed for departmental client-server environments. Packaged in double wide tower housing, a single processor implementation uses the Intel 80486 running at 33MHz. The AcerFrame 3000SP33 has a 128Kb secondary write-back cache to achieve a system hit rate claimed to be 95% - it uses an EISA system bus and there are eight EISA expansion slots. It is designed to serve a workgroup between eight and 64 concurrent users, and several environments, including Novell Inc NetWare, Santa Cruz Operation Inc and Interactive Systems Corp Unix, Banyan Systems Inc Vines, and OS/2 Lan Manager. Its 8Mb of memory is expandable to 64Mb, there is a 5.25" floppy drive and support for eight 5.25" half-height drives - the system is available now at \$12,000.

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Correction: Unigram.X incorrectly reported that Intrix Systems Group filed for bankruptcy (UX Nos 332 & 333). That is not true. Intrix officials assure us that the company is not only doing business but is financially sound, well-funded and is in fact growing both domestically and internationally. Intrix, which markets the ISG*Titan line of integrated distribution, manufacturing and accounting software, recently acquired Western Office Systems, a California VAR and Semenix, a progress software development company.

Chorus Systemes, the French microkernel Unix house, got an additional \$3m in venture capital money last week which it intends to use for international marketing and increased research and development. The investors are a mix of both new and existing investors including Credit Lyonnais, Banque Hermet, Banque Nationale de Paris, Innovacom, the venture subsidiary of France Telecom and Sofinnova Venture, the Paris/San Francisco venture capital firm.

Pick Systems has closed its London and Paris offices and has moved its European headquarters back across the water to Irvine, California.

In Europe, Memorex Telex is to begin offering Interactive Systems' Unix operating system products across its line of Intel iAPX-86-based personal computers following an agreement signed recently.

Star Technologies Inc, Sterling, Virginia, says its Sparc-based Star 910/VP distributed supercomputer now supports Denver, Colorado-based Accelr8 Technology Corp's VAX/VMS software connectivity tools and Hanover, Maryland-based Ki Research's DECnet and LAT emulation products.

SoftSource, Bellingham, Washington, has released Drawing Librarian - Unix, a high-speed viewing and management package for computer-aided design drawings generated by AutoCAD: running on Digital's DECstations it costs \$500 per workstation, a version for Data General's AViiON workstations is currently in beta test and a Sun Sparcstation implementation will follow.

FPS Computing of Beaverton, Oregon has announced that the Korea Ocean Research And Development Institute has installed a \$1.1m, 500 Series Sparc supercomputer: the institute located in Ansan, near Seoul, Korea, will use the system for fluid dynamic ocean modeling to map and study ocean currents and for other marine research.

Allan Snell, Solbourne's director of third-party marketing and the man responsible for the Solbourne/Sun relationship is jumping ship to go to Sun's new subsidiary Sunsoft as director of business development: he will be responsible for acquiring all of the next generation technologies that will go into SunOS.

Pencom Software has come out with a low-cost device driver development kit for the RS/6000. The \$500 package includes an AIX SCSI kernel extension, the required Object Data Manager configuration methods, an installation procedure using an AIX Install program and the makefiles necessary to build and configure an AIX 3.1 driver.

Telesoft is marketing version 2.0 of its GUI development tool, TeleUse the user interface management system for interactive development of Motif user interfaces. The upgrade includes new features including the generation of C and OSF user interface language; an optional Porting Kit to allow TeleUse-developed applications to be executed on any platform supporting Motif, support for Motif 1.1 and full support of X11R4. Deliveries start in July for Sparc, RS/6000s and DECstation platforms. Price is \$7,500 per user in North America. The optional Porting Kit, available now, can be licensed for \$3,500.

Sherpa has raised \$5.1m in venture capital backing, double the amount it sought, the company said. The financing came from nine venture firms including Technoventure Management in Germany, Abingworth Ltd in London and FinoVelec in France. The company markets product information management (PIM) software and has alliances with DEC, IBM, Sun and Hewlett-Packard.

nCube has opened an office in Paris, reallocating resources from its London facility and giving it a more central Western European operation site: Phillipe Gire, former marketing director of Convex France, will manage things.

Connecticut-based Firesign Software has 3270ix emulation software, designed to give RS/6000 users access to IBM Mainframe and AIX workstation applications on a single screen. The software offers full SNA connectivity, compliance with SAA and features that allow users to design their own communications systems. Pricing starts at \$800.

Digiboard has announced DigiFax, a PC-based Unix hardware and software facsimile solution. Features include multipoint broadcasting, delayed scheduling and automatic cover sheet generation. The system is composed of a DigiFax software package and offers one or two fax modems, maximised for multiuser/multitasking environments, and a buffered parallel port on a single communications board. The software, already shipping and priced between \$500 and \$800, interfaces directly to WP and spreadsheet packages and sends documents from the terminal on command. The boards are due out in August. A one channel version will cost \$1,000; a two channel \$1,500.

The Open Software Foundation has opened a new operations centre in Brussels, where Alain Fastré, its newly-appointed director of European operations, manager of communications, Mark Laureys, and manager of customer services, Yair Melamud, will be based - OSF's European engineering group remains in Munich.

Stratus Computer Inc has signed a \$1.2m deal with CVS of Woonsocket, Rhode Island for a Stratus XA2000 Continuous Processing System to run on-line applications for its 1,300-store chain: applications will include credit card authorisation, automated health insurance claims verification and adjudication, an on-line central pharmacy system and store management applications.

IBM Espana SA and the Spanish software company Centro de Calculo de Sabadell SA have signed a co-operation agreement aimed mainly at the distribution sector and with the purpose of selling AIX Unix systems with point-of-sale terminals: the first phase of the co-operation includes the product Marketcast, which is a management software package for the distribution sector, with point-of-sale systems designed to read bar codes; the software will be sold as a turnkey system with the RS/6000 and the IBM 4680 and 4684 point-of-sale terminals.

Mountain View, California-based Verity Inc's Topic text retrieval software is now available on IBM's RS/6000 systems at from \$15,600 to \$150,000 depending on the number of networked users and data sources.

We bumped into a SCO executive at the DEC PC unveiling last week - see page two - and, adding confusion to obscurity, he described ACE's Unix which SCO is building as a superset of the current SCO Open Desktop - not Ultrix, not OSF/1.

For the diary: they're going to throw a supercomputer expo called Supercomputing USA/Pacific '91 at the Santa Clara Convention Center in California on June 19-21, a follow-on to Supercomputing Japan held a couple of weeks ago in Tokyo, reportedly drawing over 10,000 attendees.

This week they're having the annual Executive Uniform Symposium in Santa Barbara, California, a worthwhile event but probably better when it's not scheduled to butt head-to-head with Comdex Spring which is also this week. Don't the Uniform folks know Unix is supposed to be trying to break into distribution channels this year?

Many of the best stories from the Gulf War have yet to be told, and one such comes from Santa Cruz Operation Inc, whose customer service line received a call from a soldier who had a problem with Xenix on his laptop computer: the service people advised him to log into the company's bulletin board system where he could pick up and download the fix, which he duly did and went merrily on his way; nothing unusual in that - except that the guy prefaced his call by saying "Hi, I'm with the US Army - I'm calling from an M1 tank in the Saudi desert".

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

30 MAY 1991

The weekly information newsletter for the UNIX ® community worldwide

London, May 27-31 1991

Number 335

IXI TO TAKE ON HP NEW WAVE WITH OBJECT VERSION OF X.DESKTOP

Possibly the first customer for Westborough, Massachusetts-based HyperDesk Corp's Local Object Manager, its object-orientated development platform (see page five), is UK graphical user interface specialist IXI Ltd, Cambridge, which is hoping to steal a march over any potential competitors. IXI says it is already working on an object-orientated version of its X.desktop manager with which it will challenge Hewlett-Packard's New Wave object environment. Although X.desktop already gives the user graphical pictures of utilities and services available, their use is ultimately limited by the fact that they are no more than Unix files. IXI's aim is to allow users of X.desktop to manipulate objects on the screen in much the same way as they are conceptualised and used in the real world. IXI sees object-orientated technology, embryonic though it maybe, as crucial to its future plans. Indeed IXI president Ray Anderson believes that the struggle for a standard way of doing object-orientation - which is now being played out under the gaze if not control of the OMG, see page four - will ultimately prove more important than past industry struggles such as rows over the use of different programming languages or ways of doing networking. IXI would like to see a standard set, and although it is backing the HyperDEC horse, which it regards as the most dynamic and flexible, it is well aware that the Hewlett-Packard/Sun/NCR/ODI request broker may emerge victorious. In this eventuality Anderson says IXI will likely do an object-orientated version of X.desktop for that platform too. His nagging fear however is that there maybe a software company - or even two, perhaps - lurking around out there with their eyes on IXI's market, and already working on solutions that embrace both technologies - solutions that could quickly become standard technology, and impact on IXI's business. What's that in the shadows?

FIRST ACE COMMITTEE MEETING - DOWN TO SPECIFICS AT LAST

The Santa Cruz Operation hosted the first meeting of the ACE Technical Advisory Committee the week before last, surprising everybody by inviting not only the ACE Initiative companies but all their OEMs, including ACE outcasts Hewlett-Packard and IBM, who showed up if for nothing more than to gather intelligence. TAC, of course is supposed to look over SCO's shoulder and advise it on the construction of ACE's Unix package. Everything is supposed to be all very hush-hush, with attendees required to sign non-disclosures, and naturally, not talk about pricing lest the wrath of the anti-trust police descend on them. Compaq sent along John Paul and DEC sent Kurt Friedrich. For a group of 20-30 people, a potentially unproductive assembly, participants seemed generally pleased with the results. SCO apparently addressed many of the hard issued and even listened, and may have heard the feedback. The all-important front-end is one of those issues, and even SCO co-founder Doug Michels is now willing to admit that neither IXI nor Visix is currently robust or mature enough to suit. SCO will try to use as much of the OSF/1 code it gets from DEC for ACE (and DEC should be ready to turn a developer's kit over in a few weeks). It will also try to salvage the best features of the current Open Desktop, and move them into the ACE version. Items such as the embedded Informix database will doubtless be left behind and SQL hooks substituted. There will be desktop and server versions. Meanwhile, on the hardware front, the ARC specification is going to approach the architecture differently from the PC, where the hardware and the software are very, very close together. ARC is going to insert a firmware-based hardware access layer between the operating system and the hardware that is specific to each vendor and allows them to innovate and value add on the standard.

SUN'S V.4 "OUT BY YEAR-END" - MULTI-PROCESSORS DUE

Sun Microsystems Inc has been playing its Unix V.4 operating system cards pretty close to its chest since it declared an intention to go down that road, (UX No 304), but Sun officials in London last week revealed that the Sparc workstation builder will declare its hand in November or December this year with the release of SunOS 5.0, its implementation of Unix SVR4. By this time Sun will have its multi-processing offering, the Sparc-based Galaxy' system, (UX No 304), on the market - it's expected later this summer. Sun UK's Andrew Russell and John Coon revealed that the firm's entire range of Sparc-based server systems will be upgradable to the multi-processor platform via board-level swap-outs. The Galaxy is thought to be a two-tier affair, with a dual-processor offering based upon Cypress Semiconductor's 28.5 MIPS, CMOS Sparc to be followed by a two-to-eight processor system possibly using the 80 MIPS CMOS Sparc dubbed Lightning, being developed by LSI Logic, Metaflow Technologies and Hyundai Electronics, or a 40 MIPS Texas Instruments part. The thing will run Sun's implementation of the Unix SVR4 kernel with its own multi-processing extensions. Galaxy will not use superscalar Sparc technology. That will be implemented in workstations planned for next year. Both Texas Instruments, with its 40MHz, 80MIPS BiCMOS 'Viking' Sparc, and Cypress Semiconductor's 'Pinochle' Sparc, (UX No 316), are doing superscalar implementations of Sun's RISC part. Rumours of a new high-performance version of Sun's diskless Sparcstation SLC planned for June or July were denied, although the firm is adamant that it can get its workstation products down below the \$5,000 barrier. It maybe that it will wait until its new financial year, which begins on July 1, to announce new products which can kick into its revenue stream

DEC TO "RE-POSITION FOR OPENNESS" NEXT MONTH

DEC has slated June 3 as the day it will "re-position" itself as a company dedicated to the philosophy of open systems. The announcement, which goes by the name "Open Advantage," will include an array of new products, according to a spokeswoman.

NEWS ROUNDUP FROM EXECUTIVE UNIFORM

by Maureen O'Gara

OSF purse still full until end of 1992

The Open Software Foundation has just celebrated its third birthday, which means that the original funding pledges made at the consortium's historic foundation theoretically expire. However, according to vice president Ira Goldstein, back in November when OSF introduced OSF/1 (UX No 306) its founders all renewed their pledges and OSF has enough money to make it through the end of 1992 - it's not getting as much as it was though. Philips is no longer coughing up its share and the total amount has apparently been reduced by the amount of revenues OSF is generating from its licensing fees.

OSF-UI systems management peace falls by the wayside

The Open Software Foundation has rejected out of hand any rapprochement with rival consortium Unix International on the issue of systems management. As Unigram.X predicted it would (UX No 331), Unix International sent out peace feelers to OSF trying to get it to agree to a common systems management approach, believing that what it offered was a more substantive object-oriented answer than that outlined in OSF's current systems management Request For Technology. OSF vice president Ira Goldstein said that what Unix International put on the table was the technology being developed by Texas start-up Tivoli Systems, which Unix International seems to be relying on heavily for the systems management component of UI Atlas, its answer to OSF's Distributed Computing Environment (DCE). According to Goldstein, OSF told Unix International that it could take part in OSF's search for a Distributed Management Environment (DME), but that OSF would not abandon its cherished RFT methodology. Unix International for its part is believed to have rejected that proposal. Tivoli is a submitter to OSF's DME RFT, on which a decision is due by year-end.

ANDF decision due at Xhibition next month

OSF says that it will announce the winner of its Architecture Neutral Definition Format (ANDF) Request For Technology next month at Xhibition in California. OSF's decision was made six months ago but not made public pending getting the backing of the top computer vendors, IBM, Hewlett Packard, DEC, NCR (UX No 319). The ANDF RFT, OSF's solution to the shrink-wrapped software issue, has been atypical from the onset and will continue to be so. Only four submissions, coming from the UK's Royal Signals and Radar Establishment, Hewlett-Packard and the University of Virginia, Siemens/Nixdorf, and Peritas, were ever in the running - all of them apparently dependent on recompile principals (UX No 295, 308). OSF research and development vice president Ira Goldstein said that the major vendors were interested in ANDF but did not think it a priority, telling OSF they needed portable source code first. As a result, OSF has pushed the completion of ANDF out another two years, Goldstein said. However, OSF will supply its members with a series of ANDF "snapshots" during that time, starting with what is essentially a working prototype this summer. Goldstein told Unigram.X that programs of 100,000 lines of code have been moved across platforms via the ANDF selection with 97% of the "shrink-wrapped" code running as though it were active. OSF plans to recover most of the amount of its own investment in bringing the ANDF technology to fruition, with the selected vendor apparently bearing the brunt. Reference platforms envisioned are Intel and Mips under OSF/1, SCO Intel and Ultrix Mips. The supplier will have a SunOS/Sparc implementation. OSF is interested in rounding up four or five ISVs who will partner in the ANDF attempt.

AT&T code-free Mach 3.0 is now shipping to computer vendors

Carnegie Mellon's Mach 3.0, the version said to be free of AT&T code, is now shipping to computer firms and universities in the US, Europe and Japan, according to OSF vice president Ira Goldstein. Being AT&T-free, he said, no licence fees are owing to the creator of Unix. Goldstein described the software as "not being Unix" since it is based on a different set of algorithms. It will be interesting to see how AT&T's lawyers react to this unexpected turn of events, especially in light of Goldstein's admission that "everyone has seen AT&T code." The Free Software Foundation in Boston, Goldstein added, is now busily at work using Mach 3.0 for its version. Goldstein himself intends to use the Mach 3.0, a micro kernel approach, as the basis of what has come to be known as OSF/2, (UX No 304), having apparently rejected Chorus Systemes' operating system (the only known commercialised microkernel).

NCR & AT&T - common product lines by July 1, says Exley

A few weeks ago, AT&T computer chief Bob Kavner wrote a letter to AT&T's major accounts, telling them that all the AT&T software and systems NCR vowed to kill off if the merger ever went through would continue. But Kavner's apparently going to have to eat his words. Speaking at Executive Uniform in Santa Barbara last week, NCR's outgoing leader and head of the transition team Chuck Exley said that "rationalisation" was expected. As a matter of fact, he was going back to Dayton to find out what was going to be terminated. The object is to have a common product line by July 1, two months in advance of all the legal niceties being tidied up. Exley also said that the transition had found that 60% of the development efforts inside the merging companies were not duplicative. AT&T's Rhapsody, one of the products Exley had sworn to despatch before the merger was assured, was described last week as an "attractive product for the workgroup" as opposed to NCR's offering Cooperation, which was called an enterprise-wide solution. But NCR may prove tougher on the Tuxedo issue, another AT&T product for which it has little use. Exley said his own Top End was "a level above" Tuxedo as a Distributed Transport Monitor, and admitted that NCR was trying to get Unix Systems Laboratories to drop Tuxedo in favour of Top End. Reflecting on NCR's membership in OSF, Exley called it "not very active" and intended to get information. Remembering the spoiled "unity" talks of last year, he said that he himself had tried to act as a "healer" passing his hands over the warring factions, only to find the "OSF side a row of posts" at which point he gave up and let Kavner go it alone.

UI delays Atlas distributed framework for re-evaluation...

Unix International's long-awaited answer to OSF's user-luring Distributed Computing Environment (DCE) will be delayed still further: Unix International was expected to announce its Atlas framework next month, (UX No 331), but now they are re-evaluating it to see if everything is as solid as they think. Any set-back is a serious problem for Unix International whose own members may end up only paying lip service to the long-overdue thing.

...Opens Australasia office

As planned, Unix International has now officially opened an outpost in Singapore responsible for India, Australia, New Zealand and in fact all the Asian and south-east Asian countries except China and Japan, which will continue to be handled by its offices in Tokyo: Unix International wants to get joint marketing and R&D programs going with regional vendors and the academic and government bodies. Unix Systems Laboratories will also be staffing the office to provide support. Colin Fulton has been named general manager of Unix International (Pacific Basin).

ALTERNATIVE i860 SUPPORTERS' CLUB SPRINGS UP IN UK

UK firm, The Low Hanging Fruit Company Ltd, Cheltenham, Gloucestershire, is hoping to do for manufacturers and developers building hardware and software products around Intel Corp's 80860 - i860 - RISC part, what it believes the processor's official supporters' club - Mass860 - can't. Can't, because it's staffed by large companies, is non-commercial and therefore works too slowly, says LHFC's director Tim Worstall. The firm wants to act as a commercial clearing house, marketing and contact service for firms with i860-based products, to increase the flow of information - and sales - between them. Worstall reckons that there are now some 25 firms building Unix systems and personal computer add-in boards based upon the part, many compliant with Intel's application binary interface for the processor, some not. For instance, Indian firm Godrej & Boyce, Bombay, has an i860 workstation that is only little-known about - its CAD/CAM software runs on Sun's Sparc and the IBM RS/6000 in addition to the i860 - whilst UK firm Division, Chipping Sodbury, Avon, has a graphics acceleration software package that is claimed to double the graphics performance of the i860 for £3,000. LHFC is also offering an i860 port of Stardent Computer Inc's DORE three-dimensional graphics rendering environment from UK firm Myriad. "What we're doing is an adjunct to Mass860," says Worstall, "we started out doing direct marketing for the likes of NEC, Oki, Hitachi and ICL, and saw a market gap for Intel i860 products. There is no Mass860 representation in the UK - the nearest is in Munich." LHFC says it has channels already established in countries such as Korea, Japan, USA, Germany and India for small software companies that would be unable to afford the cost of taking products to these places themselves. Meanwhile Mass860 is said to have given its blessing to LHFC's efforts. For the curious, the name of the company is said to come from an IBM sales manager, who was reported, whilst trying to motivate his sales team, to have told them to go out into the garden "and pluck the low-hanging fruit."

SEQUOIA SIGNS OEM AND DEVELOPMENT DEALS WITH SUMITOMO ELECTRIC, TOSHIBA

Already the beneficiary of large and growing multi-million dollar OEM business from its parent Hewlett-Packard, Marlborough, Massachusetts-based Sequoia Systems Inc has now seduced another heavyweight, this time from Japan. It has signed a memorandum of understanding with Sumitomo Electric Industries Ltd under which Sumitomo will become a reseller of Sequoia's machines in Japan and some other countries, and discussions will now move on to granting the subsidiary of the chemicals giant manufacturing rights to the machines, as well as a joint development on future products. No details about potential future products were disclosed, but the deal may progress from a straight OEM deal to a venture to put the software on the MIPS Computer Systems Inc R-series RISC. General terms call for Sumitomo to become a non-exclusive OEM customer for all current and future Sequoia systems in Japan and in other countries, on a case-by-case basis. And demonstrating once again just how difficult it is to design a fault-tolerant computer system that lives up to its billing, Toshiba Corp has decided that rather than develop its own, it will follow what is now becoming a well-trodden path to the door of Sequoia Systems Inc and do a deal with the fault-tolerant Unix specialist too. Of Toshiba, Sequoia says it is discussing a joint development agreement that could lead to it licensing its technology to Toshiba on a non-exclusive basis - but it is expected to involve implementing the Unix on the Sparc RISC family.

ICL's VME BECOMES FIRST

X/OPEN-BRANDED MAINFRAME SYSTEM

As predicted, X/Open Co Ltd last week pronounced ICL Plc's VME operating system the first ever mainframe operating system to meet the requirements for compliance with release 3 of its Portability Guide. The first release of Open VME facilities will be made available to existing users in September with the next release of VME, SV292. An optimised C compiler will be released with SV292 and an ANSI Cobol 85 compiler will be out later in the year. The announcement was made as ICL introduced its new OpenFramework blueprint of computing systems, interfaces and standards aimed at easing the corporate transition from a proprietary to an open computing environment - the result of a £100m 10-year research and development programme. Amid the excitement, ICL also found time to report net profits for 1990 down 29% at £65m on turnover down 1.2% at £1,612m.

UNISYS PLANS TO SHIP ITS 88000-BASED UNIX SYSTEMS IN US, EUROPE THIS YEAR - USING THE CHORUS O/S

Unisys Corp is discreetly shipping its new range of Motorola 88000-based RISC systems in Japan. The new S/840 Unix machines come with a single CPU claimed to deliver 28 MIPS, Electronic News reports, although Unisys has plans to ship a four-CPU version in the not-too-distant future. Shipments into Europe and the US are being postponed until the company has its hands on more commercial applications for the systems. The Japanese shipments have so far been to Toyota, Nissan and Honda, for CAD/CAM applications, for which the systems come bundled with the company's Unicad CAD/CAM software. The system is being marketed as a "technical workstation" in Japan. In the US and Europe, on the other hand, the S/840 will be sold as a commercial machine - wise Unisys knows its place and has decided not to tangle with the likes of Sun Microsystems, IBM Corp, Hewlett-Packard Co and Digital Equipment Corp. But, according to the 88open Consortium's Tom Mace, there are plenty of commercial applications already available - around 2,000 he reckons. A consultant with the San Jose, California newsletter RISC Management reckons that Unisys will have more problems with the 88000's viability as a systems architecture - Andrew Allison argues that unless there is a deluge of 88000-based hardware announcements over the next few months, there will never be widespread applications development for the chip. Until some major manufacturers announce support for the processor, there is, in Allison's opinion, no incentive to do software for it. According to John Chen, vice president of Unisys' Unix Systems Group, the base S/840 will be built on a VME bus structure, with 200Mb of storage and the Chorus Systemes SA microkernel operating system based on Unix System V.4, adapted for multi-processing, fault-tolerance and transaction processing.

HEWLETT ADDS \$5,500, 68040 HP9000, BUSHMASTER TO BECOME BUSHWHACKER?

As expected, (UX No 334), Hewlett-Packard Co last week launched an entry-level, 25MHz Motorola 68040-based workstation rated at 22 MIPS, the HP9000 Model 425, with a base price of \$5,500 - faster, it claimed, than comparably-priced Sun Microsystems Inc machines. It also said it had a \$40m order from GTE Corp for the new systems. And Sources at Hewlett-Packard say the low-end version of its recently launched Series 700 Snake, tipped to do 110 MIPS at under \$10,000, (UX No 334), is exceeding all expectations in the labs: it's presently codenamed Bushmaster - not Bushwhacker as originally reported - though the same sources say that they liked the name so much they'll be trying to get it adopted officially!

IDENTITY CRISIS LOOMS FOR OMG OVER REQUEST BROKER DECISION

by Katy Ring

The Object Management Group will face an identity crisis if it allows one approach to object management to prevail over another when it determines an object request broker. This is the opinion of Herbert Osher, president of HyperDesk Corp who was in London last week. He thinks that if the two remaining submissions left for evaluation - the Distributed Object Management Facility contributed by Hewlett-Packard and Sun and joined by the NCR/ODI technology and the HyperDEC submission - are led into a winner and loser situation then the open systems movement will be the real loser because the software development world will be left to support two object management systems. DEC has hundreds of copies of its Application Control Architecture out with end-users, independent software vendors and in internal use, says Osher, and these are not going to disappear overnight, nor is the VAX/VMS user base that this technology will serve along with Ultrix users. Osher believes that a lot of OMG members would welcome a marriage between the two approaches, purely because most of them operate in the Unix world, but would welcome the opportunity to embrace the VAX/VMS world as well - something that the HyperDEC submission would enable them to do.

Indeed, Osher argues that DEC's Application Control Architecture has been built to support its Cohesion CASE strategy to enable it to sell software to integrate the VAX with Ultrix. While the strength of these arguments might appeal to third party software developers, their validity for rival hardware vendors such as Hewlett-Packard and Sun is at best probably laughable. However, this throws up another division between the crew supporting the Distributed Object Management Facility and the HyperDEC submission. The former is being driven by two companies dedicated to selling hardware, the latter is being promoted by the only independent software vendor left in the ring and DEC, a company repositioning itself as a software vendor. Software vendors tend to welcome industry moves to make it easier to deploy their applications among a variety of environments with the minimum of effort. Hardware vendors pushing tin in the Unix world require added value for profitability. Hewlett-Packard has invested a lot of time and effort in establishing itself as a commercial leader in object-oriented technology via NewWave, and although the Distributed Object Management Facility is not associated with any particular implementation of NewWave, its success or failure will impact its credibility. While it is thought to be technically feasible for the two approaches to object management to be brought together - and this would be of greatest benefit to users and developers - this outcome seems increasingly unlikely. For once it is Hewlett-Packard that can be caricatured as the bad guy - it alone appears unmoved by pleas for unity and the creation of a truly open software environment. Graham Greenhill, marketing manager for Hewlett's co-operative object computing division, said that while he would like to see all the submissions come together he was not optimistic that this would happen. He said the issue was that Hewlett-Packard and Sun had invested a lot in the technology and the application programming interfaces and believed that theirs was the technically correct approach. He added that this view has been endorsed by NCR and Bull and that, consequently, there is not a lot of room for flexibility, since to bring the HyperDEC technology into play would require changes in the DOMF. These changes would not be dramatic, but nevertheless, Greenhill thought it unlikely that such changes would be made, although he finished by commenting that he didn't mean it won't happen. However, if it doesn't happen, Hewlett's obdurate attitude could end up damaging the Object Management Group's credibility as an arbiter, since the Group has been viewed with suspicion by many software companies who have dismissed it as a marketing arm of Hewlett-Packard. It's a view that certain individuals within Hewlett don't mind promoting, arguing that standards bodies are part and parcel of the marketing machine nowadays. Ironically, all the players are most interested in what IBM and Microsoft are up to, though neither have submitted technology - Microsoft has been uncharacteristically quiet and IBM has also yet to speak. Most think that both will be late into the market with object request broker technology, but also know that this doesn't matter because they have such a strong hold on the market. However, the OMG's hand in promoting object technology would be greatly strengthened if it could bring Hewlett, Sun and DEC together. For if they go their separate ways the wide commercial acceptance of object technology will probably await the blessing of IBM and Microsoft and that is clearly not to the advantage of any vendor with technology in the ring.

SUN'S RESISTANCE TO X-TERMINALS CONTINUES, COURTS CONGLOMERATES WITH SPARC

Sun is still firmly against the concept of network computing solutions based around X-terminal technology. It believes the whole philosophy is a step back to time-sharing techniques, and freely admits that it will lose business because of this resistance. "There are accounts that we can't win," says Sun's John Coon. For example, in the UK, Sun has missed out altogether on Barclays Bank's planned move to open systems in its high-street outlets, with a huge order thought to be based upon thousands of X-terminals connected to IBM RS/6000 systems, (UX No 323). Sun makes no secret of the fact that it is snuggling up closer to large industrial conglomerates like Fujitsu - including its Amdahl and ICL siblings - and Xerox, through their collaboration with the Sparc. Sun says these, and other relationships it is developing, are part of a strategy to make Sun easier to deal with internationally. This it may well be, but the Fujitsu connection runs a lot deeper. Indeed, hints that Fujitsu's interest in the Sparc as a strategic product may end up bringing about a more serious alignment between the two do not seem to worry Sun, (UX No 316). Although it says it has now built up enough financial and legal defences to put off all but the most determined of hostile takeover bids for its business, a friendly investor would likely get an altogether different treatment, especially given the Mountain View, California firm's insatiable appetite for more money. Sun claims that in addition to the 50 or 60 firms that are known to have signed up for the Sparc in one form or another, there at least another 30 licensees that have not publically declared, and are not known to Sun either. Sparc International keeps quiet about those firms that do not want their Sparc intentions spread around town. Meanwhile in the US, one of Sun's corporate marketing slogans of the past couple of years, "the network is the computer," is being abandoned. Not because the phrase implies an association with X-terminal technology, says Sun, but because the company has changed one of its commercial agencies in the US, which has prompted a re-think of its corporate messages over there. Whilst Sun says the concept will still be used in the UK, in the US, X-terminal builder Network Computing Devices Inc is reported to be trying to adopt Sun's cast-aside phrase, which it thinks fits X-terminal-based solutions much more accurately. NCD is said to be trying to take out a copyright on the moniker.

B&W RELEASES NFS SOFTWARE FOR PCs

Beame & Whiteside Software Ltd, Dundas, Ontario, has released BW-NFS for MS-DOS V2.20, which it claims converts any MS-DOS-based personal computer into an NFS client. It supports MS-DOS 3.1 and above, Microsoft Windows 3, and gives personal computer users transparent access to network resources and Unix-based services on hosts running NFS. BW-NFS for MS-DOS uses TCP/IP and is available now priced at \$350. Beame & Whiteside is one of founder members of the ONC/NFS Development Cooperative launched last month to promote distributed computing solutions based upon TCP/IP.

HYPERDESK SETS AUTUMN DATE FOR OBJECT-ORIENTATED LAUNCH

Although all the signs are that the Hewlett-Packard/Sun/NCR/ODI horse is ahead as the final furlong in the Object Request Broker stakes approaches, the HyperDesk stable is confident that its mount will cover more ground than the odds-on favourite. Which ever way the Object Management Group's decision goes - see opposite page - whether HyperDEC technology eventually forms all, a part or not a line in the request broker, HyperDesk Corp, Westborough, Massachusetts, will be releasing its first product, an object-orientated development platform, this Autumn. Currently known as the Local Object Manager, LOM - a marketing name has yet to be finalised - its core is a back-end, object-orientated database and a front-end called ObjectSQL. HyperDesk has implemented these in conjunction with Informix - though it says they can be ported to any other relational database. Informix acts as a repository - a store for collections of objects known as blobs - which is required for doing interactive development work with objects. Ideally, HyperDesk says, an object-orientated database would be used as the repository to achieve best performance from the system. The LOM doesn't assume anything more than SQL on the host system, but if there are other features, the software is optimised to take advantage of them. It doesn't require any particular operating system either, as it comes with what HyperDesk president Herbert Osher describes as an "abstract operating system," to which the software always talks. This maps on to the underlying operating system via dynamic linking - a feature built into the "abstract" operating system for those that don't incorporate it already. LOM is based upon the NetWise remote procedure call, though Osher says it could just as easily run on the HP/Apollo Network Computing System version. Also included is a self-describing naming service, which it has developed. When a user logs on to the system, the service returns the names of objects that the user has permission to access. When asked, the objects will describe themselves in terms of the parameters they require and any conditions that need to be fulfilled before use. The naming service is not exclusive. If a customer wants to use a naming system that is already in place on the system, Yellow Pages or an X.500 service for example, they can use it. The LOM just accepts it as another object. Also included is Massachusetts Institute of Technology's Kerberos security system - which Osher says is the only security feature included in the submissions to OMG - along with management tools for the object request broker. Other features can be added as objects where required. HyperDesk officials were last week touring Europe and the Far East in search of distributors - and customers: it'll license or sell LOM to anyone who wants to build object-orientated applications. HyperDesk is likely to follow the platform with applications and services that can be added to LOM, as objects, of course. "We have ideas for completely new kinds of applications for distributed object-orientated environments," says Osher. Not surprisingly, the Data General spin-out developed LOM on the Motorola 88000-based AViiON workstation, and it will run on any 88000-compliant system. However HyperDesk also has the thing running on Sun Microsystems Inc's Sparc RISC processor - a port it said took just two weeks to complete - the version it recently demonstrated to OMG. Although, according to HyperDesk's vice chairman Jerry Levin, Japanese firms know little about object-orientated technology at the moment, ASCII Corp, which has a 38% stake in HyperDesk, is said to be viewing LOM as a "very important part of its strategy for the next ten years." HyperDesk has a staff of 23, most of whom hail from Data General.

PERIHELION SOFTWARE DEVELOPS HELIOS FOR EUROPEAN SUPERCOMPUTER

Perihelion Software Ltd, based in Shepton Mallet, Somerset, has announced Release 1.2.1 of Helios, the Unix look-alike parallel operating system that has been around for years but is now being developed ultimately for a new European design of supercomputer. Helios is being developed by an international team of programmers in Shepton Mallet as part of a research project being funded by a grant from the UK Department of Trade & Industry's Eureka fund, from which Perihelion has received £567,000. The company has bought two new supercomputers with the grant - both are Transputer-based systems built around Inmos' T800 series chips. The MultiCluster system from Aachen, Germany-based Parsytec GmbH, and the T.Node system from Telmat Informatique in Alsace, France, have between them 44 processors and 176Mb of RAM, and can do around 4 MIPS. The research project is also aimed at developing the software for the new Inmos Ltd T9000, or H1, Transputer chip. Prototype T9000-based machines should be available by early next year, Perihelion reckons. The T9000 communication bandwidth is increased 10-fold over the T800, and uses packet switching networks instead of the old linking system. Communication routing algorithms will be handled by the hardware, so that every T9000 will be about as powerful as 10 existing Transputers. Helios, which has been commercially available since 1988, uses a job control language called Component Distribution Language to support parallel processing in any high level language, so that existing programs written in C or Fortran can be applied across Transputers in parallel, and programmers can continue writing in languages with which they are familiar.

ALL CHANGE AT INTEL CORP AS IT RESPONDS TO MARKET CHANGES

Santa Clara, California-based Intel Corp is rearranging the furniture "to improve its responsiveness to emerging marketplace needs". Three new groups will report to Intel's executive office. The Architecture & Applications Group led by senior vice-president David House to integrate OEM and personal computer user requirements into future Intel systems, has additional responsibility for corporate marketing and communication activities and field applications. The Software Technology Group's to work with both the software industry and Intel's internal software operations to assure the creation of innovative software products on Intel kit. The 80860 and 80960 RISCs and the 80750 multimedia products will comprise the new Multimedia and Supercomputing Components Group. Intel says the Microcomputer Components Group is being dissolved because several of its operations "have grown to such size and corporate strategic importance that they need to be elevated to the executive staff".

IBM GOES TO BORLAND FOR OS/2 OBJECT-ORIENTATED TOOLS

It could all end in tears - in a high profile manoeuvre Bill Gates attempted to disengage Microsoft's reputation from OS/2's failure to take off by talking about version 3.0 and New Technology in which object-orientated technology will play a key role. So how was IBM Corp, now in charge of OS/2 2.0, to make a marketing splash and get some kind of revenge? Well it is signing high-flying Borland International Inc to what could prove promising business. It has asked the Scotts Valley, California company to develop specific object-orientated programming languages and development tools for the forthcoming 32-bit OS/2 2.0, which is to be generally available later this year. The languages and development tools, available early next year, will start with an implementation of Borland C++ for OS/2.

INTEGRATED MICRO WINS MOTOROLA OEM PACT FOR FAULT-TOLERANT UNIX KIT

Not content to let Sequoia Systems Inc have all its own way in the fault-tolerant Unix market, Consett, County Durham-based Integrated Micro Products Ltd, which now owns the Parallel Computers fault-tolerant Unix technology, has signed a major deal with Motorola Inc, in a move tipped to be the first of a number of OEM contracts in the pipeline. The agreement, said to be worth some \$20m over the next five years, involves a special adaptation of the fault-tolerant Unix for use in Motorola's trunked radio systems for police and emergency radio services. The 68030-based Unix machines will act as controllers, performing real-time functions such as channel assignment, and are also to handle network management.

PARSYTEC HAS NEW TRANSPUTER EXPERIMENTAL BOARD

Meanwhile, Parsytec Inc, West Chicago, Illinois, has announced its TPM-EXP Transputer-based Experimental board: the new board consists of a prototyping field to accept custom designed hardware and a Transputer node for control and processing capabilities; the board includes a T222 Transputer section providing 10 MIPS of local processing performance, link communication bandwidth of 9M-bytes-per-second, and a real-time clock and 64Kb of static RAM on each node; Helios, the Express parallel toolkit, MultiTool Transputer development system are supported as well as cross compilers under MS-DOS, Apple System and SunOS Unix, and languages C, ParC, Fortran, Pascal, Occam and Ada; one-off pricing for it is \$1,280.

NEC WINS GIANT UNIX ORDER FROM DAIWA SECURITIES

NEC Corp has won one of the biggest Japanese orders yet for Unix workstations, from Daiwa Securities: it wants 6,000 NEC EWS 4800 machines for head office in Tokyo and in 30 branches. NEC sold only 7,000 of the 4800 in the whole of last year.

UNIFI OUT TO OBSOLETE AUTOMATIC CALL DISTRIBUTORS WITH SOFTWARE FOR 80386 UNIX MICROS

Billerica, Massachusetts-based Unifi Communications Inc is launching a software-only offering that it claims can replace call processing systems such as automatic call distributors, Centrex key systems and private branch exchanges. Called PhoneServer, it is written to run under Unix on 80386- and 80486-based systems, and Unifi reckons that the software eliminates the need for customer premise switching equipment by making use of the public phone network. Making use of ISDN, PhoneServer directs the public network to route calls to the optimum destination, basing its directions on information from the company network and by knowing the status of each connected device. It also provides real-time monitoring reporting and configuration control. A client package enables the desktop applications, information systems applications and telephone services to be merged. The software will be released in the second half of 1991 and it will be licensed to value-added resellers through a third-party programme designed to support the development of applications that use PhoneServer. The first application for the system is the Distributed Call Center, a network automatic call system. The Call Center handles call transactions, providing links to geographically dispersed host computers for incoming call management applications such as a help desk. As with conventional call processing systems, Call Center enables departments such as telemarketing to be placed anywhere, while maintaining centralised control and configuration. But Unifi claims that the system also eliminates the growth constraints "inherent in hardware-based Automatic Call Distributors which have limited capacity." Call Center is accessed via a phone window that is provided on an agent's integrated workstation.

DEC WINS US DEFENSE BUSINESS VIA MCDONNELL DOUGLAS

Digital Equipment Corp says that its DECsystem 5000 Model 200 RISC Ultrix computer systems have been selected by McDonnell Douglas Electronic Systems Corp for the US Defense Department's Intelligence Information Systems Automated Message Handling System, and the contract may be worth \$12m: McDonnell Douglas Electronic Systems Co, of McLean, Virginia is the prime contractor for the Air Force Electronic Systems Division on the \$40m Message Handling program, which is a real-time document analysis system running on local-area networks; the system will replace the Defense Department's Modular Architecture for the Exchange of Information, and McDonnell Douglas will begin installing a prototype system this summer at the Electronic Systems Division at Hanscom Air Force Base in Massachusetts, and laboratories at Griffiss Air Force Base in New York; the system is scheduled for completion at more than 50 sites by 1995; McDonnell Douglas will provide DEC kit for the server hardware and will integrate several other hardware and software items to build the complete system; also, the new server software includes Topic Real-Time from Verity Inc.

XEROX SIGNS WITH SYSTRAN FOR MACHINE TRANSLATION SOFTWARE

Xerox Corp hopes to make its icon-based machine natural language translation a standard product with business and government agencies, and to that end, its Sunnyvale-based integrated systems marketing organisation has signed a technology and marketing alliance with La Jolla, California-based Systran Corp covering co-operative development and marketing of an automated language translation product designed to ease language professionals' use of machine translation technology on industry standard machines; financial details were not disclosed; Xerox also became a member of IBM Corp's Complementary Marketing Programme to assist IBM's sales efforts for the 9371 mainframes on which the automated language product is intended to run - the product will feature Systran machine translation software running on IBM mainframe and mid-range computers interfaced with the Xerox Global-View networked desktop environment which runs on MS-DOS personal computers and Xerox Unix workstations, which the company is buying OEM from Sun Microsystems Inc.

SILICON GRAPHICS SETS MUCH BIGGER JAPANESE PLANT

Nippon Silicon Graphics Inc plans to build a second plant in the Kanto area of Eastern Japan. The 60,000 square foot plant will produce about 300 of its Personal Iris graphics workstations per month - its first manufacturing centre in Kawasaki produces just 50 a month. As well as serving the local market, it will export to Korea, Taiwan and China.

MATSUSHITA DOES PARALLEL 64-BIT ARITHMETIC CHIP

Matsushita Electric Industrial Co Ltd has been working on a parallel supercomputer with Kobe University for four or five years now, and it says it has now designed an intrinsically parallel microprocessor for the machine. Key feature of the 1.3m transistor chip, rated at 80 MFLOPS, is that it is claimed to do a 64-bit addition and a 64-bit division at the same time. Matsushita's experimental parallel computer using the chip should do 20 GFLOPS.

INTERGRAPH BUYS 18% OF SILVAR-LISCO TO SEAL DEAL

Intergraph Corp has paid \$1.1m for an 18% stake in struggling Silvar-Lisco Inc and bought a warrant to buy up to 300,000 more shares for a total exercise price of \$186,000 at any time up to May 20, 1996. The two also entered into an OEM agreement under which Intergraph will distribute worldwide Silvar-Lisco's place and route tools embedded into Intergraph's design flow. An agreement was also signed for integration of Silvar-Lisco's SL-Cell and SL-Array into Intergraph's Computer-Aided Engineering product.

ACER, ALTOS DEBUT NEW 80486 SYSTEMS

Following the launch of its uniprocessor Intel 80486-based 3000SP33 last week, Acer America Corp, San Jose, has added the multi-processing 3000MP to its AcerFrame series, an EISA bus machine which will come with up to four 50MHz, 40 MIPS 80486 part when it becomes available - the 33MHz implementation for the present. It supports between 32 and 128 users and, like its uniprocessor relative, can run Novell Inc NetWare, Santa Cruz Operation Inc and Interactive Systems Corp Unix, Banyan Systems Inc Vines and OS/2 Lan Manager. It'll come with from 8Mb to 256Mb RAM and 6.4Gb disk, 16 EISA expansion slots, SCSI interface, Ethernet. Ships start in August, the system costs \$15,000. Meanwhile Acer's Altos Computer Systems sibling has announced two new Series 1000 Unix systems based on Intel's new 486SX microprocessor. The 1820-486SX, with 200Mb disk is priced at around \$10,000 - while the 1844-486SX, with a 435Mb hard drive will come in just above that. Ships are expected early next month.

NCR HAMMERS FINAL NAILS IN THE MAINFRAME COFFIN

NCR Corp reckons that its new System 3600 massively parallel transaction processor and database computer, (UX No 334), costs less than \$5,000 per MIPS, where an average large mainframe costs over \$50,000 per MIPS. The launch is the latest step in an innovative transformation of its product line that began way back in 1976 when the Dayton company launched the upwards-compatible Criterion 8500 mainframe to succeed its original Century machines. The ageing Centuries had fallen way behind the performance of the leading mainframes of the time, and once customers ran out of steam, NCR had little alternative but to give them the phone number of IBM Corp's nearest sales office. The company didn't have the resources to design and build a competitive machine using the then traditional technology and methods: instead it became the first to design a mainframe using minicomputer-style bus architecture, and assigned many of the tasks normally handled by a monolithic central processor to a collection of special function, mainly merchant microprocessors hanging off the bus. In this way, with only a modest power central processing unit, the complex could match the performance of the biggest mainframes in the market - and cost NCR much less to build. In the US, early customer installation for the first release of the NCR 3600 is set for September with volume deliveries in January 1992, where prices range from \$855,000 for a development-level system through \$3.5m for a mid-size machine to about \$8m at the top end. The company is looking for \$100m in sales from the new machine in 1992.

ALLIANT ADDS A RACK-MOUNT MODEL IN ITS SX/ FAMILY

Littleton, Massachusetts-based Alliant Computer Systems Corp has come up with a new configuration of its 80860 RISC-based minisupercomputers and is touting it as the first supercomputer for oil and gas exploration that is deployable in a small, rack-mounted package. The SRM/1 - Supercomputer Rack Mount - enables users in remote locations to process seismic data locally in real time with the performance of a full function parallel supercomputer, Alliant says. The SRM/1 does up to 640 MFLOPS 32-bit, 320 MFLOPS 64-bit and 328 VAX MIPS with one to eight CPUs. No prices were given.

AMDAHL COMMITMENT TO OPEN SYSTEMS INTERCONNECTION UNDER UTS UNIX

Amdahl Corp has announced that its UTS implementation of Unix System V is to support Open Systems Interconnection protocols for FTAM file transfer access and management capabilities, X400 message handling system and X500 directory services. Beta testing of a UTS release with FTAM capabilities is underway, and general availability is set for the first half of 1992. X400 support is set for the second half of 1992, and Amdahl says that X500 support will be announced once ISO standards are fully defined. At the same time, Amdahl UK has caught up with the US, Germany and Italy, and announced immediate availability of the the 7300 Unix-only processors based on Fujitsu Ltd's M760 mainframe. The 7300-150 uniprocessor and 7300-250 dual processor run under UTS 2.1, and the first supports up to 250 active users, the dual processor supports 500. Prices for 7300 base units go from £250,000 and rise to around £750,000. No dates on UTS compliance with Unix V.4, but the company says it takes up to 24 months to add code, and a further 12 months to test and certify. Amdahl is maintaining a stubborn silence on its commercial UTS users, but it says there are 18 sites in the UK and 45 across Europe, some of which are upgrades.

ADVANCED LOGIC'S POWERPRO TAKES ON SYSTEMPRO

Irvine, California-based Advanced Logic Research Inc reckons the market Compaq Computer Corp has been trying to pioneer with the Systempros is a potentially promising one, and has introduced an ALR Powerpro Array 486/33 family which uses the company's new Advanced Disk Array controller 32-bit EISA bus master controller with 2Mb cache, upgradable to 8Mb, designed to boost disk subsystem performance, capacity and disk fault-tolerance. The controller provides disk striping, spanning and mirroring and the machines use a 33MHz 80486 processor, an eight-slot, 32-bit EISA bus, 512Kb of cache and the ability to add a second 80486 and up to 1Mb of total memory cache. The Powerpro Arrays come with either two or four 210Mb or 340Mb 3.5" drives. The company points out that unlike Compaq's proprietary interface, the Advanced Disk Array controller uses a standard interface to support MS-DOS, NetWare and Santa Cruz Operation Inc Unix, so there's no need to rewrite device drivers; it also supports any industry-standard IDE drive and 8- or 16-bit AT bus devices. It performs deferred write operations simultaneously with read service requests for faster input-output throughput. The company claims 20 VAX MIPS for the uniprocessor, 40 for the dual. The Power-pro Arrays ship in a floor-standing chassis with a single processor, 17Mb of 64-bit RAM expandable to 49Mb; nine internal drive bays; 12 expansion slots - eight EISA, two AT and two proprietary; 512Kb expandable to 1Mb read-write-back cache. With two 210Mb disks that's \$17,000; with four it's \$19,000; two 340Mbs is \$21,000, four, \$23,000; July.

COMPAQ DOWN TURN RESULTS IN SHAREHOLDER SUITS

Having shaken the industry with a warning that sales for the second quarter to June 30 will be more than 15% below second quarter 1990 sales of \$862m, and then seen its shares plunge 22%, Compaq now plans to buy in up to 10m of its shares in open market transactions which should put a floor under the price. But although most reasonable people would agree that Compaq did everything it could be expected to do in warning holders of the downturn, two holders are suing the company, chairman Ben Rosen and chief executive Rod Canon, alleging that they deceived investors and inflated the share price by issuing a series of optimistic statements about the company's prospects in late 1990 and early this year. The suit in particular alleges that Compaq failed to disclose that it was "overloading dealer distribution channels with excessive inventory in an effort to inflate reported sales and earnings" and that it "lacked sufficient and adequate foreign currency hedging mechanisms". It charges the officers that they sold large amounts of Compaq stock during the period "while in possession of material adverse information".

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At the X-Windows Xhibition '91 show, San Jose, California, during the first week of June, UK firm IXI Ltd, Cambridge, will challenge developers with character-based applications to submit their software to the rigours of its Deskterm tools to produce an OSF/Motif version of the application: IXI engineers will attempt to add a Motif/Windows 3 front-end onto existing applications within six hours - interested developers should contact IXI's San Jose office on 408 436 5730.

Hewlett-Packard says it has pilot New Wave sites in 134 of the Fortune 1000 companies, and internally has 160 developers working on it.

Ingres Products Division of ASK Computer Systems has signed a five year marketing and development deal with ICL: the two will sell identical versions of Ingres to ICL users anywhere in the world - ICL can also sell Ingres on Sun Sparc workstations and supply Ingres on an OEM basis on "certain other hardware platforms" - like Fujitsu's?

Paris-based Chorus Systemes will reveal a multi-million deal with "one of the world's largest telecommunication equipment suppliers" this Wednesday for its microkernel based operating system that includes Unix compatibility: current Chorus customers include Unisys Corp, GEC-Plessey Telecom, Intel Corp's supercomputer division and the UK/France's Inmos.

Groupe Bull and Nokia Data Systems AB of Sweden have decided to call off talks that were started with a view to establishing a broader marketing agreement in Scandinavia. The current business relationship between the two in Finland will continue where Nokia distributes Bull's mainframe and Unix networking products, but the agreement will not now extend to cover Norway, Sweden and Denmark because of deteriorating market conditions.

NCR Corp and Lotus Development Corp has a distribution deal in which NCR will market a new Unix version of Lotus 1-2-3 with NCR's System 3000 family of computers: Lotus 1-2-3 will run under Unix System V and SCO Unix and will be available on the System 3000 in the summer.

At its recent developers conference, Apple confirmed that its forthcoming Tower Macintosh will use the 68040 chip and will include 24-bit colour support and Ethernet support on the processor board.

Fujitsu Ltd director and head of the company's Open Systems Division, Takeshi Maruyama has been appointed to the board of Unix System Laboratories Inc: he was nominated by the other Japanese investors.

Tinton Falls, New Jersey-based Concurrent Computer Corp reports the formal dismissal of the petition for the company to be put into involuntary Chapter 11 bankruptcy protection: the petition was filed on December 31 by three bondholders in order to maintain their relative positions against the bank group during Concurrent's debt restructuring negotiation period, but was rendered irrelevant by the company's agreement with the bondholders and the bank group announced March 5 1991 to restructure debt.

France's new prime minister Mme Edith Cresson is so strongly associated with anti-Japanese statements that the impending proposal for NEC Corp to exchange its 15% stake in Bull HN Information Systems Inc for 5% of the French parent company, Compagnie des Machines Bull SA is seen as a test of her true resolve: Bull is totally dependent on NEC for high-end mainframe technology.

Mitsubishi Electric Corp has been demonstrating the strength of its new OEM agreement with Hewlett-Packard Co: it is taking the HP9000 Models 730 and 750 Precision Architecture RISC machines and showed them at the Business Show last week as the Melcom ME RISC series, with models 7500 and 7300, each 76 MIPS, and the 7200, 55 MIPS; it also showed three models of a server version, the ME/S7200; its prices start at \$23,453 for the low-end 7200; Mitsubishi also announced last week that it had followed Hewlett-Packard into the Open Software Foundation.

Sony Corp has added a top-end RISC model in its News workstation line, the NWS-3865, rated at 25 MIPS, and with it a 1.5Gb disk, the NWP-552; the new box uses the R3000 MIPS Computer Systems Inc RISC, has a 640Mb disk and is \$25,250 from August.

NEC Corp reportedly now holds about 10% of the Japanese market for Unix workstations, behind Sun Microsystems Inc with 29%, Yokogawa-Hewlett-Packard Co with 25%, and Sony Corp with 15%. NEC says it hopes to up its share this fiscal to 20%, which would come to some 18,000 machines.

Apple Computer Inc reports that it has failed to reach an out-of-court settlement with Microsoft Corp and Hewlett-Packard Co in its copyright infringement suit over Windows; a procedural hearing for the case was scheduled for last Thursday, as we went to press.

Cognos Inc says its PowerHouse applications generator and its StarBase database are now under Digital Equipment Corp's RISC Ultrix supporting DEC's Network Application Support services and Cohesion development environment: pricing is from \$5,900 up to \$200,000.

Faced with a squeeze on margins as it successfully bids for market share with its new low-cost Macintoshes, Apple Computer Inc is to lay-off 10% of its workforce, partly by attrition and partly by lay-offs to be announced this quarter. This will lead to a charge against its third quarter figures. The overall consolidation and restructuring - the biggest in Apple's history - is to take place over the next 12 months.

Sun's notions of Multimedia centre on a mass market IPC style machine, where the audio visual widgetry is on the mother board: Sun Technology president Eric Schmidt said all the performance has to be native, because people won't pay for that kind of add-on.

MIPS is now saying an additional 15 companies have joined the ACE initiative, up from 10 a couple of weeks ago (UX No 333). All have signed the terms and conditions agreement that pledges them to producing an ACE box. MIPS, which has previously identified the newcomers only as including a goodly proportion of PC makers, is planning to disclose their names at PC Expo next month in New York.

Hewlett-Packard says we shouldn't believe any of this speculation that it will decouple from OSF because DEC's version of OSF/1 looks to have the best shot at becoming the OSF standard thanks to its prominence in the ACE Initiative (UX No 332): HP claims it's delighted with the attention focused on OSF/1 by the initiative, and although it would never join ACE it certainly wouldn't mind selling them a bunch of HP technologies, starting with object orientation.

IBM's Advanced Workstation Division chief Bill Phillip, speaking at Executive Uniform last week, suggested that IBM might eventually pick up Bill Gates' OS/2 3.0 if there was "good tight linkage to 2.0."

Interactive Systems Corp wants USL and UI - and UI members - to start banging the drum for SVR4: they say it needs an overall marketing campaign, one that would help Interactive sell SVR4 for Intel and the coming Unix Easy.

Following management changes at Sony Microsystems UK, the operation is now headed up by Ian Miller, who replaces Steve Boniwell, ex-Apollo Computer: Miller reports to Sony UK Ltd's managing director of sales, Haydn Abbott.

Someone at Executive Uniform noted that the current version of SCO's ODT takes up to 34 diskettes, 13 of them Informix and one or two requiring multiple installs.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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The weekly information newsletter for the UNIX ® community worldwide

London, June 3-7 1991

Number 336

CHORUS WINS MULTI-MILLION TECHNOLOGY DEAL FROM ALCATEL

The telecommunications industry is now starting to embrace the world of Unix and open systems just as the computer industry has, and the latest convert is Alcatel NV, the world's largest supplier of public and private communications systems and equipment. Through its Business Systems Group, Alcatel is the market leader in private branch exchanges (PBXs) in Europe, where it has a 25% market share, and ranks second worldwide. It has now signed up with French operating systems developer Chorus Systemes to use Chorus' micro-kernel technology on its future PBXs, and it plans to phase in use of the software onto all of its PBXs over the next few years. The transition will be transparent to users, but will allow Alcatel to more easily offer added value software on top of the PBX voice/data comms services, such as network management, voice mail and automatic call distribution software, using the Unix V.3 (and soon V.4) compatibility offered by the Chorus/Mix product. Alcatel PBXs use a variety of Intel (186, 286 and 386) and Motorola (68000, 68020) processors, and the company has been working with Chorus for a year and a half doing the porting. Key factors in the choice of Chorus were the real-time micro-kernel nucleus, distributed architecture, fault-tolerant facilities and network transparency of Chorus. The Chorus nucleus will be used on its own for smaller PBXs as a real-time executive, while larger systems can support full Unix on top. The multi-million dollar agreement covers a licensed transfer of the technology with royalties for each copy sold. Other Chorus telecomms customers include GPT (GEC-Plessey Telecom) and France Telecom, and Chorus expects around half of its revenues to come from this market sector.

CUSTOMER DEMAND FORCES IBM TO UNIX V.4 TABLE

UHC Inc and Unix SVR4 scored something of a coup last week when IBM announced that it had contracted with Houston, Texas start-up UHC to port SVR4 to its PS/2 Models 90 and 95 in hopes of winning a sizable pact from mega-retailer KMart stores for its machines. IBM's motivation in dealing with "the other side" stems from KMart's determination to adhere strictly to Unix International's Roadmap and IBM's desire to satisfy customer requirements and win the business, according to IBM's Detroit distribution branch marketing manager Henry Bergmans, the IBMer responsible for the KMart account and the man who put the deal together. KMart is a UI member. At stake is a deal that could see at least one PS/2 go into every one of KMart's 2,500 stores, an RFP valued somewhere between \$10m and \$50m.

Folk-hero

Bergmans' actions have obviously chafed some IBM hardliners, while delighting the AT&T camp. Last week they seemed ready to extend him folk-hero status. Bergmans said the deal with UHC was the result of a lengthy process in which all options were considered. His adventure started last October at Unix Expo when he approached AT&T directly at their booth. "There were a lot of people around," he said, "you can imagine their reaction when I walked in, announced I was from IBM and wanted to do business. They didn't know what to do with me they were so dumbfounded." He also approached Interactive and SCO, but lighted on UHC "because of their in-house technical skills and their responsiveness," he said. The press release UHC issued last week with IBM's sanction positively glows with approval. Bergmans is quoted as saying, "UHC's expertise has allowed IBM to become a legitimate player in the Unix System V Release 4.0 marketplace." The port has been completed and is demonstrable, Bergmans said. It adds standard support for PS/2 SCSI I/O, ASCII terminals as system consoles, NetBIOS support, IBM XGA adapter support, Token Ring and Ethernet support and asynchronous communication adapters. The software will be shipped as four standard modules including runtime Unix, an ANSI C compiler, networking protocols (TCP/IP, NFS, RFS and DFS), and graphics (both Motif and Open Look). Bergmans said it was too early to tell whether his example would be followed by other IBM units, but thought it may be apt for federal sales. UHC believes the announcement will attract other IBM resellers. It has priced the operating system at between \$2,000 and \$3,000. KMart also wants to go with SVR4 MP and so will Mr. Bergmans and UHC. Since IBM intends to keep the PS/2 a uniprocessor, he has gone out of house to AOX to get the boards that will make the Model 95 into a tightly coupled multiprocessor. Bergmans is up against competition from Unisys, NCR and a bunch of other multinationals in his quest for KMart's business. He doesn't expect to get it all; after all, KMart is into Open Systems and will probably spread it around, but he is looking to sign a healthy chunk of it - and not all of it for PS/2s. (The pair say cryptically that plans are currently under development to put SVR4 on a future Intel platform for IBM). KMart's final decision is months away. It may turn out to be the first time IBM carries with it the best wishes of AT&T.

WHAT IS AN OPEN SYSTEM?

The thirteen user organisations that got together at Uniform in Dallas earlier this year to express their collective requirements for open systems, (UX No 314), held a second meeting, hosted by the Corporation for Open Systems and Uniform Canada, in Vancouver a couple of weeks ago. The organisations, which represent a collective buying power of over \$100,000m, are looking for a definition of open systems which they can all use and standardise on, and have instructed Uniform UK to prepare the groundwork for it. They will also be sitting-in on X/Open's Xtra requirements process to see whether a similar programme could be used to define their collective technological needs. The organisations will also be tracking the various open systems profiles and templates that are being put together around the world, with the aim of developing some kind of model that they can all use. They'll also build up a library of information on open systems to share. The next meeting takes place in London on November 5 - bonfire night: it's being hosted by Uniform UK and chaired by John Spackman, director of the European Telecommunications Information Services group.

ICL GROWS TO £2,000m WITH ACQUISITION OF NOKIA DATA

Fujitsu Ltd, through its 80% affiliate ICL Plc, is paying £330m to take a dominant position in the Scandinavian computer market with the acquisition of Nokia Oy's loss-making Nokia Data Systems, which is primarily the former Ericsson Information Systems and is strong in display terminals, particularly for airlines, banking terminals, and personal computers. The price is split £50m cash, £180m in preference shares, half of them redeemable, the other half convertible into 5% of ICL when the company is floated on the London International Stock Exchange, and £100m in assumption of debt. ICL is already well placed in Scandinavia, particularly in Denmark, where it has 50% of RC International A/S, successor company to Regnecentralen. It was becoming clear by late 1989 that Nokia would have to sell one of its three main electronic businesses - Data, cellular telephones and equipment, and consumer electronics - in order to have sufficient resources to invest in the surviving two, and as the loss-maker, Data was the best bet. ICL was the first name in the frame for "what might be a once-in-a-lifetime opportunity to gain a dominant position in the Scandinavian computer market". Like ICL, Nokia majors on the Sparc and the 80486 for its Unix offerings, so the companies are a good fit. Nokia Data adds some £700m of annual turnover to ICL, taking it over the £2,000m mark. It also adds 7,000 employees to ICL's 21,000. More details - page four.

UI BEGINS ATLAS ROLL-OUT THIS MONTH...

The unveiling of UI-Atlas (UX No 331), Unix International's rebuttal to OSF's DCE, reported by some sources to be delayed by doubts over its solidity, (UX No 335), will take place in a phased manner starting as scheduled later this month with a statement of direction and a delineation of the architecture and some of its elements. Unix International marketing vice president David Sandel said a Unix International Executive Committee meeting, held in Tokyo three weeks ago, voted to proceed with the architecture and committed their companies to it, pledging to work with Unix International on the rollout. The Executive Committee, representing all of Unix International's principal members as well as some other companies including Pyramid, Locus and Unisoft, offered Unix International engineering resources to aid in the definition, development and timing of a reference implementation. The scope of the project, far larger than DCE, is beyond the resources of Unix Systems Laboratories alone to realise. Unix International's principal members are AT&T, NCR, Unisys, Sun, Motorola, Amdahl, Olivetti, ICL, CDC, Fujitsu, Toshiba, Fuji-Xerox, Oki and NEC. It remains to be seen how deep their commitment goes.

...MULTI-PROCESSING SVR4 MP OUT NOW

Unix International and Unix Systems Laboratories last week said that SVR4 MP, their standardised multiprocessing version of the operating system, is now available to the industry via Unix International's Early Access programme. The release, phase one of a two-part rollout expected to culminate next year, supports fully symmetric multiprocessing and provides a multi-threaded kernel. The early access version will run on 386/486 machines and support up to 10 chips. Motorola and Unisys are porting to the 88000. SVR4 MP owes a lot to technology contributed by NCR and was developed by Unix Systems Laboratories in combination with Intel, NCR, Oki, Olivetti and Unisys. Security and support for large-scale multiprocessing are to follow next year as outlined in Unix International's Roadmap. Applications already written for SCR4 should run unchanged on MP. Drivers written to SVR4's DDI/DKI standard should also work. The Early Access code supports EISA and AT buses with VME and MCA support to follow.

VISIX PLOTS FAR EASTERN COURSE TO SRA, GOLDSTAR

Visix Software Inc has signed exclusive marketing agreements with Software Research Associates of Japan and Goldstar Software of Korea to spearhead its Pacific Rim strategy. SRA will localise Looking Glass for the Japanese market and port it to most major Japanese platforms, offering engineering support and integrating it into their workstation-based systems. SRA, one of the first independent software houses in Japan, developer of Sony's Kanji Unix port for News and exclusive distributor of Network Computing Devices' X-terminals in Japan, will also package, market and distribute Looking Glass to the Japanese marketplace. The product will be available in Japan in the second quarter. Goldstar will localise, market and distribute Looking Glass in Korea starting in the third quarter and will bundle it with their Sparc clone and Intel-based systems. Visix is projecting that a significant portion of their revenues next year will derive from the Far East. Other PacRim partnerships are expected this summer. Meanwhile, Visix has also cut a three-year deal with Encore to bundle Looking Glass Professional with Encore's Unix-Based 90 family of machines. The pair will participate in joint marketing and sales. Projected volumes are between 250 and 500 units in the first year, Visix said.

OBJECT PLAYERS - AT SIXES AND SEVENS

At the eleventh hour and counting, last week factions inside the Object Management Group were still struggling to head off a showdown between HP/Sun and NCR/ODI on one side and Hyperdesk and DEC on the other. Sources close to the negotiations, which are aimed at consolidating all the surviving technology into a common submission to achieve a single standard, say the holdout continues to be HP (UX No 334). HyperDEC has officially agreed to endorse the HP/Sun CDL and combine their proposals despite its own reputedly superior technology. Sun appears to be less obdurate than its partner and has apparently adopted something of a mediator's role between HP and the others, with the pair reportedly going off to deliberate almost hourly. Their soulmate NCR is apparently not a factor. At least one complaint reportedly voiced against the notion of consolidation is the development time that would be lost if that path were taken - even though it is probably three to five years before anybody makes any money off this stuff. As we went to press last week, no agreement was expected. Participants thought the decision would go to a vote which is scheduled for Tuesday, June 4 at 2:30 in San Francisco. There are between 20 and 30 companies on the task force which constitutes the voting body. In view of the fact that only seven non-submitting companies showed up for the demos a couple of weeks ago, it is considered doubtful that all of them will appear to cast their votes on Tuesday. By their own admission, some companies at this point are simply befuddled by what it is they are supposed to be voting for. Others have a distaste for the politics that are dominating the situation and would prefer to abstain. However, a simple majority of the votes that are cast is all that will be required to win recommendation. That will throw the ball into the court of the OMG technical committee which meets to vote on the task force recommendation in July. A win there will require a two-thirds majority and could possibly even go against next week's winner. As the technical committee goes, so apparently does OMG. For that reason, participants in the negotiations reckon they have at least another month to come to an agreement. If it should go against them, it is believed HyperDEC will honour its pledge to support the HP/Sun CDL, label itself OMG-compliant and attempt to persuade the marketplace that the HP solution is neither complete nor sufficient for their needs.

DU PONT PIXEL SHIFTS TO i860 AND N11 FOR GRAPHICS BOARDS

Du Pont Pixel - previously benchMark Technologies until du Pont took it over back in 1988, (UX No 177) - has shifted its development efforts from the Intergraph Clipper RISC chip over to Intel Corp's i860 and its successor, the N11, due to be announced on June 7th. Du Pont's latest generation of products are heralded by the launch of the PX100 board, part of its Fusion programme to provide high-performance visual processing solutions for integration into OEM products. The PX100 uses four i860s in parallel, and is described by Du Pont Pixel as in the "mid-performance range" rendering around 165,000 polygons a second. Plans in the pipeline include the PX200, using four N11 processors at two to three times the performance, and a low-end model with a couple of i860s. Included with the board is Fusix, Du Pont's solution to the problem of getting the Intel processors to work together - Du Pont ignored the problematic PAX Parallel Architecture eXtended multi-processor environment, defined by Intel and Alliant in 1989 (UX No 254), but not yet completed. "We've had to configure our own multiprocessing environment, and are currently talking to Intel and other i860 vendors about it", said Du Pont Pixel marketing manager Neil Trevett. The 9U PX100 board will fit into Unix workstations, most often a Sun Sparcstation, and offers users the advantage of the GL 3D library, which emulates the Silicon Graphics 3D applications library. Du Pont has already won an endorsement for the PX100 board from Robotechnik, a German manufacturer of robotic and simulation equipment, which will use the systems for a tank gunnery simulator. The company is based in Weybridge, Surrey, but has a US base in Newark, Delaware, with distributors in Japan and Germany.

METRO READY WITH MULTI-USER i860 BOX

Metrologie UK Ltd's Metro Systems division, High Wycombe, Buckinghamshire, will have a new Intel 80860 RISC-based multi-user Unix system on offer within the next three weeks. The 40MHz Multibus M860 CPU comes from Mentec Computer Systems Ltd, Dublin, Ireland, the Unix V.4 operating system, box and other bits come from Intel, and it's being put together by Metro. The basic 40 MIPS system, with up to 32Mb RAM, SCSI and Ethernet - which are handled by an 80486-based controller card and 80386-based terminal controller - is being offered to OEMs and resellers which can then add their own software, disks and other peripherals. Metro will support a range of compilers and will offer the thing across Europe at a price of £18,000. Metro says it will be pleased if it sells 50 or 60 of the boxes in the first year of sales.

ORACLE SIGNS SOFTWARE ONE TO DO CASE EXCHANGE

Redwood Shores, California-based Oracle Corp has turned to UK start-up Software One Ltd, Bourne End, Buckinghamshire, for joint development of its Software One Exchange product. The aim is to develop a version called CASE Exchange that will enable Oracle's software engineering tools to work together with those from third party vendors to provide a "truly open CASE development environment". The two will work together to provide a family of repository-exchange products that support bi-directional data transfer between Oracle and other software engineering products, such as Information Engineering Facility, Information Engineering Workbench, Excelerator, and Telon. The idea is that a user could analyse system requirements using Oracle CASE Designer and CASE Dictionary, transfer the analysis information through CASE Exchange and generate a Cobol application using Telon, or define a system with third party CASE tools and transfer back to Oracle's CASE Dictionary to use Oracle's CASE Generators; CASE Exchange will enable multiple CASE products to co-exist while maintaining one common repository. CASE Exchange will be part of Oracle's CASE Bridge family, which will be extended in time to support a wider range of products and functionality.

IXI SIGNS UP MICROPORT, PYRAMID...

Latest converts to IXI Ltd's graphical X.desktop manager are Unix distributor Microport Inc, Scotts Valley, California, which will bundle X.desktop with the graphic module in its version of Unix SVR4, and Pyramid Technology, Mountain View, California, which will make the interface available on its MIPS Computer Systems-based MIServer T Series: Pyramid already has an agreement with Visix Software Inc to supply its Looking Glass desktop manager product.

...AS HP TAKES NEW WAVE ON THE ROAD

However, if UK firm IXI Ltd is serious about taking on Hewlett-Packard Co's object-orientated New Wave environment with an object version of X.desktop, (UX No 335), it is going have to follow the Californian on all sorts of travels. According to US reports, HP's tie-up with Sun Microsystems Inc on object-orientated networking technology for Unix - the widely previewed Object Request Broker - has spurred the firm to broaden its horizons even wider, and it is now said to be planning Unix and OS/2 client versions of its Windows-based New Wave environment: it may even do a version for Apple Computer Inc's System 7 Macintosh environment. First releases are planned for next year.

DEC HAS NEW Rdb RELEASE WITH SUN, WINDOWS SUPPORT, B1 SECURITY

Digital Equipment Corp has had to acknowledge the existence - and pervasiveness - of Sun Microsystems Inc workstations in the latest release of its Rdb relational data base management system for VAX/VMS. V4.1 includes a programming interface for Sun workstations and for Windows 3.0 applications, and support for TCP/IP. The company also says that the Rdb implementation of SQL has passed the complete suite of National Institute of Standards Testing to meet the Federal Information Processing Standard. Users can also now write SQL applications that are portable between Rdb and the Ultrix/SQL database bundled with its implementation of Unix, using source code converters for Ada, C and Fortran programs with embedded SQL. DEC claims that global buffering can increase query and update performance by as much as 25% in the new release, and it stores large image and text files with improved efficiency. The new release is due out in January 1992. The company also introduced SERdb 4.1, a version of the new release designed to meet B1 security requirements, again to be out in January. Version 2 of the Ultrix/SQL pre-processors for embedding SQL statements in C, Fortran and Ada programs will be out in June, and DEC Rdb Language Translators 1.0 will be out in November from \$60 a time to assist in translating existing database applications in RdbPre and RDML languages such as Fortran, Cobol, Basic and C to DEC's standard SQL language. There is also a new 4.3 release of the VAX DBMS net work database with global buffering and C2 security, which is available in December.

"FIRST 486 NOTEBOOK" FROM TEXAS FIRM

An unknown company out of Houston, Texas says that it has the first Intel Corp 80486 notebooks, and that they run Unix. The aptly named Notebook Computer Company expects to ship the three models of 486Notebook Workstation family this month. The things reportedly weigh 4.5-lbs, including battery, and measure 8.5 x 11 x 1.4 inches. Street prices start at \$4,500 for a 20MHz chip with a math coprocessor emulator, 20Mb hard disk and 6Mb RAM and run up to \$7,000 for a 33MHz 80486 with integrated on-chip maths coprocessor, 60Mb drive and 10Mb RAM. All three use a triple supertwist 10-inch screen offering a 640 X 480 VGA display and a 79-key keyboard. The company has come up with a special expansion pad that includes high-performance analog colour port (2000 x 1600 effective resolution, 700,000 simultaneous colours), a 1.44Mb 3.5-inch drive, Disney Sound audio with speaker, SCSI interface, keyboard port, second serial port, IDE hard disk port and optional second hard drive worth up to 100Mb. A Hayes fax/modem comes as an option.

LSI ATTRACTS DEVELOPERS TO LR33000

Milpitas, California-based LSI Logic Corp has introduced a development tool programme to support its LR33000 Self-Embedding processor version of the MIPS Computer Systems Inc R3000 RISC, launched last October. The FastTrack33K Programme is intended to encourage third-party suppliers to develop an array of tools to facilitate development of LR33000-based embedded applications. LSI claims that more than 50 companies are developing LR33000-based products such as laser printers, X-Windows terminals, disk controllers, protocol converters and military and avionic products. Companies so far offering products under the programme include Adobe Systems Inc with its PostScript Page Description language; Algorithmics Inc with its Gnu C and C++ compilers and debugger plus their own assembler and a C library in a range of Unix environments including SunOS, 80386 Unix and 80386 MS-DOS. Alsys Inc is developing its Ada development environment to the LSI Logic's LR33000 Pocket Rocket test board.

ICL IS POISED TO CONQUER SCANDINAVIA WITH ITS £330m ACQUISITION OF NOKIA DATA

ICL Plc is to take over the activities of Nokia Data, in a deal which values the Finnish systems integrator at £330m. At a briefing last week, ICL disclosed that it will pay £50m cash and hand over £180m preference shares, half of which will be converted into a 5% maximum ordinary shareholding in ICL when the company re-floats on the London Stock Exchange. It will also assume £100m of debt. Nokia Data's assets are valued at around £100m. In 1990 the company, which employs 7,000 staff in 10 European countries, turned over \$1,200m, down 5% on the previous year - 60% of revenues were generated in Scandinavia, the balance in central Europe. The deal, which is subject to approval by the Finnish government and the European Commission's Competition Directorate, is scheduled for completion on September 30. Conversion into ordinary shares must be completed within seven years of the completion date; the preference dividend is 8.827% net.

One Nokia director will sit on the board on ICL Plc as part of the deal. As usual, Peter Bonfield was quick to point out that the acquisition is being financed completely by ICL - Fujitsu Ltd's only input was to give its approval as 80% shareholder, an approval which was also obtained from minority shareholder Northern Telecom Ltd. Nokia Data, meanwhile, likes to think of the deal as a "merger", resulting in an enlarged European company with total revenues of some \$4,000m - \$3,500m of which will be in Europe - and an overall European staff of 24,000. After a tough year of losses and heavy restructuring in 1990, Nokia Data claims now to be on the road to profitability, on target to be back in the black by the year end. From ICL's point of view, the deal represents an opportunity to expand its personal computer, local area network and systems integration activities into the vertical markets of Scandinavia and strengthen its position in Germany, France and the Netherlands. Some 90% to 95% of Nokia Data's sales are made to direct to large corporate customers in the retail, government and finance sectors. Nokia Data, which has moved into open systems with its personal computers and local area network terminals, presents ICL with a perfect opportunity to complete its open systems portfolio. ICL aims to get its Unix systems into Nokia Data's vertical markets. And Nokia Data has a profitable and growing European service operation which ICL is glad to get its hands on, as part of its strategy of increasing its revenues from software and services. ICL actually began negotiations with Nokia Data back in the summer of 1988, but nothing ever came of them since STC, then in control, did not welcome the intrusion of a third party. Nokia Data, for its part, does not deny that the deal may present opportunities for the company to co-operate directly with Fujitsu - Kalle Isokallio, president and chief operating officer of Nokia, simply said that "no complete discussions had taken place. It seems that ICL and Nokia still have things to talk about between now and September, such as the make-up of the new management team, the future of Nokia Data staff, and the nature of future plant and product restructuring. Nokia Data has three small assembly plants - one in Helsinki for personal computers and two in Sweden for terminals, one of which is under closure. What ICL chairman Peter Bonfield did say was that some of its Taiwanese manufacturing will be moved to Europe in the future. ICL expects the acquisition to impact its earnings per share when Scandinavia emerges from its current depression - this will help ICL's re-floatation, which is scheduled to take place as soon as a share price of £2.25 is sustainable. When ICL re-floats, Fujitsu's 80% stake will be diluted - Bonfield points out that this was always the intention - Fujitsu will, however, remain the majority shareholder. Northern Telecom Ltd will also sell at least part of its 20% stake in the company.

Siemens-Nixdorf

It has been agreed that the Nokia Data name will be retained in Scandinavia for three years, while the ICL badge will be used elsewhere. As for Bull SA, with which Nokia Data was in discussion prior to its recent talks with ICL, this was according to Nokia Data's president Vittorio Levi, a totally different association - Nokia Data, as a systems integrator, represents Bull in Finland, and the discussions were about extending distribution into the rest of Scandinavia. Following differences of opinion between Bull and Nokia Data about the potential of the Norwegian and Swedish Unix markets, Nokia Data withdrew its proposals. It was suggested that Bull was not happy that Nokia Data would be pushing Tandem Computers Inc fault-tolerant machines and Sun Microsystems Inc servers alongside Bull's products. The Finland distribution agreement will, however, continue with Bull's consent. Similarly, Hitachi and Tandem distribution deals will also now be re-negotiated. ICL is likely to be the last resting place for Nokia Data, which started life as the computer arm of SaabScania AB and passed through Swedish state ownership and L M Ericsson Telefon AB. Hungry ICL is on the look out for further acquisitions but Peter Bonfield was adamant that Siemens-Nixdorf Informationssysteme is not in the running - the Fujitsu connection, he said, is largely irrelevant since ICL's relationship with Fujitsu is "purely at arm's length" - where have we heard that one before? Instead, ICL will be pursuing software houses for now.

...ADOPTS MICRO FOCUS COBOL/2 AS STANDARD FOR VME, UNIX AND MS-DOS

ICL Plc has signed a worldwide marketing agreement with Micro Focus Plc for the hardware vendor to sell the latest Cobol/2 products on its VME, Unix and MS-DOS systems. Under the agreement ICL users can buy Cobol/2 compiler for VME, which means Series 39 users can now run packaged software written to ANSI 85 Cobol standards. Developers can also write VME Cobol applications on ICL's Unix and MS-DOS systems.

THE SWORD OF DAMOCLES HANGING OVER BULL AS MME CRESSON CONSIDERS BANISHING NEC

France's new Prime Minister, Mme Edith Cresson, is shaping up to cause Groupe Bull SA major headaches. Mme Cresson says she is not only considering blocking the proposed conversion of NEC Corp's 15% stake in Bull HN Information Systems into a 5% stake in Compagnie des Machines Bull, but would also like to force NEC to sell the stake. As NEC builds the top-end mainframe line sold by Bull and also builds mainframes compatible with Bull's flagship DPS 7000 line, such a move by Mme Cresson may threaten the company with an onslaught on its core user base by NEC in partnership with one or more systems integrators. There has also been talk of Bull HN threatening to file Chapter 11 bankruptcy papers to reduce the amount France would have to pay for the 15% NEC stake, a move that would further undermine the company's standing.

DEC "READY WITH MOTIF PRODUCTS FOR SUN"

DEC was spotted at Sun Expo in Boston last March stalking Sun users with its implementation of OSF/Motif (UX No 323), and is now set to go ahead with an announcement of products for the Sun this Tuesday, according to UK trade weekly *Microscope*. Along with OSF/Motif itself, DEC demonstrated its VUIT Visual User Interface Toolkit application at Sun Expo, and will no doubt include this in the announcement. DEC has built up a number of Motif applications over the last few months, including DECWrite, DEC-present and its FUSE friendly user software environment, all of which could be sold to Sun users once the basic Motif environment is available to them. DEC has also been thinking of producing a version of its OSF/1 implementation for the Sparc (UX No 325). The announcements will be included as part of DEC's "Open Advantage" positioning announcements, due out of the US this Tuesday.

CRAY ELECTRONICS BIDS FOR SD-SCICON

Cray Electronics Holdings Plc last week made a hostile bid to acquire systems software house SD-Scicon Plc. The offer, which values the Milton Keynes-based company's ordinary shares at £111m is regarded by SD-Scicon as "opportunistic" and "without any merit", and although the board is considering the offer with its advisors, Samuel Montagu & Co Ltd, it is unlikely to yield to the offer. SD-Scicon, which reported net losses of £10m for the first half of 1991 on sales that fell 4% to £138m, is, in Cray's opinion, a company that isn't really going anywhere and that could benefit from a change in management. And, whilst the offer may not be under serious consideration by SD-Scicon, British Aerospace - which has a 25% shareholding in SD-Scicon - has, according to Cray, agreed to support the offer. Cray, which these days has the look of a brand new company, having appointed a new management team in 1989 and implemented a heavy disposal programme, is now firmly focused on telecommunications, instrumentation and software, and evidently believes that SD-Scicon would fit nicely into the company's corporate strategy. Confidently assuming that its offer will be accepted, Cray intends to combine its software systems division with SD-Scicon and "address urgently the fundamental issues of SD-Scicon's products, markets and management". It is unlikely, however, that Cray - in its ruthless attitude of disposing with anything that doesn't smell of its own blood - would hold on to SD-Scicon's US vehicle emission testing business should the acquisition go ahead, something which is not going to entice SD-Scicon into making any rash decisions.

KUBOTA ADDS TRICORD TO ITS PORTFOLIO

Kubota Corp, already a major investor in Stardent Computer Inc and a shareholder in MIPS Computer Systems Inc, has further extended its computer interests by paying \$3.4m for a 5.2% stake in Tricord Systems Inc of Minneapolis. Tricord specialises in 80486-based Powerframe servers that compete with Compaq Computer Corp's Systempro, and under the agreement, Kubota will make the server under licence in Japan, starting in July. It will market the machine as the Tricord Superserver and looks for first year sales of \$4.5m. Tricord raised \$8m in its second round of financing late last year, and with the new deal has won total venture capital finance of over \$20m.

SQL GROUP TO DEMO INTEROPERABILITY IN JULY

The SQL Access Group says it will demonstrate interoperability between different relational databases - Phase I of its technical specification - in July in New York. Phase I includes an embedded SQL specification for application portability and OSI remote database access for interoperability. Phase II demands a call level interface and TCP/IP support. The group has added seven new members to its ranks - Boeing Computer Services, Borland International, British Telecom, MCC, Mimer Software AB, Uniface and Unisys Corp - bringing its complement up to 40.

TRANSARC CLAIMS 100 AFS INSTALLATIONS

A year after shipping its first product, Transarc says it has installed its AFS 3 distributed file systems in over 100 sites worldwide including the US and nine other countries. The software, a version of which will appear in OSF's DCE, has attracted "many former NFS users," according to Transarc president Alfred Spector. Spector described the sites as 60% commercial, 30% educational and 10% government. Transarc is working with the US Defense Advanced Research Projects Agency (DARPA) on deploying a national wide-area file system. The purpose of the exercise, connecting forty AFS sites nationwide, is to document how collaboration is enhanced, within a single site and among geographically dispersed sites, when a user perceives no difference between accessing a local file or one remotely stored.

WYLE TO SELL OPUS SPARC'S

Wyle Laboratories is going to distribute Opus Systems' Sparc-based line using its Electronic Marketing Group to sell the boxes to its network of 450+ resellers in the US as well as turning them over to its direct sales force for resale to Fortune 1000 accounts. Under the agreement, Wyle will carry Opus' Personal Mainframe 5000 workstations and servers, its new 5000 Personal Mainframe PC add-in Boards and Opusengine motherboards which Wyle will distribute to resellers for integration into vertical market applications. Opus president Mark Johnston estimates the actual value of the deal to Opus at between \$3m and \$5m over the next twelve months, with Wyle paying Opus \$18,000 for an average system. Johnston, said Wyle, whose strength is on the West Coast, has already begun moving the product. Opus also has Pioneer, another classic distributor which like Wyle, sells DEC systems, on the East Coast. Johnston predicts that all the classical distributors are currently making significant investments in Unix and are in discussions to pick up the Risc product. Alignments should be in place, he said, in the next nine to twelve months.

FUJITSU SPEEDS UP G-MICRO CISC'S FOR THE TRON OPERATING SYSTEM

Fujitsu Ltd claims that its new MB-92301-25 and MB92301-33 contributions to the G-Micro collaborative family of microprocessors optimised for the Japanese Tron operating system are "the world's fastest complex instruction set chips". The 33MHz version is rated at 32 MIPS, the 25MHz version at 24 MIPS. They are sampling now at a pricey \$1,385 for the faster, \$1,000 for the slower, and Fujitsu looks to sell 10,000 per month once mass production has started. At the same time, Fujitsu announced a set of development tools that enable software for the G-Micro family of Tron processors to be developed on Sparc-based Unix workstations.

LIGHTNING COMPUTERS DRIVES 80486 AT 50MHz TO CREATE 22 MIPS STATION...

However, the three have all been bested by Lightning Computers Inc, San Francisco, which has launched a 50MHz Intel Corp 80486 personal computer claimed to be capable of running processor-intensive MS-DOS applications at 22 MIPS, "faster than any other personal computer on the market". There is officially as yet no such thing as a 50MHz 80486, and in order to prevent the chip burning up, Lightning has included a Peltier-effect microprocessor-controlled cooling module that lowers operating CPU temperatures to between 0 C and 4 C. The Lightning 486/50 has 4Mb to 32Mb RAM, prices go from \$9,755 to \$30,000.

...WHILST IBM, NCR WAIT IN WINGS...

IBM and NCR Corp are also expected to be quick off the mark with systems due by the third quarter built around Intel Corp's 50MHz 80486 part, which the chip-maker is expected to unveil at the PC Expo show in the US later this month. Indeed NCR Corp was showing-off systems based around the 50MHz part at the Comdex bash a couple of weeks ago. The System 3000 model 3447 has one 80486, the model 3450 comes with up to four. Both come with up to 128Mb RAM and 7Gb disk, prices go from \$14,500 and \$25,000 respectively. According to US reports, new IBM machines will be the PS/2 desktop 90 XP 486 50 and tower 95 XP 486 50. With 8Mb RAM and 320Mb disk, they'll come in at around \$20,000.

...AND DELL LAUNCHES NEW BOXES

Dell Computer Corp has launched three new desktops, including a smaller footprint 80386SX machine and two 80486 boxes: the System 320SX uses a 20MHz 80386 chip and costs from £1,250, or £1,540 including 2Mb RAM, 40Mb hard disk and super VGA monitor; the System 420DE uses a 20MHz 80486SX chip and costs from £3150, and the full 80486 box, the 433DE, uses a 33MHz chip and costs from £3,650; all are available immediately in the UK. At the same time, Dell said that it would from now on offer MS Windows 3.0 as standard on all systems, with a high enough specification to run it; more 80486SX and full 80486 machines are in the pipeline - rumour has it that Intel Corp has been using Dell hardware for test demonstrations of 50MHz and even 66MHz versions of the 80486 chip.

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Locus Computing Corp has signed up Hungarian hardware and software distributor, ISYS Computing Ltd, Budapest, to market its MS-DOS-to-Unix integration tools in Hungary: ISYS' managing director Zoltan Galfi says he hopes to begin selling Locus' software in other Eastern European countries in the near future.

The ACE consortium has penned a date sometime late in July when it is expected to make an important announcement of its software intentions - it'll include the all-important front-end, for which IXI Ltd and Visix Software Inc are still said to be in the running, (UX No 335).

The UK's Town and Country Building Society is phasing out its NCR mainframes and proprietary software in favour of open systems, and has initially opted for a £200,000 Sybase database system which will run on Sun Microsystems Inc 4/490 Sparcservers via a Sun 3/470 communications gateway at its Clacton-on-Sea and Ipswich sites: the Society's 79 branches use 350 workstations linked by an X.25 network.

Although a founder member of the Open Software Foundation, Siemens Nixdorf Information Systems has announced Sinix V5.40, a new version of its Unix operating system based upon Unix System Labs' SVR4 release: Siemens opted for the USL SVR4 route over OSF's OSF/1 operating system back in August last year, (UX No 294).

AT&T's intellectual property division, which markets software originally developed for internal use - its first product was Unix - has released a Microsoft Windows version of its Terranova communications software and an updated edition of Queing + Analysis, a graphical-based event simulation system, for Sun Microsystems Inc workstations and AT&T 6386 systems: Q+A costs \$7,500, no price for Terranova was given.

ICL has signed up to market Delft, Netherlands-based Westmount Technology's Information Systems Engineering Environment CASE tools on its Unix systems worldwide. And Westmount says it has integrated its OSF/Motif-based I-CASE analysis and design application with Hewlett-Packard's Soft-Bench programming environment for HP workstation users.

Optical systems house Fibernet Ltd, Aldermaston, Berkshire, has launched a new version of LightWatch, its network management system which now includes Sun Microsystems Inc's SunNet Manager and a graphical user interface: the firm claims it is a step towards enabling the building of cross-network graphical management systems and applications based upon the simple network management protocol - SNMP - under X-Windows.

Communications firm Serengeti Systems Inc, Austin, Texas, has introduced BSCLIB, a development tool for using the point-to-point and multi-point binary synchronous communications protocol, and 3780Link, a menu-driven 2780/3780 terminal emulator: both are available for Unix and MS-DOS in AT and Micro Channel Architecture versions - they cost from \$400 to \$2,200 and \$800 to \$1,200 respectively.

Nine companies are expected to roll-out new X-terminals at Xhibition in San Jose this week, including Northwest Digital Systems, Seattle; Japan's Marubeni Corp, Taiwanese Arche Technologies' monitor division in San Jose; NCR's Applied Digital Data Systems; Samsung; Kobusai Electric Co; and Pittsburgh Powercomputing. A further five firms are pitching in with product enhancements and toolkits for building graphical user interfaces.

Also at Xhibition, Network Computing Devices will be showing-off some new software that it has developed under the auspices of the X Consortium for inclusion in the next - X11R5 - release of X-Windows later this year: the new font server software allows all types of font formats to be used across networked equipment from different manufacturers, and NCD says it'll introduce its own product based upon the software by the end of the year.

Meanwhile TGV Inc will be demonstrating its new XView, X-Windows developers kit for VMS using Cygnet Publishing Technologies Inc's postscript Page Previewer software running under both Open Look on a Sun workstation and DECwindows on a VMS VAXstation.

Version 3.0 of Apple Computer Inc's A/UX Unix implementation is due out early next year: it'll sport Mac System 7.0 features like a sound manager, file sharing, balloon help, a data access manager and Apple events.

Hewlett-Packard Co has been awarded a \$30m order for workstations from Schlumberger Ltd over three years.

This Tuesday, June 4, Unisys Corp says it will introduce the computer industry's first "self-service" 32-bit 80486 workstation and server, "designed to fight the rising technical support costs of distributed computing"; no further details of what it really has in mind as yet.

ICL Plc's next release of its VME operating system is to support de facto standards including TCP/IP, says the company, enabling Unix systems from other vendors to be connected to ICL mainframes: Novell Inc's NetWare will also be supported; with these capabilities, ICL reckons that the new VME will be able to support 80% to 90% of all personal computer local networks.

Santa Cruz Operation Inc has released its SCO Xenix 386 2.3.4 enhancement to version 2.3.2. New features include the Korn shell, improved SCSI performance for AT-bus and EISA systems, a new games supplement, new peripheral device drivers and it comes on fewer floppies than its predecessor. 80386 and 80486 ISA and EISA versions are out now priced £450, a Micro Channel edition will be out in the autumn.

The AT&T/NCR transition team are still huddling trying to figure out what their combined product line is going to look like. Some decisions have been made but they don't want to let the news out piecemeal. Later this week they should be ready to talk.

The UK's Tadpole Technology Ltd, Cambridge, has a new intelligent graphics controller now available, the TP-IGCV, which includes a 40MHz TMS34020 graphics processor and a 68020 to handle input/output functions. With four serial channels, VT100 terminal emulation, optional Ethernet interface, up to 1Mb SRAM and X-Windows interface, the TP-IGCV costs \$5,670.

Epson Canada has picked up exclusive distribution rights to peddle Solbourne Computer's full range of Sparc-based boxes in Canada. The agreement marks Epson Canada's entry into the open systems marketplace. It said it had been looking for a Sparc partner. Epson will also support the machines with a team it has put together over the last four months. Solbourne has no real presence in Canada.

Stratus Computer Inc has signed distributors in Malaysia, Finland and Israel including Pemas NEC Telecommunications Sdn Bhd of Kuala Lumpur, Malaysia; Dataprep Holding Bhd of Salangor Darul Ehsan, Malaysia; Jertec Corporation of Espoo, Finland and Team Computers & Systems Ltd of Givat Schmuël, Israel. Team has already made its first Israeli sale to the First International Bank of Israel, one of the country's largest banks.

MIPS Computer Systems Inc co-founder Lester Crudele has returned to his roots, rejoining Motorola as vice president and assistant general manager of its high-end microprocessor division responsible for the 68000 and 88000 chips. Crudele, who was director of hardware development during the design of the MIPS R2000 chip set and at Stardent as corporate vice president of research and development, was a key designer of the architecture that became the original 68000, 68010 and 68020.

Frame Technology is putting a European Operations Centre in Dublin, Ireland: the facility will handle manufacturing of localised product, development, order processing, support and quality assurance. It will work together with the new Netherlands-based Marketing and Sales Support Operation the company is building.

JYACC, which put JAM, its 4GL presentation environment on Motif in January, is expected to announce a GUI for Open Look soon.

Amdahl has contracted for Accelr8's VMS compatibility software to be ported to its Unix-based mainframes.

Despite the sluggish economy, the organisers of Unix Expo International, set for October 30 - November 1 in New York, say that exhibitor registration is ahead of last year: 165 have signed so far versus 143 signed at the same point last year. The organisers, who cancelled the West Coast version of the fair for lack of support, expect the New York exhibition to attract a total of 225 exhibitors, up from last year's 192. Attendees are projected at 23,000.

One area of less than excellent product fit in the acquisition by Fujitsu Ltd affiliate ICL Plc of Nokia Data Systems is in Nokia's home market of Finland, where the company markets mainframes made by Fujitsu's arch-rival, Hitachi Ltd.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX® community worldwide

London, June 10-14 1991

Number 337

APPLE CONSIDERS IBM RIOS CHIP MAY SWAP FOR SOFTWARE TECHNOLOGY

The rumoured, but much disbelieved prospects of a cooperation between Apple Computer and IBM Corp, first printed here early in January (UX No 315), is now finally emerging from the shadows. According to Friday's Wall Street Journal, the two companies are considering a partnership that would see Apple licensing the RS/6000 RISC processor, while IBM took advantage of Apple's software technology. IBM has said that it would consider licensing its RIOS chip if the right offer came along (UX No 291). Apple has still to make its decision on a RISC chip, and according to the Journal, it is also considering Hewlett-Packard's processor. Either way, such a move would be a further blow to Motorola Inc, which was pinning its hopes on Apple's endorsement of its 88000 chip as a possible high volume backer. Motorola's only other hope, Compaq, recently chose the MIPS processor. On IBM's side, Apple software could help bolster IBM's struggling OS/2 strategy, especially since Apple's Claris software arm has been looking further afield towards OS/2 recently. It is unclear whether or not any takeover talks are on the cards. Neither company would comment.

ICL HAS CAFS-LIKE ACCELERATOR FOR UNIX

In a characteristically low-key manner, ICL Plc has sneaked out news of a great leap forward in database processing by adapting its Content-Addressable File Store hardware search mechanism to speed global searches of relational databases under Unix, the first version being for Ask Computer Systems Inc's Ingres database release 6.3. ICL is planning versions of the new Relational Database Search Accelerator for other widely-used databases, but in the meantime, the one for Ingres will be out at the end of the month for its DRS 6000 Unix server. The company sees the product being used primarily in decision support applications where ad hoc queries that range all over the database can really slow down other applications. The product consists of a board installed on the SCSI disk channel between the CPU and the disks; a device driver that is an extension to Unix System V.4, Ingres Search Accelerator software and the smart disk interface that is part of Ingres 6.3. ICL reckons that the product will significantly speed applications development by enabling potential bottlenecks to be by-passed. The Ingres Search Accelerator is initially available only in the UK at £10,000 for one board plus software and £20,000 for two boards plus software. Further boards are £5,000 apiece and up to nine can be installed in DRS 6000.

INTEL'S N-11 RISC CHIP ARRIVES AS 80860XP

Intel Corp has launched the eagerly awaited N-11 version of its 80860 RISC microprocessor, saying that with 2.55m transistors, the 80860XP is the world's most complex micro processor, suggesting that the previous most highly integrated had 1.2m transistors. The part delivers 100MFLOPS peak when clocked at 50MHz, but the firm gave no technical details although Littleton, Massachusetts-based Alliant Computer Systems Corp said that its parallel compilers are at last available from Intel for the 80860 family - parallel Fortran and C will be available in the third quarter, and noted that the 80860XP includes on-chip support for the Alliant-developed Concurrency Control Architecture. This provides synchronisation and control for multiprocessing. Alliant plans to have an 80860XP processor option for its FX/800 and FX/2800 late this year. It also says that the 80860XP has doubled data and fourfold instruction cache of its predecessor, and input-output is 2.5 times faster. The part is sampling now at \$560 for 40MHz, \$699 for 50MHz; volume in October.

AT&T SELLS ITS STAKE IN SUN AND TAKES THE PROFITS

Emulating the Grand Old Duke of York, having built its stake in Sun Microsystems Inc up to 19%, AT&T Co announced yesterday that it plans to sell its entire holding. The decision no doubt reflects the fact that after acquiring NCR Corp, AT&T will have no further need for Sun's hardware technology and can get any Sun software it needs on normal commercial terms. Sun has agreed to buy back 5m of the 19.1m shares held by the phone company at \$36.25 a share, reflecting the current market price, and the balance will be placed with institutional investors by Salomon Brothers Inc. Despite having bought shares representing a 15% stake in Sun at a premium, they are now higher and AT&T will show a £137m overall profit.

UK RADAR BID WINS OSF ANDF REQUEST

Japan became the first location in the world to hear the official announcement that the Open Software Foundation had concluded its Architecture-Neutral Distribution Format Request for Technology last week, Anita Byrnes writes from Tokyo. It has settled on the TDF technology from the Electronics Division of the UK Defence Research Agency, formerly the Royal Signals & Radar Establishment, as the core technology for the distribution format. Dr Rob Morel, managing director of the Foundation in Tokyo, made the announcement, noting that four products had been evaluated: HP-Code+ from Hewlett-Packard Co with the University of Virginia; PAL from Peritus Inc; TDF; and ULS from Siemens Nixdorf Informationssysteme AG. Reasons for the choice of TDF - it stands for Ten15 Distribution Format and is a high-level intermediate language compiler, included its wide support of programming languages such as ANSI C, Fortran, C++, Cobol and ADA. It had reference sites on a MIPS Computer Systems Inc RISC and a VAXstation and offered performance within 5% of that of native compilers, with the smallest ratio of ANDF program size to ordinary compiler executable size of 1.3. Dr Morel indicated that the reason for the six-month delay in making the announcement was that since last year the Foundation had been busy confirming with computer vendors and software houses that they would support the format, and that it was both "technically feasible and commercially viable". Use of applications binary interfaces for software portability, as supported by Unix International Inc and AT&T Co, was "a short-term solution," he said. Architecture-Neutral Distribution Format technology offered advantages for vendors, software suppliers and end users. Hardware vendors will be able to change their underlying architecture without losing access to existing software libraries, costing them less to carry a diverse hardware range; software developers will be able to concentrate on the functionality of their software instead of the issue of developing versions on different architectures; and users will have the benefits of ease of distribution of a wider range of mass market applications and better protection of investments.

OMG CALLS FOR JOINT DECISION OVER OBJECT BROKER BY AUGUST 26TH

The OMG task force took matters into its own hands last week to end the wrangling and heated political disputes hobbling its search for an Object Request Broker standard. It told the two finalists, whose own individual discussions failed to yield any agreement to join forces (UX No 336), to go off and merge their technologies into a workable joint submission. It gave them until August 20th to do so, extending its previously agreed timetable some weeks to accommodate the unforeseen development. Hanging over their heads if the warring factions should fail in their attempt, is the OMG's threat to throw out both of their submissions, reopen the RFT and start the process all over again from the beginning. The decision averts a potentially bitter and devious run-off between the forces of Sun/HP and NCR/Object Design on one side, and Hyperdesk and DEC on the other. If successful, it also gives OMG a stronger case for having forged a standard that can be widely accepted. The OMG is hoping the single proposal will include the strongest features of both submissions. Experts say there appear to be no overwhelming technical reasons why the two approaches cannot be melded together despite the fact that HP/Sun uses a static compiler-based technique while HyperDEC is dynamic and done on the fly. The task force decision was unanimous, indicating that all the submitters - who are all also on the task force and able to vote - finally conceded. At the eleventh hour the bickering had reportedly descended to pure politics, with Sun and HP remaining obdurate about trying to win. Hyperdesk and DEC had previously agreed to support the HP/Sun CDL. Exactly how they intended to do that remained unclear at press time since the HP/Sun camp as recently as last week were saying privately that they had no intention of making the CDL's interface definition available. Meanwhile, OMG got one of its most heart-felt wishes answered last week when IBM agreed to join. It'll have a vote now, same as Microsoft, another latecomer (UX No 323).

OSF, DEC AND HP CHOOSE NOT TO CALL FOR SUMMARY DISMISSAL OF ANTI-TRUST SUIT

OSF, DEC and HP answered Addamax's \$100m antitrust suit last week, and the news is more in what they didn't do than what they did. They didn't ask the courts for a summary dismissal of the suit despite their public characterisation of it as "sheer twaddle." A tactic such as asking for summary dismissal is relatively typical in cases such as this, where financial resources are so one-sided. A dismissal motion could take up to a year's worth of legal paperwork before the judge renders a decision. Lawyers with money to burn fancy this kind of "scorched earth policy" as a way to get the little guy to back off. Of course, when you proceed like that, it's best to be pretty certain the judge will rule in your favour and declare that the case has no basis in fact or in law. Otherwise you can look guilty without the case being tried. OSF, DEC and HP may not be that certain and, having a weather eye on the PR meter, may want to avoid any course that could jeopardise their marketing efforts.

USL TAKES OPEN LOOK INTERNATIONAL

With its eye on the global market, Unix Systems Laboratories says it will ship a new internationalised version of Open Look starting in August. The latest release 4i, jointly developed by Unix Systems Laboratories and Fujitsu, is supposed to enable developers to write applications that can be easily tailored to different cultures and national languages. It reportedly permits localisation without source code modification or recompile. It also supports local input methods such as Xwnmo for Japanese and interoperates with the internationalised XView from Sun. Unix Systems Laboratories will also be putting out release 4i of XWIN GWS that supports VGA boards and the Intel 386 ABI specification edition 2 (iBCS2). The Open Look GUI and XWIN GWS are offered, in source code form, as a bundled product in Graphic Services version 4i for use on SVR4 with MLS.

PRIME ADDS TO PRIME INFORMATION WITH IMAGING, SQL EXTENSIONS

Last week at its user conclave, Prime introduced Image Way, a new imaging system that is fully integrated with Prime Information, its Pick-based DBMS that runs on both its Unix and proprietary servers. The system is modular and includes subsystems, high-resolution PCs, LANs and printers that can be configured to individual customer needs. Entry-level pricing starts at \$170,000. Typical systems will go for \$600,000. And Prime Information has sprouted an SQL interface, putting it more into line with the rest of the industry. The Prime SQL conforms to Level 2 of the SQL data manipulation language, and allows for direct processing of SQL DML statements from within Info/Basic programs written on top of Prime Information. The Unix version of Prime Information, called Prime Information Plus, was introduced last August. (UX No 297).

SOFTWARE AG TAKES OUT NETWISE LICENCE

Software AG, still the biggest software company in the world, has licensed Netwise's RPC technology. The companies say their relationship will provide Software AG with Netwise code generation technology and network libraries to develop distributed applications across heterogeneous systems and networks. It will use Netwise's RPC technology to extend the networking capabilities of its Entire series of client/server products while increasing the platform availability of Software's Net-Work product line. Meanwhile, Netwise has extended its RPC for IBM mainframes to support DOS and LANs. It has added support for the Novell SNA Gateway. The new version will be available June 30 at prices that vary according to the platforms supported. Next quarter, the company intends providing the same PC-Mainframe connectivity for Windows 3.0 environments.

US AIRFORCE WANTS 300,000 PCs, UNIX FOR "DESKTOP-4"

The US Air Force wants another 300,000 PCs, one of the largest single buys ever. Part of what it's looking for are advanced systems with 200Mb of disk storage for spreadsheets, graphics and statistical applications that run Posix-compliant Unix, Ada, SQL RDMS, X-Windows, GKS and CGM. The RFP for what is being called Desktop-4 is currently available in draft, with the final version due this summer. By the way, the Air Force only wants to see working products already on the market, nothing in progress. Unisys Corp won the previous Desktop-3 award, but ran into some hiccups delivering 6,000 units a month.

...AS US TMAC DECISION FINALLY DRAWS NEAR

Meanwhile, the US Treasury department is expected to make a decision by the end of the month over the hardware for its massive Treasury Multi-user Acquisition Contract for the Internal Revenue Service. TMAC has been valued at \$1,200m. There are three consortia in the running: Aris and IBM; AT&T and Pyramid; and Hewlett-Packard and Lockheed.

FINAL STAGE OF INTEL'S TOUCHSTONE PARALLEL PROJECT "COULD USE CHORUS"

There are those inside of Intel Corp who are kicking around the notion of using the Chorus real-time microkernel as a way to commercialise Touchstone, Intel's massively expensive/massively parallel project. Phase three of Touchstone, the Delta machine, wound up using something like a total of 570 processors - a combination of i860 CPUs and 386 I/O nodes - supposedly producing a peak theoretical performance of 32 GFLOPS. A one-off research machine, it was bound for CALTech. Sigma is the fourth and probably final stage of the Touchstone project, and it seems that some bright lights at Intel have the idea that with Sigma all of that pricey research might be turned into something more profitable. To do that they need to have a more servicable operating system than the Mach they've been running. Chorus would make the machines more attractive to the European research community. Doubtless Intel will decide to adopt a dual path: Mach for US Labs, Chorus for the Boeings and GMs. Right now, however, the decision is fairly politized and no final decision has been made.

MIPS AND CADENCE DEVELOP DESIGN ENVIRONMENT FOR ACE CHIP

Heads up, ACE: MIPS and Cadence Design Systems have announced a jointly developed software design environment that will link Cadence's CAE Verilog-XL and VHDL-XL digital logic simulators with a high performance behavioral model of the R4000 chip. The model, available from Cadence in the third quarter for Verilog-XL, will allow developers to access a register transfer-level description of the MIPS design and simulate it within the context of a complete system. The model, which MIPS will maintain to ensure compatibility, is based on a fast compiled code technology. The R4000 model and interface will be priced starting at \$15,000. Availability with the VHDL-XL is scheduled for Q4.

INTEL SINGAPORE PLANT TO CLOSE

With its decision to make major investments in Ireland, Intel Corp has decided that its systems plant in Singapore is surplus to requirements and will close it by early next year at the cost of 350 jobs. Work will be transferred to Oregon, Puerto Rico and Ireland. All employees will get severance packages based on time served and some will be offered transfers. "Our Singapore employees have always been excellent, and we will work hard with them in their search for new employment," the company promised.

ICL SERIES 39 MAINFRAMES WILL

LINK TO ALIEN SYSTEMS OVER HYPERCHANNEL

The UK end of Network Systems Corp has teamed with ICL Plc to connect ICL's Series 39 mainframes to the outside world via its high speed Hyperchannel system. Previously Series 39s only connected to other vendors' machines via Ethernet, but the Hyperchannel connection will provide it with a bulk data transfer speed of one megabyte per second. The connection is made through Network Systems' Data Exchange Unit, for which the company has developed a single board host interface to ICL's Macrolan 50Mbps proprietary local network system. Other mainframe vendors that provide Hyperchannel connections include IBM Corp, Cray Research Inc and Unisys Corp and over the system the mainframes can be either local or remote, depending on the configuration of the Data Exchange Units. ICL's Phil Mossman says the company expects customers to use the link to transfer data over long distances to non-ICL machines, where previously they might have used an open reel tape.

NIPPON STEEL BAILS OUT ORACLE TO THE TUNE OF \$200m

Oracle Corp is being bailed out by Nippon Steel Corp, best known in the computer industry for being bes' friends with Concurrent Computer Corp and for its Librex portable computer venture. The Japanese firm signed a letter of intent to put up \$200m in total for an initial 49% of Oracle Japan - but Oracle's stake in its presently 100%-owned Japanese unit could rise back to as much as 75% depending on the cash it generates. The \$200m is met by \$100m of 10-year convertible subordinated debentures paying 9% and convertible into Oracle common at \$27.50 a share, maturing in 1999, 2000 and 2001, and \$100m of 6% convertible preferred stock that if converted to common offers a maximum total return of 14%, convertible into common at the ruling price four years from now. The maximum of Oracle common Nippon Steel can end up with is 7.6%; it agreed not to buy more for at least 10 years.

BUSINESSLAND AGREES TO BE BOUGHT BY JWP INC FOR \$1.30 A SHARE

Purchase, New York-based JWP Inc won whatever bidding there may have been for San Jose-based Businessland Inc, and yesterday announced agreement to acquire the company. It will make a tender offer of about \$1.30 a share for up 17m Businessland common and for all the struggling retailer's 5.5% convertible subordinated debentures due 2007 at \$250 per \$1,000 principal amount. The offer is conditional on at least 51% of the shares outstanding being tendered and at least 75% of the debentures. After completing the offer, JWP will issue JWP common for Businessland shares not purchased, at a rate working out at \$1.30 a share provided JWP shares remain in a range of \$21.50 and \$15.25; Businessland recommends acceptance.

FIBRENET INTEGRATES LIGHTWATCH HUB MANAGER WITH SUN'S SUNNET MANAGER

Aldermaston, Berkshire-based Fibrenet Ltd has integrated its Lightwatch hub management system into Sun Microsystem's multi-vendor network management line, SunNET Manager. Launched at the end of 1989, SunNET runs under Unix and is aimed at encompassing and controlling multi-vendor, distributed computing environments, by interfacing to existing management systems and providing control based on industry standards such as Unix and SNMP. Fibrenet's Lightwatch provides information and access to the company's Crossbow hub network, although via SunNET, information can be brought up on any other vendor's hubs in the system that support SNMP - hub vendors that have declared support for SunNET (and SNMP) include Cabletron and Synoptics. Lightwatch enables node by node control of Fibrenet's Crossbow hubs. Features include remote configuration, an alarm system and hub and port traffic analysis. The system has an X Window interface, although Fibrenet says extra software can be provided to enable Windows 3 and geographical network maps to be overlaid on the screen. The system also includes a "what if?" facility, so that a network manager can dry-run new configurations and simulate increased traffic levels. Bundled with a Sun Sparcstation, the system costs £15,000.

MORE BIG LAY-OFFS AT UNISYS

The relentless attrition at Unisys Corp continues, and the firm, which employed 126,000 at its creation and planned to be below 70,000 by year-end, now looks likely to be well below that figure. As the Wall Street Journal anticipated last week, Unisys Corp confirmed last Thursday that it wanted to cut its worldwide workforce by at least 2,000 employees, and that the cuts would be made across the company. Unisys is now halfway to its target of cutting debt \$600m this year.

INTERACTIVE SYSTEMS - THE NEXT GENERATION!

Interactive Systems Corp held its first annual developers conference in Los Angeles county's Universal City last week, and, borrowing from Star Trek, the event was billed as Unix System V.4 - The Next Generation.

William Fellows reports.

Dennis Peck, president and CEO, argued that Unix System Labs' decision to produce a "golden master binary" version for Unix on the desktop (UX No 328) has "changed the business model." Peck says the shift from supplying essentially raw code to almost end-user quality releases of its operating system technology will mean that resources the Unix developers and distributors like Interactive had previously spent transforming Unix into customer versions, can now be used instead to integrate other value-added services into their products, speeding up time to market. In the past, Peck explained, Interactive would hardly have had time to complete an end-user version of the latest release before an updated set of code was announced by AT&T. The dilemma then was whether to spend time and resources re-working it for the marketplace, or whether to strip out the new features and add them to the just-completed customer version of the previous release. This resulted in many different versions of Unix, all at various stages of development, finding their way onto the market, said Peck. Often, he said, up to 80% of the code supplied by AT&T had to be changed to produce solid, end-user quality versions of the operating system. Now, with almost complete implementations arriving at its door, Interactive can get on with building robust, value-added services - networking, a graphical user environment, Unix/MS-DOS integration and imaging - into its products. And now that Unix application binary interfaces are coming together for most processor architectures "it allows us to get serious about shrink-wrap", says Peck.

Interactive's Unix V.4 ships on June 15th

Following AT&T and Intel's decision to appoint Interactive as a principal publisher of Unix System V.4 (UX No 318), the Intel customer base has now, as expected, gone over to Interactive. The first product to result - Interactive Unix V.4 for Intel 80386 and 80486 architectures (UX No 334) ships on June 15th for PC AT and EISA platforms with a choice of Motif or Open Look interfaces. It's claimed to run 3,000 applications - including those available for SCO Xenix. The next release will include SCO Unix 3.2 and Intel Unix 3.2 compatibility, the VP/ix Unix to MS-DOS connectivity tool, and more graphical and hardware support. It'll be out by the end of the year.

Announcements in the pipeline from Unix International

Cunningham says Unix International will be making announcements on OSI, an on-line transaction processing monitor, object management, multi-media and the desktop metaphor over the next three months. Unix International vice president Dave Sandell added that other V.4 enhancements due over the next few weeks include new internationalisation features and system software that sits on top of Unix.

New ISV programme planned for later this year

Peck says the firm will also announce a new independent software vendor programme later this year, which will give its partners and resellers access to its worldwide distribution channels. Interactive currently has 15 offices worldwide, and 43 distributors, 30 of which are in Europe, 11 in the US, one in Japan and one in Australia.

Interactive to "colour-enable Unix with image software, CD-ROMs

The next project, says Peck, is to "image and colour-enable Unix SVR4" in conjunction with its parent Eastman-Kodak. This will include more peripheral support, drivers for scanners, CD-ROM and optical juke-boxes, Kodak's Photo CD technology and a colour fidelity calibrator - all accessible through a graphical user interface, with no need to see, or write, a Unix shell command line, Peck claims. In the first quarter of next year, Interactive will also ship its V.4 on CD-ROM, with two disks, one for the code itself, the other for the 29 manuals of documentation. They'll also be OEMming a CD-ROM player for users without the technology to load the operating system onto their computers. A Philips model was shown off at the conference, but Interactive says no decision has been made as to which supplier it'll choose. The company is also looking at the possibilities of distributing applications in the same way. After all, says Peck "there's a lot of un-used capacity on the CDs."

Government procurements worldwide spearhead V.4 support

Unix International claims 40 hardware, and 425 software manufacturers were shipping V.4 as of the end of the first quarter of this year. It says that by the end of this year, the procurement of Unix products by government agencies around the world will have totalled \$15 billion over the last 12 months. The latest to be treading that route is the South Korean government, which is said to have decided to call for open systems in all of its future procurement plans. Down under, the Australian government is reported to be moving in a similar direction, whilst the government in Japan is said to have announced that its first mainstream open systems procurements will start this year and next. Cunningham claims that there are now 18,000 applications available for Unix V.4, with a further 1,500 coming across from UI's independent software vendor programme, which, targeted at bringing VMS and AS/400 applications over to Unix, was initiated last year. 600 ISVs are said to have signed up for the programme, with two being added every day, supported by 190 porting centres around the world.

Unix - the movie "has epic dramas and comedy"

Speaking at the conference, in the shadow of Hollywood, Unix International president Peter Cunningham compared the Unix industry to the film industry. "Both have epic dramas, situation comedies and consolidation within their markets. Now they both have problems with understanding changes in distribution channels, and how these are affecting revenue streams." Cunningham believes the distribution channel issue "is the largest barrier we have in the way of achieving the explosive [Unix] growth predicted. There are going to be changes," he admitted, "and Unix International is encouraging some of those relationships to take place" he added. At the end of the day, both the Unix industry and the film industry are after bums on seats, he observed.

CONVEX PLUNGES INTO REAL-TIME WITH PREEMPTOR 5000 SERIES

With backing - including 30 seconded engineers from its Japanese partner steelmaker Nippon Kokan KK, which has a string of real-time software applications, Convex Computer Corp has come out with a pair of real-time minisupercomputers, the Preemptor 5300 and 5500, derived from its C-2 and C-3 processors. The 5300 comes with one or two CPUs, the 5500 with up to eight, and are implemented in BiCMOS and GaAs arrays. Features specific to the 5000 Series are internal real-time clock, user-programmable interval timers, and provisions for sending timer output signals to the outside world in response to external events and to conditions determined by the processor. The company has also gone back to first principles on the software and developed its own fully pre-emptive, fully interruptible real-time kernel because it decided that this would be much more efficient than adding real-time extensions to ConvexOS. The ConvexRTS suite comprises the RTS/rtk kernel; RTS/uxe time-shared development environment based on ConvexOS and therefore Berkeley Unix 4.2- and 4.3-compatible; X Window-based RTS/debugger; and RTS/analyzer. The machines have input-output bandwidth of 200Mbytes per-second and Convex rates them at from 50MFLOPS to 800MFLOPS. The 5300 is from \$349,000 and is out first quarter 1992, the 5500 from \$495,000, one quarter earlier.

CRAY "TALKING TO BOLT, BERANEK & NEWMAN FOR PARALLEL PARTNER"

Eden Prairie, Minnesota-based Cray Research Inc has so much ground to make up to get into massively parallel processing that it is casting around for a partner to get it onto the right track. The Wall Street Journal hears that the company is talking to Bolt, Beranek & Newman Inc, Cambridge, Massachusetts, with options ranging from a simple sharing of technology to outright acquisition of Bolt, Beranek by Cray - which would lead to a violent culture clash since Bolt Beranek is a gnomish tecchie company staffed by people more interested in startling breakthroughs than in making money.

BELL ATLANTIC SOFTWARE OFFERS DECnet FOR UNIX

Sudbury, Massachusetts-based Bell Atlantic Software Systems Inc is offering Digital Equipment Corp DECnet support software for Unix systems, and its first taker is Ing C Olivetti & Co SpA. The company reckons it is the first third-party vendor to develop and market a DEC-certified version of the network protocol. Bell Atlantic will license its Access for DECnet, to Unix providers. It will be available for hardware and software suppliers in the third quarter on a source licence basis. No word on the price.

ORACLE SIGNS SOFTWARE ONE TO DO CASE EXCHANGE

Redwood Shores, California-based Oracle Corp has turned to UK start-up Software One Ltd, Bourne End, Buckinghamshire for joint development of its Software One Exchange product. The aim is to develop a version called CASE Exchange that will enable Oracle's software engineering tools to work together with those from third party vendors to provide a "truly open CASE development environment". The two will work together to provide a family of repository-exchange products that support bi-directional data transfer between Oracle and other software engineering products, such as Information Engineering Facility, Information Engineering Workbench, Excelsior, and Telon. The idea is that a user could analyse system requirements using Oracle CASE Designer and CASE Dictionary, transfer the analysis information through CASE Exchange and generate a Cobol application using Telon, or define a system with third-party CASE tools and transfer back to Oracle's CASE Dictionary to use Oracle's CASE Generators; CASE Exchange will enable multiple CASE products to co-exist while maintaining one common repository. CASE Exchange will be part of Oracle's CASE Bridge family, which will be extended in time to support a wider range of products and functionality.

HEWLETT-PACKARD UNVEILS MUCH-IMPROVED OPENVIEW 2.0

Palo Alto-based Hewlett-Packard Co has launched Release 2.0 of its HP OpenView Network Node Manager systems- and network-management software for HP-UX and Sun Sparcstation workstations, claiming that it reduces from days to minutes the time it takes to manage multi-vendor TCP/IP networks on a site or campus, and suggesting that it thereby reduces costs and improves network uptime. Features of OpenView Network Node Manager Release 2.0 include Discovery, designed automatically to discover, map and continuously monitor all network and system resources across a site or campus TCP/IP network. It "discovers and maps the entire network in minutes - a task that could take hours or days and would be subject to error if it were done manually," the company says. It tracks devices regardless of the hardware vendor and updates the network map if there is a change in status of a device. Single View Management enables user-developed or third-party applications to be integrated with OpenView "in just a few minutes," enabling network managers to monitor the entire network at a glance and invoke other necessary applications via the OpenView interface on a single station, eliminating the need for a variety of stations dedicated to specific hardware vendors' equipment and facilitating network management. Dynamic Data Collection and user-defined Thresholds are designed to provide users with the information needed for network planning and trouble-shooting. Users can gather historical network data for any numerical management-information-base element on any Simple Network Management Protocol device. Users also can define event thresholds for any numerical base element. And Application Builder is conceived so that users or developers can easily create applications to manage SNMP network devices - and the company claims it to be an industry first. HP OpenView Network Node Manager Release 2.0 lists for \$15,000 from this month.

OLIVETTI LAUNCHES PYRAMID-BASED LINE AND 80486 MPs

The Olivetti Systems & Networks arm of Ing C Olivetti & Co SpA picked Monte Carlo for the launch of its high-end systems from Pyramid Technology Corp (UX No 318), unveiled by Pyramid itself back in April (UX No 329). Introduced as the LSX 6500, the new RISC-based system is rated at 300 MIPS, is aimed at the transaction processing and database management market and runs under Unix System V.4. Three models are offered, with the top end 6550 supporting up to 1,000 users and coming with 12 microprocessors. It uses the MIPS Computer Systems Inc R3000 chip with a memory bus running at 80Mbytes per second while the input-output bus has a 40Mbytes per second transfer rate. Each processor has a primary cache of 64Kb for instructions and 64Kb for data as well as a 4Mb secondary cache. The LSX 6540 is a departmental system that supports up to 512 users and is configurable with up to four microprocessors. The entry level system takes one or two microprocessors and supports up to 128 users. The company also extended its LSX 5000 family, built around Intel Corp iAPX-86 family chips and manufactured by Olivetti in Cupertino, California. The LSX 5030 and 5040 use a symmetrical double bus multiprocessor architecture and they can support up to four 33MHz or 50MHz 80486s. The system bus has a transfer rate of 150Mbytes per second, a 64-bit data path, memory expansion up to 256Mb as well as 30Gb of mass storage. Both run under symmetrical Unix System V.4. Olivetti says that it is developing an entry-level workstation for LSX 6500 family that will be based on the Advanced Computing Environment specifications, but no date was given for that. The company also announced a number of strategic agreements, including a technical one with Unix System Laboratories that makes the Tuxedo transaction processing system available for Olivetti's Open Systems Architecture, and casts further doubt on the rival NCR Corp Top End product surviving the merger with AT&T Co. Olivetti will also implement DEC's DECmcc communications software under a five-year worldwide licence. Oracle 6.0.31 with a transaction processing option and Informix OnLine 4.0 are now available for the machines. Prices start from £50,000 to £60,000.

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The Weekly information newsletter for the UNIX © community worldwide

Usenix is actually going to be talking about something interesting next week at its get-together in Nashville, Tennessee, home of country and western music: it's highlighting its Multimedia panels.

Another show to make a note of is AIX Expo '91, a reprise of last year's AIX World but apparently under new management, although the International Technology Group is still putting the conferences together: dates are September 30-October 3 this time in Santa Clara, California.

In one of the biggest X-terminal contracts yet, US West Communications Inc has bought more than 1,500 TekXpress colour X Window terminals from Tektronix Inc for a customer service transaction processing application: it is taking mainly 19" XP27 models, with 1,152 by 900 resolution, and some 19" XP29 models with 1,280 by 1,024 resolution; order value likely exceeded \$3m.

Unisys Corp is a little closer to its target of cutting its borrowings \$600m to \$800m this year with the sale by Unisys Credit Corp of \$131m of lease receivable-backed certificates, which are rated AAA by Standard & Poors Corp: the certificates represent a fractional undivided ownership interest in a grantor trust whose property includes Unisys lease receivables and related rights and interests.

Cincom Systems (UK) Ltd has announced immediate availability of its Supra relational database running under Santa Cruz Operation Inc Unix, IBM Corp's AIX and on the Sequent Computer Systems Inc Symmetry series: also, there will be a beta test of the Mantis fourth generation language for Unix in the fourth quarter; Ron Drake, Cincom's managing director, acknowledges that Cincom is focusing on Unix rather than the AS/400, but he believes that IBM's proprietary offering will see a loss of market share in the mid-1990s, a view endorsed by both International Data Corp and the Gartner Group Inc; Drake says that Cincom's life-cycle product will not be announced under Unix in the near future, but these announcements mean that significant components of the AD/Advantage system now operate in both proprietary and open systems environments.

Not too wrapped up in its massively parallel supercomputer development programme to neglect its power-hungry customer base, Cray Research Inc has confirmed that it will be launching its 16 GFLOPS Y-MP 16E supercomputer early next year: its first customer shipment is scheduled for January - four systems have been ordered by this undisclosed but "valued" customer and these will be linked by fibre optic cable so that one very intensive numerical application can be run across four of the 16 processor machines for a total of 64 processors; Cray claims the new system, internally coded the C-90, is ahead of its competitors' products by factors of four and five; also scheduled for release around the same time as the Y-MP 16E, is the \$300,000 Y-MP EL entry-level machine, somewhat cheaper than Cray's \$30m high-end machines; future releases include the 64 GFLOPS Triton, due 1995, the 200 GLOPS-plus Triton-X, due out 1997.

And Cray Research Inc has been psyching itself up to compete in the growing commercial market for supercomputing: the company is currently involved in a research programme towards the development of a multiple-instruction-multiple-data design massively parallel supercomputer; as part of this programme, the Eden Prairie, Minnesota company is working on a "special processor" which will replace the existing functional unit in a Y-MP system with an application-specific functional unit - basically enabling the recycling of existing systems to provide much more speed, for dedicated commercial applications such as image processing; Cray's future massively parallel machines are to yield the TeraFLOPS performance necessary for car and aeroplane manufacturers simultaneously to process data from crash simulation and aerodynamics calculations.

IBM's Tuesday announcements this week are expected to be Model 35 and 40 AT-bus machines, and the Model 57SX Micro Channel PC, all using the 80386SX chip: IBM will also highlight MS-DOS 5.0, formally launched by Microsoft Corp that same day.

Interactive Systems Corp engineers are understood to be working with IBM in Austin, Texas on "numerous" RS6000 projects.

Announcements in the pipeline from Unix International Cunningham says Unix International will be making announcements on OSI, an on-line transaction processing monitor, object management, multi-media and the desktop metaphor over the next three months. Unix International vice president Dave Sandell says that other V.4 enhancements due over the next few weeks include new internationalisation features and system software that sits on top of Unix.

According to USL's Joel Applebaum, by the middle of next year, after the release of its "golden master binary" desktop Unix and graphical front-end metaphor, "you won't recognise Unix." By this time, he says, users will be able to do everything they want to in Unix by moving through window sets, without ever having to go to the Unix command line. (Just like you can do with the Mac and NeXTStep already). The environment - demoed at the conference, in an early guise, can be configured to the Open Look style, but is claimed to be "much more than a graphical user interface.

Following the release of Motif products for Sun Microsystems - (UX No 336) DEC has now agreed to develop an Open Look to Motif converter in conjunction with the Expert Object Corp of Lincolnwood, Illinois, called PLSconvert. EXOC will ship the software for DECstations and Sun workstations from the fourth quarter, with prices from \$2,500.

We don't know how they figure these things out when the technology isn't even developed yet, but Forrester Research is predicting that OSF's DCE will overtake Unix International's Open Network Computing technology in 1995.

Unix Systems Labs' new logo looks like a fir cone stood on its head - it has seven bracts representing the seven layers in the OSI protocol stack.

You knew all these wonderful new toys we have were self-defeating, and now comes the confirmation from about as high up as you can get: Digital Equipment Corp chief Ken Olsen says he never reads his electronic mail because his mailbox is always stuffed with so much junk.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

17 JUN 1991

The weekly information newsletter for the UNIX ® community worldwide

London, June 17-21 1991

Number 338

TOP END BEATS OUT TUXEDO AS NCR PRODUCTS WIN OVER AT&T

Top End has won the transaction processing monitor battle with Tuxedo, and the Pyramid Technology Corp machines to be phased out over time: those are the conclusions of the key conflicts in the harmonisation of the AT&T Co and NCR Corp product lines. The convergence teams have decided that NCR's Top End has superior technology to Tuxedo as well as being compliant with X/Open Co Ltd's XGA+ standard. The flagship product line is clearly NCR's Open Co-operative Computing Architecture and System 3000 seven level family of Intel iAPX-86 family machines, and on the Pyramid machines, word is that System 7000 will continue into its next planned upgrade and users will be given the option to migrate to System 3000 without being pushed into it as long as they are happy with the 7000 architecture and packaging. The 3B2 will have one more enhancement before users are led onto a migration path to System 3000. AT&T of course has several Intel-based systems of its own - StarServer S, 6386 WorkGroup Systems - which will continue to be marketed to existing users with the System 3000 the upgrade path - but the StarServer FT fault-tolerant machine will continue indefinitely because NCR has no direct counterpart. The other area where there is substantial conflict is in office software, and once again, NCR's Co-operation wins out over AT&T's Rhapsody, although the two will continue to be marketed, with Rhapsody features subsumed into Co-operation Release 2, where the Business Orchestration workflow component of Rhapsody is a major feature. NCR Comten will continue to build IBM compatible communications processors, and strong Systems Network Architecture support is said to be a feature of the combined product line. In networking, Starlan will continue to be offered. Both companies use LAN Manager, but StarGroup LAN Manager Server from AT&T is understood to become the core product running on System 3000. Laptops are pretty short-life products but NCR's 3120 Notebook will be the major offering with AT&T's Safari portable continuing to be sold via the existing AT&T dealers. Unix System Labs takes over responsibility for Tuxedo, which it will be marketing in competition against its parent.

HEWLETT, NCR JOIN FORCES ON DISTRIBUTED MANAGEMENT

Hewlett-Packard Co and NCR Corp last week announced that they would work together on technologies that each company has separately submitted in response to the Open Software Foundation's Distributed Management Environment request for technology. The companies have evaluated each other's submissions and identified components of each that could be combined to bring products to market quickly. Hewlett-Packard has endorsed NCR's Object Manager implementation of system-management technologies for managing computers running Unix and MS-DOS and NCR has endorsed the Management Framework technology that was jointly submitted to the OSF by Hewlett-Packard and IBM Corp. The Distributed Management Environment is conceived to establish a vendor-neutral framework for development and applications that manage distributed-computer systems and networks. NCR also supports the framework for its use of the Consolidated Management Application Programming Interface, which was developed as a standard management programming interface by Hewlett-Packard and Groupe Bull SA with assistance from IBM, Siemens-Nixdorf Informationsysteme AG and others. The programming interface is being offered to the OSF and X/Open Co Ltd as the link between components of the Distributed Management Environment that will help developers to minimise the time it takes to create management applications and make it easier for users to integrate their applications with management software from multiple vendors. Although NCR Corp is committed to Unix System V.4, it is a member of the Open Software Foundation, as revealed here a few months back, as well as of Unix International Inc. Hewlett is a Foundation sponsor.

FORD SECURES 88000 RISC FUTURE

Despite the lack of any block-busting design wins for the Motorola Inc 88000 RISC from computer manufacturers, the future of the chip is now guaranteed for the indefinite future following a contract awarded to the Schaumburg, Illinois company by the Ford Motor Co to develop a microcontroller version of the part that will become the Dearborn, Michigan automaker's standard device for engine and transmission control. Ford currently uses Intel Corp microcontrollers for the function, making the contract a knock-out design win for Motorola; it is also said to be the first time a car maker has moved to RISC for control functions. The contract with Ford should enable Motorola to cost-justify continued development of the CPU version of the microprocessor indefinitely even if it fails to win any industry leaders to the part, and give software developers confidence to continue to do versions of their applications for it. The 88000 has another string to its bow too, because it has won early interest from telephone exchange manufacturers.

SUN DEBUTS DISTRIBUTED COMPUTING TOOL

SunSoft, the new Sun subsidiary, is formally debuting its first product, ToolTalk, this week aimed at application interoperability in distributed computing environments. The software, which has been 18 months in development, six weeks in beta and has reportedly attracted a hundred developers, is meant to ease communication between Unix applications on a network. It is said to be part of a comprehensive software environment SunSoft will unveil later this year. ToolTalk components include an API, library and communication service which hooks into an RPC. Currently SunSoft has it implemented on Sun's ONC/RPC but its future implementation on other RPCs is hinted at by SunSoft officials who decline to discuss what they call "the distribution mechanism" until the fourth quarter when pricing and platform availability will be revealed. ToolTalk is to be demonstrated this week by the CAD Framework Initiative, the consortium that defines CAD standards, at the Design Automation Conference in San Francisco running on heterogeneous hardware from DEC, HP, IBM, Intergraph and Sun that is strapped together via ONC. Cadence, Harris Scientific Calculation and Viewlogic will show their applications transparently communicating with one another. The product is not limited to Unix but will work on any multitasking operating system, its handlers say. It is meant to operate above the RPC level and insulate the user from needing to know where the data is. ToolTalk is intended to handle both the older procedurally based applications that form the mass of products available today as well as the up-and-coming object oriented-based ones by communicating via multicast and object oriented messaging. ToolTalk has already garnered endorsements from Lotus, Valid, Clarity, Cadre, IDE, Saber Software and Sweden's Ellementel Telecom Labs.

BIG NAMES STAY AWAY FROM EUROPEAN UNIX SHOW AS RECESSION BITES

Many of the big names in the Unix industry are absent from the European Unix User Show this year, as companies cut back on costs due to the recession. Bull, Data General, Hewlett-Packard, IBM, ICL, NCR, Olivetti, Sun and Unisys Corp are only represented at the show through the sequence of free seminar sessions running alongside. Others, including Arix, Philips, Siemens/Nixdorf and Silicon Graphics, have no direct representation. This leaves MIPS, Motorola and Sequent as just about the only sizable manufacturers on the show floor. Software vendors not at the show include Informix, Oracle, Tetra and Uniplex, while the Open Software Foundation, Unix International and SCO are holding seminars, but have no stand. The show is to be held on the main floor level only this year, with no gallery stands. The European Unix Show is the longest running UK open systems event - it may be that the launch of the rival Open Systems Show two years ago has contributed to the decline. The Open Systems Show takes place in November.

New - or nearly new - at the Show

Maidenhead-based **Univision UK** is showing its updated image processing software environment. Arabesque version 1.2 provides facilities for video capturing and displaying of imaging. The package runs on a wide range of Unix platforms, and uses OSF/Motif to provide the graphical user interface. Two libraries are provided for the applications programmer: an image processing library based on PIK, the Programmer's Imaging Kernel, and a graphics library with more than 100 2D and 3D graphics functions. **IT Security International** of Welwyn Garden City is showing its Link product, launched in November 1990. Link is an object-oriented toolset which enables emulation of proprietary terminals and protocols in networked environments. **Hummingboard Communications**, the Canadian-based company, is now represented in the UK by **Systems Marketing Ltd** of Hungerford in Berkshire. The company is showing the HCL-eXceed product line of PC X-server software. **Empress Software UK** is announcing the release of Empress version 4.6 at the show. New features include the implementation of shared memory, mapped files, buffer pools and shared libraries. Cambridge-based **Unipalm** has a new release of its X11/AT X window system server, designed to operate within Microsoft Windows 3.0. It provides cut and paste capabilities for the transfer of full windows or defined portions between X and MS-DOS applications, using a rubber banding technique. **Motorola Computer Systems** of Maidenhead is presenting its new imaging applications in the shape of the MultiPersonal Imaging System. This includes a variety of hardware and software tools, including a scanner to capture images into the system image utilities for system management, and an image editor which allows enhancements to be made to photographs and created drawings.

I/O boards make their debut

Board manufacturers are queuing up to make announcements at the show. UK company **Specialix** has begun shipping its Transputer-based RIO I/O system for PCs, while competitors **Chase Research** is launching a new version of its Iolan-8 terminal concentrator, along with software enhancements. From the US, **Arnet Corp** is introducing a cluster controller for up to 512 users - the same claim as **Specialix**. And **Equinox** is to announce a distribution deal with **Northamber** for its RISC-based Megaport boards. And **Motorola Inc** has introduced the MVME167, a 68040-based single board computer.

Programming and networking tools take a stand

Hardware announcements often dominate the headlines, but this year the launch of **McDonnell Douglas' Series X** seems to be one of the few launches on the cards (see page 7). Anyway, most visitors come to trade shows with the objective of seeing the range of available software on offer. Among the more interesting new products on show are a modular set of advanced software development tools from French company **Ilog**, available in the UK for the first time through **Signal Computing Ltd** of Guildford. The modular toolset goes under the name of **Adept** - advanced development environment programming tools - and runs on workstations and PCs from Apple, Bull, DEC, HP/Apollo, IBM, MIPS, Sony and Sun. It includes a fourth generation language, graphical user interface and a tool to link up with proprietary relational databases. They work within an integrated programming environment called **Le Lisp**. Also launched at the show will be a new graphical reporting tool called 'a la Carte' from Dutch company **UniFace**. The tool will enable non-programming end-users to access data from one or more databases and server products, and to build reports without database programming knowledge. The product is available on MS-DOS, OS/2, Unix, VMS, Ultrix and VOS platforms. The recently released **Reflection Network Series** from **WRQ Inc**, will be shown by **Wick Hill Plc** of Egham Surrey. RNS is a software solution to network/host connectivity (PCs connecting to Unix, VAX, HP3000, 3Com and Novell) with a starting price of £99.

INDUSTRY "IS CLOGGED WITH POLITICS"

BusinessWeek managed to wash some of the industry's dirty linen in its June 10 cover story "Computer Confusion". The politics that lie behind the welter of choices a user must make to arrive at a buying decision is responsible for as much as 39% of them deciding not to decide at all, the editors say. Their story details how "computer makers are trying to bend the standards to their advantage...Hence the formation of groups such as OSF and the continuous series of deals, alliances, and endorsements that punctuate the industry...The overall effect of these coalitions, say critics, is confusion and delay. That suggests Intel's [David] House may be intentional. "The oldest marketing technique in the world is to create confusion if you're losing," he says. "There are a lot of companies spending a lot of money to create confusion. By distracting the market with new proposals and consortiums, companies that are behind in technology can buy time." [Peter] Griffiths of the Hoskyns Group, [in London] has a similarly cynical view, which puts a new spin on Karl von Clausewitz' famous dictum about war being the practice of diplomacy in another guise: 'Standards bodies and industry alliances are the continuation of competition by other means'...[And] while the consortiums may be a good way for computer makers to cope with standards, they also may have an unintended negative effect for computer buyers. The University of Illinois' [Robert] Dodds [who's looking for a million dollars worth of equipment for his civil engineering research lab] ...fears that by the time such groups get finished accommodating each member's interests, they won't come up with a standard that has the most advanced technology. Open-systems standards, he says, 'give vendors an excuse to be mediocre.'"

X - MARKING THE COMMON GROUND IN A FRAGMENTED INDUSTRY?

Although the Unix industry is at a particularly fractious time of its life at present - even the once less-secular Interactive Systems and SCO are now effectively aligned with the rival Unix International and Open Software Foundation camps - X-Windows is one tune that all parties concerned are playing to, even if it be on different instruments. The growing significance of the annual Xhibition show in San Jose, California, is a testament to this irresistible quest for common ground in the midst of a complex unfolding of new technological and marketing paradigms. As in previous years, Xhibition brought all of the protagonists together where they jointly hosted everything from keynote addresses to tutorials. William Fellows reports.

HP reveals multi-media features "to appear in New Wave"

At Xhibition, Hewlett-Packard's general manager of its personal systems group, Robert Frankenberg, revealed that it has been using a multi-media test product for communications and computer training internally for some time now, features of which will "show up in NewWave applications and Object Request Broker standards." Known as Comedian, it includes E-Fax, personal video communications, training techniques and the most popular feature amongst its users, a shared whiteboard, or scribbling pad, which allows messages written on one system to appear simultaneously on a whiteboard on another system in the network. Frankenberg says an inference engine and expert system will also be going into NewWave soon.

Early ACE version shown - but ISVs must wait

The ACE consortium turned out in force at Xhibition, with presentations and tutorials aimed at trying "to dispel some of the confusion we caused with this announcement back in April," according to SCO vice president Doug Michels. The rationale behind it, he explained, is that "we think the mass market ACE will create will be bigger than that which can be realised by the individual members." At the same time "ACE is trying to be loyal to those things that were successful in the personal computer revolution," to achieve its goal. The so-called "second wave" of members that'll join the original 21 will be revealed later this month. There are now said to be at least 15. Visitors to the SCO booth were treated to first public viewing of an early iteration of ACE's little-endian version of Unix. This base version 3 was using DEC's OSF/1 with pieces of IXI's X.desktop as the front-end - but this is not the version that will go out to ISVs as a development platform. They will have to wait around until the end of the year for base version 4, the rudiments of which should be pretty well in hand in another month or so. The tricky, time-consuming part is deciding just what goes into the kernel and what into the firmware based hardware layer, the ACE invention meant to make the operating system as hardware independent as possible (UX No 335). Hardware vendors like Compaq, however, aren't waiting around, and are busy creating non-ARC prototypes, not production machines, and porting the system over. Compaq is obviously not waiting for the MIPS R4000 chip, now sampling, figuring that it's for multi-processors anyway. Meanwhile, SCO hopes to bring ACE's RISC and Intel versions into synch so that future enhancements in one will be followed "within months". This is unlikely to be possible before 1993, SCO said.

Pacific Rim companies invade X-terminal market

Pacific Rim companies made the biggest splash at Xhibition in launching new hardware, with at least five new launches. As expected (UX No 332), the Fremont, California-based subsidiary of Taiwanese outfit **Arche Technologies**, introduced a 14" colour X-terminal based upon the AMD29000 20 MHz RISC processor. With from 2Mb to 10Mb RAM and 1024 x 768 resolution, the X5800 starts at \$3,200. 17" and 21" models will appear later this year. And **C. Itoh Co Ltd's** CIT-XE family of X terminals, first introduced in Japan two years ago, are now available from its Irvine, California-based subsidiary: prices go from \$3,000 to \$6,000. **Marubeni International Electronics Corp**, Santa Clara, California, debuted four new X-terminals. The monochrome 16" SSX16 and 19" SSX19 come with from 2Mb to 8Mb RAM, 1024 x 1024 and 1280 x 1024 display resolutions respectively, and cost from \$2,300 and \$3,400. Tokyo-based **Japan Computer Corp's** Fort Lee, New Jersey-based subsidiary released three X-terminals based around 33MHz Motorola 68030 parts, the 12" monochrome Xface, with up to 16Mb Ram; the 21" colour SuperX, with up to 32Mb Ram; and 17", 20" and 21" versions of the 16m colour FX, with up to 32Mb RAM. No prices were given. **Samsung Electronics Co Ltd's** San Jose-based subsidiary introduced the 20MHz Am29000 RISC-based SGS-17C colour X-terminal - with up to 10Mb RAM, it's the second in a planned series of the things, and is out in the third quarter, no prices given.

...as X software gradually emerges

Felton, California-based **CrossWind Technologies Inc**, is to offer Madrid-based **Afina SA's** X-based time organiser on a range of Unix platforms in Spain and Portugal. And following the release of Motif products for **Sun Microsystems Inc** platforms (UX No 336), DEC has now agreed to develop an Open Look to Motif source code converter in conjunction with **Expert Object Corp**, Lincolnwood, Illinois, called PLS convert. EXOC will ship the software for DEC stations and Sun workstations from the fourth quarter, prices will start at \$2,500. **Kovi Design Automation**, Santa Clara, California, introduced a Motif and Open Look graphical user interface builder - MOB - which allows users to create both Motif and Open Look front-ends in a single iteration: it's out on a range of Unix workstations, priced from \$2,500. **IBM** has signed up for Palo Alto, California-based **Neuron Data Inc's** Open Interface GUI development tool which it will port to and offer on its RS/6000 platform. **Pittsburgh Powercomputing**, Pittsburgh, Pennsylvania, unveiled version 2 of its X-station/340 X-Windows server for **Texas Instrument's** TMS340 x 0 series of graphics processor, now increasingly used by X-terminal manufacturers.

COMPUTER POWER's CAMPAIGN TO MAKE TODAY THE APPLICATIONS GENERATOR OF TOMORROW

The Today applications generator, one of the doughty handful of Australian software products that have broken onto the world stage, has had a chequered history but it is again alive and well and nestling in the Computer Power portfolio. Katy Ring has been hearing more.

What appears to be the first public launch of an application generator able to cope with true multi-dimensional client-server computing occurred in London a few weeks ago courtesy of the Australian company Computer Power Group Pty Ltd. The product, called Today Client/Server, descends from technology acquired from BBJ Pty Ltd in 1988 which has over the past three years been transformed into a leading edge product, thanks to a \$10m research and development project funded by National Australia Bank. The product is claimed to be the most open application development tool in existence today: it is available for MS-DOS, OS/2, Unix, AIX, VMS and MPE-XL supporting IBM Corp PS/2 and RS/6000, Data General Corp AViiON, Sun Microsystems Sparcstations, Pyramid Technology Corp RISC, Sequent Computer Systems Inc Symmetry, MIPS Computer Systems Inc RISC, Digital Equipment Corp VAX, Hewlett-Packard Co HP9000, ICL Plc DRS 6000, 80386 and 80486 Unix hardware environments.

Gamble

For data storage and management it supports Oracle, Ingres, Informix, Sybase, Rdb, Allbase SQL, TurboImage, RMS, KSAM, ISAM and serial files. When it comes to graphical user interfaces, it can support X-Window, Motif, Open Look, MS-Window, Presentation Manager and IBM's Common User Access. And it can support all these products and standards operating across the following networks: TCP/IP, Network File System, DECnet, Banyan Systems Inc Vines, Novell Inc NetWare and LAN Manager. The Today Application Repository offers the CASEload interface to other graphical software engineering products so that, say, attributes of the Excelerator upper CASE product can work through the Repository with the Today Client/Server generator. The company takes client-server computing to mean one element on a network making a request of another element on the network which then fulfils the request, and with the breadth of support the product offers, Computer Power appears to be closer to realising the possibilities of client-server computing than its competitors. The gamble with being so far ahead of the game, however, is that this is a strongly proprietary offering, although the company does pledge compliance with standards as they emerge. Today also relies on the database vendors to supply the remote procedure call technology and provide for data integrity. This currently means that although the language can be used to develop applications in which the data management part can reside on any supported databases or combination of databases, the net result is a database administrator's nightmare as she tries to ensure referential integrity in a heterogeneous environment.

Computer Power's European managing director Chris Leptos suggests that one way to circumvent this problem is to store mission-critical data in a database with strong referential integrity, such as Sybase, and only use databases with less reliable triggers and business rules for less critical data. However, Today Client/Server does offer version control, which means that when upgrades are made to the base application, the product automatically integrates these into the tailored applications. Applications developed using the product have a layered architecture separating presentation, logic, service and data layers via, respectively, the screen painter, expert system, report painter and data dictionary. The Today development environment also supports process modularity so that applications can be split into processes to support the following three scenarios: one process calls another process operating on the same CPU; one process calls another process operating on a different but known CPU; one process calls another process operating on a different but unknown CPU. With this layered architecture and process modularity, Computer Power reckons that whatever model of distributed computing is adopted - that of the Open Software Foundation or Unix International Inc or proprietary variations thereof - Today Client/Server will give you the ability to write applications now that can run in the chosen distributed environment of the future. Computer Power Group is a software and services group with a turnover of £118m - the majority of its revenues come from consultancy and systems integration in the IBM mainframe world and it seems reasonable to suppose that the Today Client/Server product will fit nicely into this business. However, DB2 is not supported and there are no intentions to support it, as Computer Power evidently sees this product as a way of pushing into the mid-range software and services market.

Blessing

Currently, there are 3,500 European licences for the Today application development environment, but as Hewlett-Packard's AllBase 4GL is derived from the Today product, Leptos is hoping that the thousands of AllBase 4GL users will also come over to Today Client/Server. This is a strategy to which Hewlett has given its blessing and Hewlett-Packard Australia has signed an agreement to market the product and to develop other Open Systems products with Computer Power for export. Because AllBase 4GL and Today Client/Server share a common core, the code between the two products is upgradeable, although applications would have to be re-engineered. Beyond Australia, Computer Power is targeting Europe from its European headquarters in Purley, Surrey. Here Leptos sees his nearest competitors as being Cognos Inc and Uniface Inc. The product is due to ship on August 15, beta test sites are being kept secret, but if Computer Power can deliver all it says it can, the market stands to be impressed.

ANDF WINNER ALSO TALKING TO ESPRIT - OSF PLANNING ANDF "PORTATHON"

Initial reference ports for the Open Software Foundation's Architecture Neutral Distribution Format (UX No 337) are Ultrix, SCO, SUNOs etc. - OSF/1 isn't, because the submitters were asked to develop on a platform of their choice. An OSF/1 reference port will be done between the first snapshot and the final offering. Until April, winning submitter the Royal Signals and Radar Establishment was one of four Ministry of Defence research bodies. The four became a single government-owned organisation - the Defence Research Agency. RSRE is now the electronics division of the DRA - abbreviated to DRAED. DRA as a whole has 12,000 staff and a turnover of \$1bn, while DRAED has around 800 engineers working on in-house research. It bid for the ANDF RFT because it had been working on the technology for the last five years. DRAED's TDF technology is also being adopted by the EC Esprit's Open Microprocessor Initiative (UX No 315, 317), a project which is running around a year behind OSF's, according to Dr Nicholas Peeling, TDF project manager at DRAED. "It hasn't actually chosen TDF - but it isn't considering anything else," said Peeling. There'll be an early version of the ANDF snapshot in the next couple of months. The snapshot proper will follow during the quarter after that - the completed architecture will be delivered late next year or early 1993. OSF won't say which ISUs it's working with, but there are understood to be a handful - software applications can be developed to ANDF from the snapshot. OSF will be holding a "portathon" next year when it'll try and get as many applications across as possible. Although OSF cannot legally demand exclusive rights to TDF, Peeling says DRAED has no plans to license the technology to anyone else - except Esprit/OMI. "It smells of exclusivity, but legally it isn't," he said. There are already licensing mechanisms in place for the ANDF Installer and Producer, according to OSF's business area manager, Pat Riemitis, but terms have not been disclosed. She said OSF got "the thumbs up," from its members over the choice of technology, and "all other submitters totally support ANDF." Indeed, SNI and HP have already asked for snapshots, she says. OSF will now be looking for third-party development tools to support ANDF. Target market for ANDF is the high volume, mass commercial/business sector. OSF is going to tout ANDF around the software vendor community for them to rip apart and see what they'd like to be added/changed. In Peeling's group of 25 developers, around a dozen are engaged on TDF full-time. Other projects on the go there are "novel database techniques." TDF is the nearest DRAED will ever get to a product", he says. "The MOD wanted TDF productised so that it could use it, and wouldn't consider using it until it became a product." "We're not in it for the money," says Peeling. TDF cost only £1m to develop.

UNIX SOFTWARE LABS PREVIEW ITS DESKTOP UNIX

According to USL's Joel Applebaum, by the middle of next year, after the release of its "golden master binary" desktop Unix and graphical front-end metaphor, "you won't recognise Unix." By this time, he says, users will be able to do everything they want to in Unix by moving through window sets, without ever having to go to the Unix command line. (Just like you can do with the Mac and NeXTStep already). The environment - demoed at the Interactive Developers Conference in an early guise, can be configured to the Open Look style, but is claimed to be "much more than a graphical user interface."

BIG CHANGES IN THE DISTRIBUTION MARKET AS UNIX HEADS FOR THE MASS MARKET

Standing up only 24 hours before the news broke of JWP Inc's purchase of Businessland Inc (UX No 337), Ingram Micro D vice president Bruce Fredrickson, speaking at the recent Interactive Systems Developers Forum in San Jose, was perhaps being slightly more than prophetic when he stated that "during the next 90 days we'll see the most change in distribution channels since 1982-3, when IBM came into the market." Fredrickson, in charge of the distributor which is looking to do some \$1.85 billion this year, said the trick to managing this change is to find out "how to do it, and not to go broke in the process." The major causes of this shake up, he argues, are three-fold. First, the slump in Compaq's fortunes, where "the market changed and Compaq didn't." He pointed to the effects of the emerging clone market pioneered by the likes of ALR, AST, Dell Computer and Acer. Second, he says, is Businessland's slump and subsequent demise - "which for the first time has allowed Apple and IBM to publically rethink their channels." They've apparently been doing it for some time on the quiet, and now Fredrickson expects the pair to announce new distribution strategies around the beginning of next month. Third cause, he says, is Apple's entry into the low-end of the market with the emergence of mass-marketing channels like superstores, which Apple is reckoned to be readying to use for its products. "The mass merchant market will emerge as the largest," Fredrickson believes.

"Thank God for GUIs"

Fredrickson says Ingram Micro D, claimed to be the largest of three national distributors in the US - Merisel and Tech-Data being the others - can now ship an order within 25 minutes of its receipt. The only problem, he says, is with some "just-in-time" products from Japanese manufacturers, which he says, don't always arrive just-in-time. "We're a huge supermarket," he says, "we've got to sell the staple bread, milk and eggs - the Ashton-Tate and Lotus - but supermarkets make their money on everything else; the delicatessen, the meat counter and the confectionary - like we do with Apple Mac, Microsoft Windows and mass storage products for example." If Unix is to succeed in this kind of market, he argues, it must win a battle for mindshare. With CISC, RISC, MS-DOS, OS/2 - and Unix- out there, the point is, he says, "that value added resellers understand Intel. They don't understand RISC. Even though RISC has the sexy image, CISC has the channel." "Image is the biggest problem for Unix," he argues, "thank God for Motif and Open Look." William Fellows in San Jose.

HIGHLAND'S CD SOFTWARE STORE SHIPS

Highland Software has started volume shipments of its novel Software Store, CD-ROMs containing collections of Unix software packages and text and graphics "exhibits" from multiple ISVs. Volume 1 contains 80+ products from 36 companies. Software areas covered include system utilities, office automation, electronic publishing, graphics and visualisation, software development and mechanical CAD/CAM/CAE. Highland is circulating CDs for Ultrix, HP and Sparc-based systems, sending them to users, vendor sales offices and distributors. Users insert the CDs into CD-ROM drives to examine, evaluate and immediately purchase software via password. Highland does not take orders from end-users for ISV software. Their exhibits refer them to sales sources.

QUEST STARTS OFF MOTIF USER GROUP

Quest Systems Corp of Santa Clara, California, has long been in the business of supplying OSF/Motif-based products (UX No 284), and now it is sponsoring a user group for Motif users. Flagged at the recent Xhibition event in San Jose, the International Motif User Group aims to provide a monthly newsletter, conferences, and possibly an electronic bulletin board for Motif users, all for a fee of \$20. Quest spokesperson Carol Frausto, said that response so far had been "tremendous", with over 100 enquiries so far, many from overseas. The organisation will be non-profitmaking, and has been meeting with the Open Software Foundation to discuss cooperation: it is currently mailing details to all Motif source licences. Quest says it is a one-stop shop for X.11-based windowing products, and hopes the user group will give it a higher profile in the market. Its products include enhanced X11.R4, Commercial Motif, the Quest UIM/X user interface builder, QUBE C++ development environment and XDeskmanager applications software. At Xhibition, the company announced ObjectViews C++, an object-oriented user-interface development environment that includes switching mechanisms to support several GUIs, including Open Look and Motif. For those interested in the Motif user group, call Carol Frausto on 408 496 1900 ext 1922 - or use Email on Internet: imug@quest.com.

OREGON PUTS NEW C++/C RELEASE ON SPARC

Portland, Oregon-based Oregon Software Inc has come out with release 2.1 of its C++/C, and the first implementation is for the Sun Microsystems Inc Sparcstation, not previously supported by the company. Oregon Software says that its C++/C is compatible with release 2.1 of AT&T Co's C++ and will track the emerging standards of the X3J16 committee of ANSI. Oregon C++/C for the Sparcstation includes "a true optimising compiler that generates fast, compact object code from C++ source" for faster compilation, direct debugging, and faster program development. It also includes an interactive source-level debugger, a suite of libraries that includes iostream, complex, and tasking libraries. It is three compilers in one, being switchable between ANSI C, K&R C and C++. Oregon C++ and Pascal-2 are available for 68000 line, Digital Equipment Corp VAX and iAPX-86 from the 80386 up.

MICROSOFT LAUNCHES MS-DOS 5.0

While IBM was launching its new PS/2s, Microsoft Corp was inviting attendees to dance in five-four time by having the Dave Brubeck Quartet - biggest hit Take Five, written in quirky five-four time - on hand to give MS-DOS 5.0 a jazzy send-off. Key features of MS-DOS 5 are much easier installation - it checks out the machine and well-nigh installs itself, vastly improved help - write help and the command name and its function is explained, and lower memory requirements than earlier versions. There is also a hypertext shell with task switching borrowed from Windows, and Microsoft has also picked up a couple of utilities from Central Point Software Inc - undelete and unformat to restore accidentally erased or reformatted files. Microsoft hired a yacht for the launch on the Hudson River off Manhattan. It will be available from dealers in the US - at \$100 - as well as from computer manufacturers, as hitherto.

SOFTWARE AG OPENS CORE PRODUCT LINE

Software AG, the world's fifth largest software house, has been promising Unix products for some time, and today will officially launch its Entire Function Server technology, a catch-all name for its core products under Unix and OS/2. Software AG managing director Peter Page admitted that Software AG had not been the fastest company to join the open systems bandwagon - "our customer base was not the first to look at Unix", he says - and some 85% of its business is still mainframe-based. Now the company is to offer Unix and OS/2 versions of its Natural applications development language and Adabas database, with the main selling point being the chances that it will give to allow mainframe customers to "downsize" or "rightsize" their mainframe-based operations with minimal disruption. Underpinning the Entire strategy are two communications technologies; Entire Open Communications Agent, which accepts communications request from any environment and delivers them in proprietary formats; and the Entire Function Server Protocol, which defines the functional requests that can be interpreted by servers, including SQL support and non-SQL functions such as recursive retrieval and object method activation. According to Page "most, if not all of our 4,500 customers have expressed an interest". Software AG chose the HP 9000 Series 800 platform as its first port, but AT&T, Bull, DEC, Nixdorf/Siemens, and Sun ports are to follow, with more in the pipeline. The products are currently in action at undisclosed beta-test sites, and will be come generally available within a few months.

EDS COUNTER-BIDS FOR SD-SCICON

The Electronic Data Systems Corp subsidiary of General Motors Corp last week turned the sighting shot fired by Cray Electronics Plc across the bows of SD-Scicon Plc into a full-scale bidding war with an all-cash offer of 45 pence per share compared with the share exchange offer of Cray that is valued at 42 pence or so - with a 37.5 pence cash alternative. The Electronic Data offer values SD-Scicon at a firm £116m but was immediately rejected by the company. With its large military involvement, SD-Scicon is a less than perfect fit with Electronic Data, which is biggest in facilities management and systems implementation, and which made an instantly-rebuffed approach to Logica Plc some four years ago. Later in the week, Cray said it would not be drawn into a bidding war, effectively leaving the way clear for EDS.

NCR SIGNS UNICORN FOR TOP END UNIKIX CICS

NCR Corp has signed Unicorn Systems Co to develop an interface between Unicorn's CICS-compatible UniKix product and NCR's Top End transaction processing monitor for Unix. UniKix enables migration of IBM CICS applications between mainframe and Unix multi-user systems: it converts the CICS calls to NCR's Top End application program interfaces, and uses the two-phase commit facilities of Top End to distribute various UniKix functions throughout the network. The interface is to be ready next quarter.

IBM NEGOTIATES WITH INGRES FOR RS/6000 BUNDLE

Underlining just how far in the future IBM Corp's own database for the RS/6000 still is, the company is negotiating with Ask Computer Systems Inc's Ingres Corp to bundle Ingres with the next release of AIX for the RS/6000, Sandra Kurtzig told Unigram. Digital Equipment Corp presently bundles Ingres with Ultrix but is believed to be planning to move away from it in the medium term and go to an Rdb-derived database management system.

RECITAL LAUNCHES V7 OF ITS GENERATOR

Recital Corp, London has launched Version 7.0 of its Recital generator for Unix and VAX/VMS. The new release includes, highly optimised code; table fields which allow one to many relationships; colour support; the ability to call procedures through procedures; activity management features; a browse facility; a number of new security features; and an applications specific help facility. In addition Recital has enhanced its screen painter, report writer, query features and documentation for the product. Licences for the software range between £2,600 and £80,000, depending on the machine. A minimum of 4Mb memory and 512Kb per user is needed.

ENCORE WOOS CONCEPT USERS TO RISC; ADDS 600 MIPS MONSTER

Encore Computer Corp, Fort Lauderdale, Florida is hoping to ease users of its proprietary Concept/32 superminis over to its 88000 RISC-based machines, and has come out with the Encore RSX System, a RISC processor with dual operating modes: native RISC and Concept/32 mode. In native RISC mode, it is just another member of the company's 90 Series family of 88000 real-time machines. In compatibility mode, it executes any Concept/32 object code, and it can also operate simultaneously in both modes - sounds as if it includes a Concept/32 processor as well as the 88000 - and has tools for moving object code from compatibility mode to RISC mode. Prices for a complete RSX system range from \$149,400 to \$249,900, depending on options. Upgrades to existing Encore systems, which involve an exchange of processor boards, begin at \$99,500, and are expected to begin shipping this month. The company also announced the Encore 93 Series, a fully symmetric multiprocessor 88000 system designed for real-time and transaction processing applications. Each Encore 93 Series system can be configured with from four to 32 Motorola 88000 RISCs for performance up to 600 MIPS. Main memory goes from 64Mb to 840Mb, and multiple SCSI channels support over 100Gb disk. Up to eight 93 Series systems can be clustered with protocols such as Network File System and TCP/IP over 53Mbyte-per-second memory interconnects. As many as eight clusters of eight systems can be interconnected at distances of up to two miles and clusters can include other members of the 90 Family, as well as Encore's Concept/32 and the new RSX. Clusters can be configured for distributed systems delivering over 5,000 VAX MIPS with an input-output bandwidth in excess of 300Mbytes-per-second. The machines run a multi-threaded real-time Unix that complies with current Posix, GOSIP, 88open, and System V Interface Definition standards and Encore has committed to compliance with future extensions. The company also announced that it was integrating Information Processing Techniques Inc's Fortran-lint analysis tool with its software development environment for the Encore 90 Family: Fortran-lint is a source code analyser claimed to detect over 95% of the nonlogic errors for applications written in Fortran. And it signed a three-year agreement with Reston, Virginia-based Visix Software Inc to bundle the Looking Glass Professional graphical environment with all its Unix-based 90 Family. Looking Glass Professional is implemented in compliance with OSF/Motif and Open Look.

...AS McDONNELL DOUGLAS LAUNCHES ENCORE-BASED SERIES X

McDonnell Douglas Information Systems is launching its new Series X range of multi-processor systems at the European Unix User Show in London's Olympia this week, providing a claimed range of performance from 33 to 1056 MIPS. Based on the Encore 93 line, launched by Encore last week (see story above), the machines use one to four processor Motorola 88000-based boards, and not the Nat-Semi-based hardware used in its previous RX Series. They do, however, use the same high-speed dual bus architecture, which first emerged in Encore's Multimax computer family, and run Encore's multi-threaded Umax operating system as well as McDonnell Douglas' Reality/X version of Pick under Unix. There are three mid-range models and six "super-computing Enterprise" models, with the top-of-the line model configurable to 32 processors. Aside from Reality, databases supported include Informix, Ingres and Oracle. The company expects to sell around 80 systems over the next year to the corporate marketplace looking at mainframe-level systems. For transaction processing, the company is looking at AT&T's Tuxedo, but plans to add transaction processing features to its Pro-1V applications environment in the future. Entry-level prices start from £55,000, with an upper limit of around £8 million. The machines will be on show for the first time during the European Unix User Show at London's Olympia this week.

ASCOM WINS UNISYS' TIMEPLEX, PAYS ONLY \$207m

Underlining Unisys Corp's unhappy position as a forced seller, it has managed to find a buyer for its Timeplex Inc acquisition, in the shape of Ascom Holding AG of Switzerland, but will get only \$207m for the business, where it paid shares valued at \$325m when it acquired the company back in 1987. At that time, the networking equipment manufacturer was doing annual sales of \$147m. Unisys hopes to see completion by August 31, but it seems that most of the cash raised will not be able to go towards its debt-reduction programme: that looks like being derailed by a massive settlement of fraud charges inherited that were brought against the former Sperry Corp by the US Department of Defense. The company has agreed to plead guilty to fraud and other felony charges involving using improper means to win defence contracts and pay a biggest ever fine, forecast by the Wall Street Journal to be as high as \$190m. Unisys is desperately trying to cut its debt of \$600m to \$800m this year but had set aside only a \$60m reserve against the cost of the settlement.

IBM AND NCR WILL RUSH OUT 50MHz 80486 BOXES

At the PS/2 rejuvenation launch last week (UX No 337), IBM previewed 50MHz 80486 upgrades for the 90 XP and 95 XP, while NCR Corp is also expected to rush out systems built around the part: the chip maker is expected to unveil the part at the PC Expo show next week in the US.

FPS IN SEARCH OF NEW FINANCING

Reporting a \$7.2m loss for the second quarter, Floating Point Systems Inc, Beaverton, Oregon, says it has cash to last it through only until October - and that it has hired the Volpe, Welty & Co investment bank to try to find new sources of finance. It closed the quarter with \$9.2m in cash and near cash having seen the figure fall by \$4m during the quarter to meet the costs of launching its new Sparc-based machines, and it also borrowed \$3m during the quarter. Fixing snags that showed up in testing delayed shipment of the new machines, aggravating the effect of the economy.

BULL SEEKS SPEEDY NEC DEAL

Bull SA is looking for a speedy resolution of the problems attending its relationship with NEC Corp, the company's president Francis Lorentz told the annual meeting yesterday. It is vital to Bull that it takes 100% control of loss-making Bull HN Information Systems Inc, where NEC has 15%, so that it can bring the UK and Italy into the European arm of the company - Bull HN lost \$224m last year. Lorentz said that the company and the French government were in agreement on the outcome they wanted at the NEC negotiations, where it is essential that the technological links with the Japanese company are retained, while it ideally cedes all equity interest.

PRIME ADDS IMAGING, SQL EXTENSIONS TO PICK

Last week at its user conclave, Prime Computer Inc introduced Image Way, a new imaging system that is fully integrated with Prime Information, its Pick-based DBMS that runs on both its Unix and its proprietary machines. The system is modular and includes subsystems, high-resolution personal computers, local area networks and printers that can be configured to individual customer needs. Entry-level pricing starts at \$170,000. Typical systems will go for \$600,000. And Prime Information has now sprouted an SQL interface, putting it more into line with the rest of the industry. The Prime SQL conforms to Level 2 of the SQL data manipulation language, and allows for direct processing of SQL DML statements from within Info/Basic programs written on top of Prime Information. The Unix version of Prime Information, called Prime Information Plus, was introduced last August.

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Having gotten the port of SVR4 to IBM PS/2s under its belt (UX No 336), Texas-based UHC is toying with the idea of doing the same for IBM's RS/6000: it is waiting to see how a proposal it has made to a large end-user is received. This kind of combination - mainstream Unix on a Blue box - could prove persuasive and must have competitors reading dire warnings on the wall.

Apple Computer Inc says that any agreement with IBM Corp on the Rios RISC chip - or with Sun Microsystems Inc or Hewlett-Packard Co with which it is also talking - will not jeopardise its Motorola Inc relationship: "we have been working with their RISC chip for a while now; we won't discard Motorola," it said.

The talks between Apple Computer Inc and IBM Corp are at such a high level that only a handful of people have any idea what's going on, so that Electronic News and the Financial Times were unable to get enough to run a story last week - but the New York Times did manage to progress the item a little, running a top-of-the-front page report on Monday that top Apple executives were visiting Armonk that day to discuss a deal that would at minimum involve Apple using the RS/6000 RISC in its future high-end machine, and IBM licensing and perhaps helping to develop Pink, the portable object-oriented version of the Macintosh operating system promised recently by John Sculley (UX No 326). That is expected to take two years to finish. Those that believe that IBM is really proposing an agreed merger with Apple suggest that what is coming out now is simply a testing of the water and a softening up of Apple employees against the inevitable blow that merging with a company they perceive as "the enemy" would bring, adding that if Apple were to license rights to its crucial forthcoming operating system software, it might just as well sell out to IBM.

SCO, which currently offers Cheshire, Macclesfield-based JSB Computer Systems Ltd's Multiview-windowing for Unix character-based terminals-environment, says it will also be offering JSB's X-Windows server version of Multiview by the end of the year, which includes Anaheim, California-based Integrated Inference Machines Inc's X11/AT X server software.

And SCO has formed four new business units: the distributed corporate computing unit, which will focus on ACE; a general business systems unit, targeting multi-user business solutions; the complimentary products unit, which will focus on networking, languages and applications; and the services unit, which will provide training and support.

Without any PR hoopla, Retix last week started to show off the first fruits of its work for Unix System Labs at the OSI International Forum in Virginia: a combined OSI communications stack along with tested applications (X.400 and X.500 for instance) in a SVR4 environment.

Silicon Graphics' latest version of its symmetrical multi-processing operating system Irix 4.0 integrates the X Window system with SGI's graphics library offering what the company says is the first real-time 3D X environment.

Xecute, the distributor, has signed to represent X houses AGE, Century Software, CrossWind Technologies, Hummingbird Communications, Micronics and Perfect Byte, claiming the contracts make them the largest supplier of X-based computing software in the US.

If you're in the market for exotic travel, don't forget Kt Data 91 Oppna System, the first trade show in Finland to present open systems and their applications: it will be held at the Helsinki Fair Centre between September 25-7, 1991: call Helsinki (+358 0) 150 91 or fax (+358 0) 142 358 for more details.

And while we're on the subject, don't forget EuroOpen's Autumn 1991 conference in Budapest, Hungary, between September 16-20th, and the seventh Swedish Unix show, Unix'91, in Stockholm on November 6-8.

Transarc says it'll ship its AFS distributed file system for Hewlett-Packard's new Series 700 workstations in the fall. HP, which collaborated on the port, is anxious to get it up as a transition to DCE. Software developer SAS Institute, which is buying 400+ Series procedurally based applications that form the mass of products

Borland has put together a 21-minute video on object-oriented programming hosted by Philippe Kahn and including Apple Fellow Alan Kay, MIT professor and AI expert Marvin Minsky, C++ designer Bjarne Stroustrup, MIT professor emeritus and machine intelligence expert Joseph Weizenbaum and Pacal designer and ETH Zurich professor Niklaus Wirth. They're selling "The World of Objects" to programmers and technical managers for \$20.

Rich McGinn, who has been president of AT&T Computer Systems, is not expected to make the transition to the merged company, its top slots having already gone to NCR executives: doubtless AT&T will find a home for him elsewhere. NCR's top technologists Phil Neches and AT&T VP Bill O'Shea are regarded as the architects of the new product line-up. How middle management shakes out is still up in the air. Now that they know what the products are going to be they'll be going around recruiting personnel: the real estate in Dayton is about to turn into a boom market. AT&T sales people start training on the NCR product next month.

Like a pack of jackals there's a bunch of companies licking their chops over the fact that NCR is walking away from Tuxedo: Pyramid, Amdahl, Unisys and Sequent are waiting to pounce on AT&T's leavings - especially the RBOCs - where Tuxedo has carved a nice niche.

The handful of supercomputer manufacturers are beginning to look bruised and battered from the bar rage of benchmarks being thrown around: this time it's Cray Research Inc's turn to duck a bumper bowled by NEC Corp, which says its SX-3 outperformed the biggest Y-MP in the two Tennessee Linpack tests run by the University of Tennessee.

Siemens-Nixdorf Informationssysteme AG has now given up hope of making a profit this year; the shares had been rising on hopes that the company might at least break even.

IBM Corp says that it has a RISC co-processor for the AS/400 in the laboratory at its Rochester, Minnesota base - but has not yet worked out what it might decide to use the thing for: the most glaring omission in the AS/400 is anything that does sums fast for work like spreadsheet calculation: IBM is expected to migrate the As/400 line to a full RISC CPU around 1995.

Belfast-based Software Ireland Ltd and the US Distributor Arccom Support Group Inc, headquartered in Georgia, have established a new company, Unibol Inc: it will operate from Marietta, Georgia and distribute and support Unibol, a Unix implementation of DEC's old Dibold development and execution environment, on the RS/6000s, PS/2 as well as 80386 or 80486 systems.

Version 3.0 of Apple Computer Inc's A/UX implementation of Unix is due to appear early next year: it will include Macintosh System 7.0 features like a sound manager, file sharing, balloon help, a data access manager and Apple events.

Cray Research Inc has made it clear that while it might buy TC2000 parallel processors from Bolt Beranek & Newman Inc, it has no plans to acquire the Cambridge company: Bolt Beranek's massively parallel TC2000 machine uses up to 512 20MHz Motorola Inc 88000 RISCs.

An Apple Computer Inc internal newsletter seen by the San Francisco Chronicle suggests that top executives will take a 10% pay cut when the company announces 700 job losses in the Cupertino area later this month: Apple is also expected to mothball some of its buildings.

Although both its constituents are original sponsor members of the Open Software Foundation, Siemens-Nixdorf Informationssysteme AG has announced Sinix V5.40, a new version of its Unix operating system based upon Unix System Labs' System V.4 release: Siemens opted for the Unix System Labs System V.4 route over the Foundation's OSF/1 operating system in August last year (UX No 294).

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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24 JUN 1991

The weekly information newsletter for the UNIX ® community worldwide

London, June 24-28 1991

Number 339

HP TO CHALLENGE DEC'S NUMBER TWO POSITION WITH 16 NEW LOW AND MID-RANGE MACHINES

Last week a small blind teaser advertisement ran in the *Wall Street Journal* tweaking IBM to beware of some impressive numbers coming down on June 24th. The taunting advertiser turned out to be Hewlett-Packard, which this week will announce 16 new machines to replace the whole of its low-end and mid-range proprietary 3000 and Unix-based 9000 lines. Oddly enough, despite the flippant warning of its advert, HP's real target is DEC. According to Wim Roelandts, vice president and general manager of HP's Networked Systems Group, the company aims to trounce DEC to become the users' next choice after Big Blue. As it did when it bowed its first Snakes, its Series 700 RISC workstations, Hewlett-Packard is claiming a highly aggressive price/performance ratio. The new systems, it says, outperform comparably priced IBM and DEC products by up to six times. The new systems all run on the latest version of HP's Precision Architecture RISC chip, identical to the silicon used in its lightning-fast 700s, giving the company a distinctive scalability from desktop to enterprise-wide data centres. The new one-chip VLSI CMOS-based boxes will phase out the majority of their NMOS predecessors over the next three-to-six months - the 9000 Series 820, 830, 840 and low 850. The Unix-based 808 and 815 become immediately obsolete. HP claims to set a number of new standards with these machines. It has broken the \$15,000/transaction per-second, TPS, barrier with its pricing. It has packaged the things in boxes not much bigger than conventional personal computers. It apparently aims to sell a few of these things. They have been streamlined for high-volume commercial sales: the operating system will be pre-loaded and the system configured at the factory. In addition, HP has authorised distributors, as well as its direct sales force, to carry mid-range RISC machines for the first time. It has signed Lex Electronics and Hall-Mark in the US to peddle the new 9000s. Canon sales in Japan will handle the 3000. Sources say that HP's UK campaign will be the most aggressive of its country programmes, though no names have been inked in yet. The new Unix-based 9000 series 800 servers start with the desktide 807S priced at just under \$13,000 for a reputed 15 TPS performance. Following in the line are the other desk models: the 817S - \$20,000 for 30 TPS - and the 837S - \$42,000 for 40 TPS. The physically larger expanded package, including a single integrated input/output card and high-density 1.3Gb, 5.25" drives, start with the 827S - \$25,000 for 30 TPS - followed by the 847S - \$65,000 for 42 TPS - and the 857S - \$95,000 for 44 TPS. UK prices start at £10,000 for the entry-level boxes and £80,000 on the 857 machines. The two-slot desksides become available in August; the six-to-twelve slot expanded packages in September. HP says the price/performance of its 30 TPS 817 desktide beats IBM's AS/400 Model D06 by a factor of 5.7 times. It's best showing against the RS/6000 is with the 66 TPS 817 desktide whose price/performance is 2.1 times better than the IBM Model 320. All systems come with integrated disk drives and high-capacity DAT drives, a maximum of 2.6Gb on the small boxes, 5.2Gb on their big brothers. External mass storage goes from 1.39Gb to 47.89Gb. The 64-bit floating point co-processor is optional on the 817S, 827S and 837S; standard on the 847S and 857S.

IBM TRUMPS WANG'S ACE HAND WITH RESELLER DEAL

IBM Corp comes away with a big new customer base for the AS/400 under its agreement with Wang Laboratories Inc announced last week. Wang becomes an IBM reseller, taking the AS/400, the RS/6000, PS/2 - in return for a rescue package consisting of an initial \$25m investment from IBM that could grow to \$100m, in the form of paper convertible into Wang Class B shares. Wang will continue to sell and enhance its own VS Series and personal computers, at least in the short term. Under the terms of the agreement, Wang is permitted to sell the AS/400 - which will bear the IBM logo - but only to customers that are replacing a Wang VS machine, and although if Wang's decline had continued, IBM would likely have won many of those sites anyway, this way it gets them with no effort. That base adds up to 32,000 systems in 15,000 accounts. IBM also makes it clear that users converting to AS/400 - and a jointly operated conversion centre is to be established - will become IBM customers. IBM salespeople will also get commission on these AS/400 sales. Not so with regard to Wang sales of the RS/6000: Wang now plans to implement its Office 2000 software suite on the IBM Unix machines, and these will be sold with the Wang logo - as will the PS/2s it takes. IBM's commitment to invest up to \$75m more in Wang is dependent on the level of sales of IBM products Wang achieves. On the RS/6000, Wang can sell it to anyone it wants, but it can't broke it. It is hinted that IBM may take some Wang software, including Wang's imaging software. The fate of Wang's current OEM deal with MIPS Computer Systems Inc, and its membership of the ACE Consortium is still being decided, but those directly conflicting deals can surely have no place in the new order of things at Wang.

HARDWARE VENDORS FEEL THE HEAT AS UK CORPORATES GO FOR OPEN SYSTEMS

In the UK, hardware vendors are facing increasingly bleak prospects in their relationships with large system users, as they begin to take advantage of the long-vaunted benefits of open systems, reports Unigram's sister publication, the UK monthly *Unix News* magazine. "We are telling hardware vendors - you're not strategic any more," said Don Feldman of British Petroleum, who is leading the company's devolution from mainframes to distributed open systems in Europe. "We no longer need those kinds of relationships." BP is implementing its core transaction systems using Oracle Financials and the UniFace 4GL, having dumped previous development work carried out on Software AG, said Feldman, speaking at a recent Price Waterhouse seminar in London. As for hardware, BP has opted for Sequent Computer Systems kit at its sites in Hamburg, Paris, Hemel Hempstead and Brussels, but is keeping its options open. "The choice of hardware is very difficult - we've not made them all yet. The beauty is, you no longer have to do so at the start." Ian Brand, an information technology group manager at National Grid, which is responsible for moving electricity across the UK over the grid system, has a similar philosophy. "My idea of open systems is to buy software from anybody, run it on anything and ditch it for something else if need be. It's an ideology." Brand is working on putting a workstation on every desk with one point of data entry and seamless integration. The company already has IBM, ICL DRS6000s, DEC 5000s, some 40 Sequents and a Pyramid, not to mention Suns. It is currently getting rid of four Amdahl UTS mainframes, said Brand. Meanwhile, the Inland Revenue is re-equipping with ICL, Philips and Bull Unix kit. Its 32 ICL mainframes are likely to be replaced by distributed open systems over the next four years, according to Colin Thompson, deputy director of IT.

TATUNG, SAMSUNG, EPSON, IN SECOND WAVE ACE COMPANIES

MIPS has apparently managed to shuffle a whole deck of ACEs into its corner. This Tuesday at PC Expo, when it trots out its second round of joiners, the list will reportedly add another 30-some companies to the initial contingent of 21 made public in April (UX 329). As we went to press last week sources said the list was still expanding and more than 30 firms were expected to pledge themselves to producing an ACE box. At least one Sparc company, namely Tatung, is expected to be in the line-up. Samsung is also expected to lend its weight to the ACE Initiative and might be considered a Sparcette since it holds an affiliate membership in Sparc International. However, it has not declared publicly that it will build a Sparc machine. What political hay the ACE Initiative will make of these seeming betrayals can only be imagined. Despite rumours to the contrary, Tatung at least is not abandoning its Sparc commitment. The Tatung entity that is joining ACE is not Tatung Science and Technology Inc, the operation that is doing the Sparc. According to its president Kam Chan, ACE attempted to recruit him several times and although he is interested, he wants to see their level of success first. Among the more prominent names ACE will pick up this week is Epson, but reportedly the majority are low-profile companies, many of them based offshore and trading up from their PC origins. ACE has also recruited a few ISVs such as Corollary and Banyan, but MIPS has made no conscious push for software companies in the last few months. Those will be pursued later this year when release of the developer's kit is more imminent. The sincerity of the companies joining ACE is something that will have to be plumbed, and of course the IBM/Wang announcement - see page one - looks like producing the first ACE defector. Critics of ACE suggest that theirs could be a "soft commitment", aimed at gathering information in an attempt to sort out who the market maker will really be.

1000 MIPS MULTI-PROCESSOR BY 1995, PROMISES HP

Hewlett-Packard computer chief Wim Roelandts says that by 1995 the company should have a multiprocessor doing a 1000+ MIPS. The company is also going to mandate 50 MIPS as the performance floor of its series 700 workstations and not produce anything less. That machine will be selling below \$5,000 in a year or two, he added. And besides the reputed 110 MIPS Bushmaster or Bushwhacker Snake that you've heard about, Hewlett-Packard apparently has a 100 MHz superscaler unit up in the lab.

RDI PROMISES BRIEFCASE, FERRARI FOR COMDEX/FALL

RDI, the creators of the Sparc laptop Brite Lite and now calling itself the second largest supplier of installed Sparcs in the world, have its European ducks in row after piggybacking on Sun's distributors in France, Belgium, Holland, Switzerland and Italy. Respectively they include Tekelec, BIM, Koenig & Hartmann, Industriade and Delphi. The company is using Magirus in Germany. It says European commitments range from a low of 500 to a high of 2,500 boxes over the next six months. These deals are exclusive, leaving RDI to sort out what to do with its manufacturing partner TriGem, whose UK and European operations are sales and marketing operations. It is considering putting an assembly plant in Ireland so it can fairly say European-made. In North America, the company has eleven distributors, reportedly including Access Graphics, the firm handling of all of Sun's smaller technical VARs, committed to an average of 2,500 units each. RDI expects to have three new products to show off at Comdex in the Autumn. One will be a briefcase unit, currently called the Brite Lite Lite, weighing under 10lbs and including all the features of the current Brite Lite except the Sbus slots. It will also have both active matrix colour units, offering 256 colours in 640 X 480 sourced from Sharp, Kyocera and Hitachi. The last is a Sparc-based mystery box supposedly code-named Ferrari that the company declined to describe, beyond calling it its flagship, intended as a pricy low-volume niche unit that is a laptop and yet isn't. The company has also arranged with SAIC for tempest and ruggedised version of Brite Lite. One of the two UK outlets for the Brite Lite, Frontline Distribution Ltd, Basingstoke, Hants, says it has sold 20 of the things, which it lists at £8,900, to resellers. RDI and Frontline last week claimed that confusion over distribution of the Brite Lite in the UK - PCS Ltd, Wakefield, Yorkshire, also sells the laptop, (UX No 334) - has been settled. But the price remains the same: PCS is offering Brite Lite, in the same configuration as Frontline, for £7,000.

OSF's DCE "CAN BE INCORPORATED INTO ATLAS" SAYS UNIX INTERNATIONAL

Unix International is currently reassuring people that it has figured out how to encompass DCE in its now officially named Atlas distributed computing superstructure (UX No 331), due for roll-out in September. It is working with a reported four companies including Sun and Unix Systems Laboratories and suggests that they have cracked the problems of naming and security, for instance. Promising application interoperability and portability between Atlas and DCE, Unix International is attempting, however belatedly, to take the high ground on architectural directions. It is test-marketing its notions with some users and says it has sparked some interest. The message it is trying to drive home with users, vendors and ISVs alike is that Atlas-based systems will be suitable for bids in situation where DCE functionality is required or desired.

SCO BOWS TO LOTUS OVER PROFESSIONAL SPREADSHEET

Santa Cruz Operation Inc has had to bow to Lotus Development Corp over its SCO Professional spreadsheet for Unix: Santa Cruz has settled the copyright infringement suit by agreeing to stop duplicating, distributing and licensing all versions of SCO Professional by August 15, and recommending users to migrate to Lotus 1-2-3 for Unix System V, and Lotus is offering it at \$400 as well as dropping litigation against Santa Cruz. This leaves the only outstanding case in the spreadsheet wars as the one Lotus is prosecuting against Borland International Inc. Borland said the court granted its motion to defer response to Lotus' motion for summary judgement and gave Borland until September 30 to file its response and Lotus' response is due by October 15. The court did not set a date when it would make a decision on the summary judgement motion.

IBM TAKES PORTABLE NETWARE FOR RS/6000

Further estranging itself from Microsoft Corp's LAN Manager, IBM Corp has extended its February agreement with Novell Inc to cover Portable NetWare for the AIX Version 3 on the RS/6000. The facility will mean that users can integrate the RS/6000 into existing NetWare networks, enabling MS-DOS, OS/2, Windows and Apple Computer Inc Macintosh NetWare clients to access AIX applications, enhancing interoperability and sharing of data. Despite the rift with Microsoft, IBM says that it is evaluating developing its LAN Server version of LAN Manager for AIX Version 3 for the RS/6000.

...NEW IBM COMMS PROCESSORS "WILL SUPPORT TCP/IP"

And IBM has said that it will one day support TCP/IP and the Frame Relay fast packet protocol on its 3745 communications processors, to which it added two new top-end models last week. Ellen Hancock, IBM's networking chief, admitted that TCP/IP had become more widely accepted than than IBM anticipated it would, and the company had therefore to invest more than originally planned in support of the protocol. The new 3745s, Models 310 and 610, can include up to eight Ethernet boards (supporting up to 16 Ethernets) and a local net router and bridger, and are said to offer up to 50% better performance.

PARSYTEC LAUNCHES "SUPER MASSIVELY PARALLEL" TRANSPUTER BOX

Parsytec GmbH of Aachen, Germany yesterday launched its GC range of "super massively parallel" 400 GFLOPS computers, built with Inmos' new T9000 Transputer. The new scalable multiple-instruction, multiple-data machines, to be in prototype by the third quarter, are targeted at "Grand Challenges" in laboratory research and engineering, where vector supercomputing power is not sufficient. The top-of-the-range 4 GFLOPS machines measure a huge 20 square feet and have 16,384 Transputers, in clusters or Giga-Cubes of 64 processors, each yielding 1 GLOPS; pricing will be \$300,000 per GFLOPS.

SPAIN: ICL WINS BIG DRS 6000 ORDER

ICL Espana SA has won an order for 225 Sparc-based DRS 6000 Unix systems to the provincial and administrative office the Spanish Social Security's General Treasurer's Office and the Naval Social Institute. The contract is worth \$15.6m and ICL had to tender against 15 other companies. The DRS/6000s are to integrate with the host systems and provide automatic distribution of libraries and files. 200 systems will be used in treasury offices for administration and management and the remaining 25 will be used in provincial offices of the Naval Social Institute. Also, in addition to the Unix kit, ICL Espana is to supply over 3,000 workstations, making the network one of the largest Unix nets in Spain.

UNISOFT HAS ANSWER TO USL GOLDEN MASTER BINARY

Unisoft claims to have the answer to Unix Software Labs' "golden master binary" Unix for Motorola 68030 and 68040 with its new BPK binary porting kit. The Unisoft product will allow OEMs to perform their own ports of System V.4, and consists of a binary distribution of Unix V/68 Release 4 and utilities with efficient reconfiguration capabilities. Unisoft claims the product, which has a starting price of \$65,000, allows for the easy adaptation of Unix V.4 to "the most likely hardware designs." Unisoft is considering similar products for MIPS and Sparc processors. UniSoft, London, has also been quietly re-focusing its business over the last year or so and reckons that around two-thirds of its expected \$10m year-end turnover to June 30 will come from consultancy services and the customisation of Unix applications for corporate users. It has just signed to do a review of computer security for British Aerospace's Rover Group in the UK.

ICL PITCHES NEW 80486 LINE AGAINST COMPAQ'S 80386s

In its latest bid to become number one personal computer supplier in Europe, ICL Plc has almost doubled its existing product line with 13 new models, including 80286, 80386SX and 80486 models. A modular dual-processor deskside system, the 80486-based M95, will be out in September, running at 20MHz and 33MHz - a 50MHz processor upgrade will be offered as soon as Intel comes up with the goods. Aggressively priced, the 80486-based machines will be positioned against Compaq's 80386 offerings. ICL, which won the Queen's Award for Export Achievement this year for personal computer shipments, last year shipped £250m-worth of personal computers - 15% of total revenues - now makes from scratch all its 80486-based products at what is now its main UK plant in Ashton-under-Lyne, Manchester, where its new entry-level 80286-based machine is also being made. The rest of ICL's personal computers are still manufactured in Taiwan by Acer Corp. There is at present no commonality between the ICL and Fujitsu Ltd personal computers, but that may come.

ANOTHER 10,000 DEC JOBS IN JEOPARDY FROM ECONOMY

Digital Equipment Corp acknowledges that it is contemplating big new lay-offs over the next 12 months. The new cuts, following on from the 10,000 that have gone over the past 18 months, will reach 9,000 to 10,000, 9% of its 120,000-strong pay-roll, if it continues to see only sluggish growth in turnover. Analysts expect DEC to take a charge of as much as \$250m, probably with this quarter's figures, to cover job-cutting programmes and factory closures. The company says that there is no connection between any new cuts and disappointing orders on VAX 9000.

ASHTON-TATE OFFERS dBASE IV FOR LEADING PC-UNIX VARIANTS

Torrance, California-based Ashton-Tate Corp says that dBase IV version 1.1, which it reckons is still the most widely-used personal computer database management system, is now available on Intel Corp 80386 and 80486 microcomputers running Unix: dBase IV for 386 Unix runs under Santa Cruz Operation Inc Unix System V/386 and Xenix 386, AT&T Co Unix System V/386, Interactive Systems Corp Unix System V/386 and ESIX System V. Prices start at \$1,000, \$1,900 for unlimited users on a single processor, runtime licences are \$300, single user, \$600 unlimited users per CPU, and it ships this week, giving the same look and feel as the MS-DOS version; most programs should run with little change.

NEW RELEASE OF SYBASE SUPPORTS MULTI-LANGUAGES

Sybase Inc has a new release of the Sybase relational database management system, and the company says that a key feature is the ability for applications based on different languages to access simultaneously a common database: the international release of Sybase supports the ISO 8859-1 character set which supports 13 languages; other new features include alternate collation sequences, alternate date, money and number formats, native language system messages, tools to convert to other languages, and the ability to specify a language other than English as a default language; also, the company has enhanced Sybase SQL Server, Sybase SQL Toolset and Sybase Open Client; Sybase is headquartered in Emeryville, California and its UK subsidiary is located in Maidenhead, Berkshire.

SUN BACK-PEDALS ON ITS ICL MARKETING AGREEMENT

By no means all computer industry alliances pan out as their protagonists had hoped, as the history of Sun Microsystems Inc makes all too clear, and another of Sun's alliances, the one under which it was to remarket ICL Plc's dual processor Sparc-based DRS 6000s has gone onto the back burner after lacklustre response, *Electronic News* reports. The paper suggests that the reasons may include the expectation that the Sun Galaxy multiprocessor is now imminent, and possible compatibility problems between ICL's System V.4 and Sun's SunOS. Sun had been taking the machine to top off its line for commercial users; it is still pushing Sparc boxes from Floating Point Systems Inc and Star Technologies Inc for high-end technical customers. It is thought to have sold about 100 ICL machines.

OKI ANNOUNCES OKIDATA DIVISION - i860 WORKSTATIONS FOR AUTUMN?

Last week Oki finally got round to officially announcing the existence of Okidata Microsystems, the Framingham, Massachusetts-based division it set up months ago to handle those SVR4-based i860 boxes it's been working on (UX No 302, 319, 321, 325). Previous reports had the box, now conceived of as a family called the 7300, debuting in May, then June, but any hardware is still a no-show, whose appearance has been pushed off to sometime in the Autumn. Boxes, however, are being produced both in the US and Japan for delivery to software developers without whose ports any 860 becomes a boat anchor. The division's marketing director Stephen Reso says that some 50 machines are out. The division has also decided on its target markets describing them as workgroup and enterprise-wide network configurations specialising in image management, publishing, geographic information systems and decision support systems. The company has forty unidentified ISVs porting their software, specifically for Okidata and these verticals. Another seventy-five are said to be in negotiation. The company can also take advantage of the horizontal software being ported at the behest of the Mass860 consortium. Some two hundred applications are said to be committed. Reso said the systems Okidata Microsystems develop will take advantage of its parent company's expertise in multimedia, imaging, fax and peripheral technology. The Japanese giant, currently with no American computer stronghold, is interested in developing a strong US market position. When they appear, the Okidata boxes will be able to do DOS applications in emulation in a single desktop solution. Using Insignia's SoftPC is currently the strategy. The division is now at around forty-five people and should reach eighty by the end of its first fiscal year in March 1992.

GROWING DEC-OLIVETTI ALLIANCE MOVES ON TO JOINT UK DEVELOPMENT

Ing C Olivetti & Co SpA's Olivetti Systems & Networks has revealed a joint research and development agreement with Digital Equipment Corp to bring multimedia products to market. No financial terms are being disclosed but DEC will put up long-term funding to finance some of the work that will be carried out at the Olivetti Research Laboratory in Cambridge, UK. The particular technologies initially involved appear to be Olivetti's infra-red tagging active badges and the Pandora project, which involves multimedia products on workstations. DEC will have commercial rights to technologies and systems developed by Olivetti Research Laboratories in what is clearly a long-term and deepening relationship between the two - DEC already sources all its personal computers for Europe from Olivetti and is marketing its Walkstation notebook computers on a worldwide basis.

X-WINDOW USERS FAVOUR MOTIF SAYS STUDY - BUT ALL WANT TO GET "MACKED"

Speaking at Interactive Systems Corp's Developer Conference in Los Angeles recently, (UX No 337), Steve Audiore, president of the X Business Group, revealed the results of a study into the use of graphical user environments and desktop managers. According to the survey of X-Windows users, the Open Software Foundation's Motif interface is way out in front, currently in use with 47% of those users questioned. Open Look was the preferred environment for 12% of users, followed by SunView with 7%, Microsoft Windows and DEC Windows at 3%, New Wave and Open Windows with 2% each, other interfaces accounting for 13%, whilst 10% worked with none. As far as desktop managers go, 33% of those surveyed said they were not using one. IXI's X.desktop and Visix Software's Looking Glass tied for top spot with 13% of respondents currently using their respective front-ends. Sun View was in use at 7% of sites, others accounted for 22%, whilst some 13% admitted that they did not know which desktop manager they worked under. Audiore examined the pros and cons of Motif and Open Look and concluded that whilst Motif is still restricted by the fact that it is not supported by Sun Microsystems, is not fully mature, does not include a desktop manager and has to be licensed, Open Look by contrast is not perceived as an "open" standard, is not supported by the likes of IBM and Hewlett-Packard, and is not consistent with the look and feel of the bulk of personal computers. Questioned about what they would use in an ideal world, customers said they wanted industry standards and open systems in preference to alternatives. Whilst recognition of Motif proved high, and Motif-based applications and environments were preferred, whatever the hardware platform in place, knowledge about what the interface actually is, was low. 68% said they would be using Motif in the future, 16% said Open Look, 4% will use Sun View, 2% DEC Windows and 10% will use others. Audiore believes that there is no single right answer to the GUI question, and that there is little technical difference between Motif and Open Look. However, choices will ultimately be based upon personal preferences, Audiore believes, and he advises customers that want to develop a more mature graphical environment to go for Open Look and those that want a low-level, "open" GUI, to go with Motif. Regardless of the issues, Audiore found that all customers want to get "Macked" in one way or another.

LYNX PORTS REAL TIME KERNEL TO THE SPARC

Lynx Real Time Systems Inc is to port its real-time operating system, LynxOS, to Sun's Sparc-based workstations and Sparcengine embedded board products under a marketing agreement with Sun. Sun said LynxOS will be the only third-party real-time operating system that is completely compatible with SunOS. Customers running LynxOS on Sun boxes will be able to run Sparcware applications without modification or recompilation. Sun, which is currently putting real-time extensions such as a pre-emptive kernel into SunOS as part of its migration to SVR4, said customers whose speed requirements cannot be addressed by SunOS will have the option of using LynxOS. The pair expect their collaboration to be popular with industrial manufacturers, the military and embedded systems. LynxOS for Sparcstation 2s will be available in early 1992. It will be binary compatible with SVR4 SunOS, due by the end of the year. Applications for the Sparc LynxOS can be developed now with the Sun SVR4 developer's release. Cross-development packages running on Sparcstations are available now from Lynx for Intel and Motorola chip families and will be available for Sparc-based targets in early 1992.

NEW US SUN AND PC UNIX SOFTWARE DISTRIBUTOR TO DELIVER IN AUGUST

A new US-wide sales vehicle for commercial Unix personal computer and Sun Microsystems software is about to be born. The Sunnyvale, California start-up, Unix Connection, is the brainchild of Bill Shott, who started and managed the \$12m BTOS Connection, a similarly chartered internal reseller, while at Convergent Technology, later part of Unisys. The fledgling is backed by \$1.7m in venture capital funding from Alpha Partners in Menlo Park, California and will officially kick-off on August 1. Shott has gathered some 50-plus pieces of "off-the-shelf" software to resell direct to end users including dBase IV, eXclaim!, Framemaker, Lotus, Mathematica, Wingz, WordPerfect, Island Write, Paint, Draw and X.desktop. He's of the firm belief that most users don't know what products are available let alone where to buy them, since the MS-DOS-dominated marketplace has given Unix software little shelf space. As a result, in the Autumn, Unix Connection will publish and mail to 100,000 end users a four-colour 32-page co-op catalogue featuring the software it's selling. The company, which reckons it will have half a million end user names in its database within 12 to 18 months, expects to use this vehicle as an initial lever to its telemarketing push. The lists are coming from the vendors themselves as well as trade show organisers and Unix publications. Behind the catalogue are Unix Connection's 12 sales reps and applications engineers, specialised by product category and knowledgeable about compatibility and configuration issues. Unix Connection's support will all be over the phone and the vendors, for whom the company will sell support contracts, are expected to become involved. The company, which says it has all the products it's selling running in-house, as well as an inventory product to be able to deliver to customers within 24 hours, will focus primarily on horizontal applications covering office automation, databases, groupware, networking and connectivity, utilities and, in the future, peripherals. The company is evaluating the idea of selling the operating system itself, but would also like to steer clear of party politics.

SIREN DEBUTS NEW VERSION OF ELECTRONIC MAIL SYSTEM

Siren Software Corp, Menlo Park, California, unveiled version 2 of its Z-Mail electronic mail management system at Xhibition a couple of weeks ago, (UX No 337). With Z-Mail, users - Ken Olsen take note, (UX No 337) - can sort and prioritise mail automatically, filtering the mounds of junk mail now winging its way across the wires into the wastebin without a keystroke. It's claimed to be able to send any type of file - text, binaries, fax, voice, video and applications files - and comes with the Z-Script language for integrating Z-Mail within other applications and customising graphical menus systems. Supporting Motif and Open Look - it also runs on character-based terminals - Z-Mail costs \$1,400 for a five-user licence and is available on Sun Microsystems, Apollo, DEC Ultrix, MIPS Computer Systems, Data General AViiON, Pyramid Computer, Motorola 88000 and Apple A/UX machines and personal computers running SCO Unix. Z-Mail was conceived and built by Dan Heller, founder of Z-Code Software, San Rafael, California - Siren is the exclusive distributor for Z-Mail, (UX No 319). Siren's vice president of marketing, Bruce Cleveland, says the firm is currently working on a database version of Z-Mail in conjunction with Z-Code and Black & Decker-owned PRC, Plain, Virginia. Siren - populated by ex-Oracle staffers - is currently setting up single-distributor relationships for Z-Mail in the UK, Europe, Australia, Hong Kong and Japan.

BOB ALLEN BREEZES INTO DAYTON TO REASSURE NCR STAFFERS

AT&T Co chairman Robert Allen has been in Dayton, Ohio rallying the troops in the wake of the agreements between his company and NCR Corp on harmonising their product lines last week. Declaring that the commitments he made earlier to Dayton and NCR were "rock solid," Allen declared "NCR becomes the core of AT&T's computer business, its name stays the same, its people and structure remain in place, its world headquarters stays right here in Dayton and NCR's leadership will be running the show." Allen added that as part of AT&T, "NCR will continue the strong corporate citizenship and philanthropic support that have been a tradition since the days of NCR founder John Patterson." He noted that doing business in a community brings with it responsibilities to contribute to that community in numerous ways, including jobs, taxes and charitable support. "This is the NCR way now and it will continue to be the NCR way," he said. During meetings throughout Monday, Allen said that his message to everyone is the same. "I'm glad that AT&T will become an even bigger part of Dayton and Ohio than we are now and I'm glad that NCR will become a major part of AT&T and of a future that I believe is filled with promise." AT&T employs over 10,000 people in Ohio, over half of them at its electronic switching equipment plant in Columbus. About 400 AT&T people work in Dayton, where NCR is the city's second largest private employer, with 5,900 employees working at several facilities in the area.

MCDONNELL DOUGLAS PRESSES SOFTWARE VENDORS TO CONTINUE TUXEDO DEVELOPMENT

McDonnell Douglas Information Systems, which wants to use AT&T's Tuxedo transaction processing monitor on its new Series X multi-processors which are based upon Encore Computer Corp's Motorola 88000 Encore 93 line, is currently in talks with database vendors Oracle and Ingres - which originally committed to the AT&T software - to make sure that they'll carry on developing for Tuxedo despite the fact that NCR's Top End monitor appears to have won out over Tuxedo following the planned harmonisation of AT&T and NCR's product lines, (UX No 338). Matt O'Malley, director of platform products at McDonnell Douglas, said the firm wants to continue with Tuxedo because it believes that the AT&T offering has a two to three year lead over Top End. Series X employs a dual-bus architecture which comes from Encore's Multimax computer line, to which McDonnell Douglas has added VME functionality. Encore has not included the dual-bus on its 93 Series because they are primarily aimed at the real-time market, said O'Malley. Applications running under McDonnell Douglas' Reality/X version of Pick under Unix on its existing National Semiconductor-based RX series - also from Encore - will run on the Series X systems without re-compilation, the company claims, because Reality/X applications - the Pick variant is implemented as an application under Encore's multi-threaded Umax Unix-like - generate pseudo-code via an interpreter, code which is reckoned to be processor-independent.

FI GROUP MAKES TWO KERNEL ACQUISITIONS

FI Group Plc, the Hemel Hempstead, Hertfordshire-based software and services operation, has purchased the Leeds, West Yorkshire-based Kernel Technology Ltd and Kernel Training Ltd, two open systems services companies. The two companies, acquired for an undisclosed sum, have 70 staff and a combined turnover of £3.6m. Says chief executive Hilary Cropper, Kernel Technology and Kernel Training will be run independently, reporting to FI Group's new open systems division. Kernel Technology was established in 1986 to service the open systems market. The company specialises in the development of commercial and technical software tools for Unix. It has a technical division, which supplies services to hardware manufacturers and an applications division, which provides services to government departments and commercial users. The £1m-a-year Kernel Training offers education and consultancy services to the same markets.

APPLE PIES

Motorola "might make RS/6000 chip for Apple"

The daunting prospect of a merged IBM Corp-Apple Computer Inc company seemed to come a good deal closer last week, although information was flowing only through a few favoured sources - mainly the *Wall Street Journal*, *New York Times* and *Businessweek*. The *New York Times* reported that the negotiations, for a collaboration on a new workstation that would use IBM's RS/6000 RISC and run the portable operating system code-named Pink that Apple is developing, had made progress. According to the *Times*, the two companies are discussing 50-50 shared ownership of the new operating system, which could cost \$100m or more to develop; the resulting machines, described as successors to the Macintosh, would be marketed by both Apple and IBM. It is also suggested that IBM might license Motorola Inc to make the RS/6000 RISC for Apple as a consolation prize for the company not using Motorola's 88000 RISC. The paper suggests that Apple wants significant cash from IBM to help with the development, but points out that IBM may well want royalties for use of its chips and patents, which could cancel out the benefit of the cash for development of their operating system.

Are leaks preparing Apple employees for shock of merger?

Taking the story to its logical conclusion, if the new machines really are to replace the Macintosh rather than simply be offered in parallel, once they are out there will be nothing left of Apple that IBM does not have a part of, so there would be little point in Apple remaining independent - and the story has a strong feel of one that has been planted to soften up Apple employees and customers to the idea of being acquired by IBM. The *Times* also confirmed what we revealed way back in January, that these talks have been going on for a long time. After the first flush of excitement and flurry of sales, all the evidence is that the RS/6000 is no longer meeting its targets, and the developments with Apple also suggest that IBM may be having second thoughts about having appeared to embrace Unix quite so enthusiastically.

Hurricane could blow away 88000 chip

Insiders say it is an Apple Computer task force code-named Hurricane that is looking at the idea of a technology swap between Apple and IBM Corp, and suggest that the initial proposal for collaboration came from IBM: despite the Ford Motor Co deal for a microcontroller version of the 88000 RISC (UX No 338), some observers question whether Motorola Inc will continue development of the 88100 RISC if IBM licenses it to fabricate the Rios RISC for Apple, and as a second source for IBM - but Motorola's own computer business is now dependent on the 88000. Of course, Apple might simply be trying to get a better deal out of Motorola for the part by piling on the pressure.

Pink is the colour, as redundancies at Apple mount to 800

Pink seems to be Apple's colour these days - both in operating systems and redundancy notices. The company issued pink slips to an estimated 800 people last week, sparking a demonstration by another 150 against the fat cats at the top. The only thing we can add about the operating system Apple has under development and on the negotiating table with IBM, is it's supposedly meant to run DOS, OS/2 and Mac programs. Nary a whisper about Unix.

IBM's options on the desktop are narrowing fast

Why should the deal with Apple be so important to IBM? The company is grimly aware that personal computers and open systems are progressively skimming the dollars that used to represent most of the profits in mainframes, and it's not too hard to project forward to 1995 and see the same thing happening to the AS/400 - and now that Microsoft Corp and Apple together own the desktop, that would leave IBM with nothing fast-growing that it owned; IBM probably wouldn't even want to own Microsoft now even if it could, and a completely new desktop operating system rather than one upwards-compatible with either MS-DOS or Macintosh System would fare no better than OS/2, which means that the Apple-RS/6000 option is the only game left for IBM to secure its future in the second half of the decade. Does IBM need to acquire Apple? Well what do you think?

unigram·X

The Weekly information newsletter for the UNIX ® community worldwide

In the Microsoft Corp versus Apple Computer Inc and Hewlett-Packard Co suit, Judge Vaughn Walker denied a motion from Hewlett-Packard to reconsider his March 6 decision denying the company a declaration that Apple's copyrights were invalid for lack of originality, and that Apple had defrauded the copyright office by filing a copyright for something that Hewlett believed to be unoriginal; the judge is still considering Apple's motion to extend the suit to Windows 3 as well as 2.03.

Hewlett-Packard says it has pilot New Wave sites in 134 of the Fortune 1000 companies, and internally has 160 developers working on it.

Panic is a totally inappropriate response for little guys with market-dominating products that use hard-to-master technology or operational methods, when one or two of the majors in a related business vow to take over their turf: 18 months ago, Microsoft Corp declared war on Adobe Systems Inc and its PostScript page description language, won Apple Computer Inc to its cause, established a printing business unit and set out to develop the True Type product line: 18 months on, Adobe and PostScript still rule supreme, and, reports the Wall Street Journal, Microsoft has quietly disbanded its printer business unit, and says it will now concentrate on "providing great printer software" for Windows 3.0.

Fujitsu Ltd will start fabrication at Wakamatsu of its SPARClite chip for embedded control, developed at its San Jose base, from January. It will be made in 0.8 micron CMOS, is rated at 37 MIPS and is aimed at applications such as controllers for laser printers and other office equipment.

Cray Research Inc says that several customers including Ford Motor Co are expressing interest in its forthcoming C-90 16-processor supercomputer, which is expected to appear as the Y-MP/16, and that Ford may be an early customer; the \$30m machine is planned for first deliveries in first quarter 1992.

Work at Cognos Inc on the development of its PowerHouse database and 4GL is carried out on Sun workstations, and there is a version of PowerHouse for SunOs finished and ready to ship, simply awaiting the executive green light - or IBM approval? An SCO Xenix version is unlikely to appear until 1993. Cognos held its first user show, Cognition '91, at Anaheim in California recently.

The latest meeting of the IEEE's P1201.1 committee in Boulder, Colorado a few weeks back resulted in the selection of XVT, the Extensible Virtual Toolkit from XVT Software Inc, also of Boulder, as the base document from which to draft the standard for its Layered Application Program Interface for graphical user interfaces: the committee also voted to use the US Air Force's Strategic Air Command's Things as a reference document. XVT's software library currently supports OSF/Motif, Open Look, Macintosh, Microsoft Windows, Presentation Manager and character displays.

RPCs have done as much as anything to divide the industry, and adherents on all sides have always seemed imbued with a zealotry akin to the early Christian martyrs - that is until IBM decided it was time for a dose of pragmatism and secretly inched over the line: According to the Clarke Burton report the journal of networking computing, IBM, that OSF founder and staunch supporter DCE's NCS RPC, is quietly working with Netwise to get its customers who are also ONC users to support the stuff. That's why it's gone to Netwise to get the compiler technology and Sun Microsystems to get the libraries and wants it running on the RS/6000 and AS/400 as well as MVS (UX No 298).

KMart - for which IBM also deviated from course and bid SVR4 of all things in hopes of snaring a sizeable contract from the UI stalwart (UX 336) - is not happy with the jerry-rigged hardware IBM is bidding along with the software. Believing that IBM intended to keep the PS/2 line single processor, its own people bid 95s with AOX boards to make them multiprocessors like KMart wants, little suspecting that deep within the bowels of IBM lurked an unannounced asymmetric four-to-six processor 486 server. You can imagine internal reactions to press reports the week before last that such a beast existed. Now IBM has to determine whether these MPs - or something like them - are actually going to be productised and resubmit its KMart bid tout suite.

New York-based Spectrum Concept has given the RS/6000 an LU6.2 file transfer capability by porting XCom 6.2 software to the IBM box: data can be shared peer-to-peer by heterogenous systems including IBM mainframes, midrange computers, PCs, Macs and multivendor Unix platforms. The system, equipped with a Motif interface and running in beta, should be available in September.

On Monday afternoon in New York, Intel is supposed to officially unveil the 50MHz 486, good thing too considering how many boxes will turn up the next day at PC Expo sporting the thing.

Sparc International, which now has to counter any rabbit punches from the ACE Initiative, currently has 191 members versus ACE's 50 odd.

Sun Microsystems Inc's notions of multimedia centre on a mass market Sparcstation IPC style machine, where, as reported, the audiovisual elements are on the mother board: Sun technology president Eric Schmidt said all the performance has to be native, because people won't pay for that kind of add-on.

Advanced Software Engineering Technologies, Pittsburgh, Pennsylvania, will launch a user interface management system at the end of the year; it comes with a 4GL supporting WYSIWYG layouts: out first on Sun Microsystems Sparcstations running Motif, it's priced at \$10,000, with an Open Look version planned for the future.

The re-organisation of Santa Cruz Operation's products and services divisions into separate units, (UX No 338), has meant that 70 jobs will also go from its 1,300-strong operation around the world.

Data General is reported to have a 33MHz, dual-processor Motorola 88000-based AViiON workstation in the pipeline: it's rated at 60 MIPS.

Sybase's APT Workbench development software will be getting a fully-functional Motif and Open Look applications environment: Sybase will be front-ending APT with London-based Alex Technologies Ltd's Alex interface conversion package. Sybase is said to be preparing an initial public offering of its shares in the US for August.

DEC is saying it may have to lay off more people in the fiscal year starting July 1 depending on the economy: It's already trimmed 10,000 jobs and analysts are speculating another 10,000 could go.

Olivetti expects its first-half revenues to fall between 5% and 6% because of sluggishness in the European computer market: Olivetti chairman Carlo di Benedetti said the company may have to further reduce its workforce, now down almost 10%, if the climate doesn't change soon. The company is now evaluating management on the basis of cash flow, not profits.

Last week Ashton-Tate was set to start shipping dBase IV 1.1 for 386/486 boxes running SCO Unix V/386 and Xenix 386, AT&T System V/386, Interactive Unix v/386 and Esix System V: Prices start at \$995 list. The packages stand beside a version already available for SunOS.

NCR has formed a strategic relationship with FourGen and will sell its software, recently ported to the NCR 3300 and 3400 lines, to distributors, VARs and end users through its direct sales force.

Cary, North Carolina-based SAS Institute's full Unix version of its SAS System software, Version 6.07, is being launched in two phases: the first batch, available now, supports DEC's RISC/Ultrix Release 4.0 on DECstations, IBM's AIX Release 3.1 on the RS/6000, Apollo's Domain Release SR10.2, Hewlett-Packard's HP-UX Release 7.0 on the HP 9000 Series 300 and 400, Data General's DG-UX on AViiON, and MIPS' RISC/os on MIPS and binary-compatible workstations; the second release phase, available in the summer, will support NeXT Computer Inc's NeXT workstations, Hewlett-Packard's 9000 Series 700 and 800, Silicon Graphics' workstations, and Sun Microsystems' Sun-3 and Sun-4s; the new release of the SAS System supports Sun's Open Windows, the Open Software Foundation's Motif, and NeXT Computer's NeXTStep interfaces.

Persistent rumours in the marketplace that office automation software house Uniplex is up for sale were denied by the company last week: the company responded by quoting Dataquest and Wharton figures showing its continuing lead in the OA market.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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- 2 JUL 1991

The weekly information newsletter for the UNIX ® community worldwide

London, July 1-5 1991

Number 340

APPLE-IBM COOPERATIVE ALLIANCE "ON ICE" ...

The attempt to forge an alliance between Apple Computer Inc and IBM Corp, (UX Nos 315, 337), looks to have broken down over disagreement on the proposals which would see Apple license IBM's RS/6000 Rios RISC processor for use in a new generation of Macintoshes. The rest of the outline agreement seems to have been that Apple would likely combine its Pink operating system development with the work being done at IBM's Patriot Partners Inc joint venture with Metaphor Computer Systems Inc. Object-oriented technology would be at the core of any collaboration, with one likely aim to create a programming interface and operating system overlay that enabled the same applications to run under different operating systems, and perhaps on incompatible hardware. On the hardware side - where talks appear to have stalled - IBM would have licensed Motorola Inc to fabricate the Rios chip - provided Apple finally settles on the IBM RISC in favour of the alternatives for its future workstations.

... AS IBM GIVES OVERWROUGHT SECOND TIER APPLE EXECUTIVES TIME TO COOL OFF...

One of the most certain side effects of the proposed alliance was that it would cause an impassioned outcry among second tier Apple executives and all the people at the company that had come to believe the propaganda that Apple was not like other companies, most of all was not like IBM, the personification of "the enemy" in the minds of many at the company. It appears that the explosion happened when, according to the *New York Times*, some 50 Apple executives met 100 IBMers in Austin last week to thrash out details of the deal. According to the *Times*, the meeting predictably went badly, and as a result, the planned announcement of the deal in San Francisco last Thursday - which was on as late as midday on Tuesday of the same week - was postponed indefinitely. One of the problems identified is that the Rios RISC is too expensive to be the basis of the low-cost, low-end machines that Apple needs in its line, which is why many people at Apple are still leaning towards Motorola Inc's 88100 RISC. It is difficult not to believe that there is a hidden agenda in all this, and that below the very top Apple management, no-one in the company is yet aware of the extent of the collaboration proposed - or of how crucial IBM now sees it to its future strategy for the desktop. Does this mark a permanent rupture? "It's not cooked - we're not ready to take it out the oven," one participant told the *Times* - sounds as if IBM is giving unhappy Apple people time to cool off and get used to the idea that their world is about to change completely.

...SOURCES SAY DEAL "IS STILL ON TRACK"

Speaking to Unigram last week, a source at IBM said that he recognised a trend inside the company which wants to tie together those already under its belt - Wang, (UX 339), Lotus, (see back page) and Novell, (UX No 339) - with Apple, into a package aimed squarely at Bill Gates and the ACE consortium initiative. It would certainly make the rift with Microsoft Corp complete: OS/2 becomes an IBM proprietary operating system - as we have repeatedly said it is de facto already - and IBM's deal with Lotus Development Corp on cc:Mail eliminates another Microsoft product from the IBM line. According to the source, early last week everything was still on track for exactly the way Unigram described it back in January, (UX No 315): take-over.

LOW-END SUN KICKERS DUE THIS MONTH

Sun Microsystems Inc is to announce the expected kickers for its low-end IPC and SLC systems on July 22 in the UK - the same time as the machines debut at the Sun Expo show in the US. The 25MHz Sparc RISC-based IPC launched last year, (UX No 293), is expected to be replaced by a 33MHz CPU box, with on-board GX graphics, 16Mb to 64Mb RAM, Sbus slots and a 19" monochrome monitor. Meanwhile problems with Sun's Galaxy multi-processing effort - originally expected next month, but reported to have slipped to later this year or early next, (UX No 326) - continue. According to the US trade paper *Computer Systems News*, Sun has had problems running internally developed multi-processing software on top of the SunOS Unix kernel, and is also re-working the hardware after it failed to best the performance ratings of Hewlett-Packard's uni-processor Snake workstations: a Sun spokesperson said that a multi-processing announcement is still on course for this year.

EXOTIC AND UNFAMILIAR NAMES DOMINATE LIST OF 40 NEW ACES

Forty exotic, and for the most part unfamiliar and unlikely companies hopped on the ACE bandwagon last week, swelling the Initiative's ranks to a total of sixty-one firms. The number of new members, which MIPS described as including thirty-two systems companies, six software firms and three semiconductor houses, exceeded the estimates MIPS was bandying about just days before the announcement was made last Tuesday in New York (UX No 339). Tatung, however, whose conversion to ACE would have been something of a coup for the Initiative because it is already allied to Sparc, got cold feet at the last moment and bowed out, citing an unfinished corporate review of the ACE proposal. Tatung's name was in the press releases and sources said the firm waffled several times before deciding to disassociate itself from the announcement. As expected, the Tatung entity interested in joining is Tatung Company of America, a subsidiary different from the one cloning Sparc boxes. As it was, the Initiative managed to recruit one prominent Sparcette, namely Goldstar, the Korean conglomerate, as well as Sparc International members Megatek Corp and Migration Software Systems. Collectively, the new adherents represent more than \$4 billion in revenues and over two million desktop shipments in 1991, MIPS said. Systems Software Marketing vice president Jim Ballmaier, the MIPS executive charged with signing recruits, told Unigram that the paperwork to join had been sent to yet another sixty companies, including forty systems vendors. MIPS now intends to turn its attention from hardware to software companies and will campaign to get the top five firms in every market segment to join the Initiative, Ballmaier said. The new ACES, mostly low-profile companies, include Adaptec, Altos India, Bull Micral of America, Corollory, CSS Laboratories, Daewoo Telecom, DCM Data Products, Deskstation Technology, Du Pont Pixel Systems, Epson America, Heurikon, Jetfill, Justsystem, Lockheed Sanders, Micro Computer Systems, Parallan Computers, Porro Technologies, Reply Corp, Ross Systems, Samsung Electronics, Sanyo Electric, Set Technology, Stereo Graphics and Tyan Computers. Offshore firms include Bruker Analytische Messtechnik, ITOS Computer and SPECS GmbH from Germany; Gain Systems from Korea; and the UK's Algorithmics (the Whitechapel Workstations spin-off) and Research Machines Plc. Software firms include Banyan, BioSym Technologies, The Cad Group and Zycad. The three semiconductor firms are LSI Logic, probably the largest of the MIPS licencees, plus Integrated Device Technology and Performance Semiconductors, also MIPS suppliers. A pre-requisite of ACE membership is the pledge to produce MIPS-based boxes.

THE WINNER AND LOSERS IN THE AGREEMENT UNDER WHICH IBM RESCUES WANG LABORATORIES

by Tim Palmer

Who wins and who loses in the alliance between IBM Corp and Wang Laboratories Inc? Clearly IBM wins - it gets much of Wang's VS customer base handed to it on a \$25m plate without having to work for it, which given the impression created by the latest - decorous - outburst by John Akers, is the way many IBMers seem to like to get their business these days.

Wang is nominally committed to continuing to develop the VS for customers that want to remain loyal to what was in many ways an AS/400 a decade before IBM created the machine, but with the cost of development spread over a dwindling customer base, that position is not going to remain tenable for long. IBM also gets a new adherent to its RS/6000 at a time when sales of the Unix line are beginning to look a little less optimistic - the Wang deal and the putative one with Apple Computer Inc could well be crucial to a prosperous future for IBM's last make-or-break effort to crack the Unix market. And as IBM itself makes clear, one attraction of the Wang deal is that it prevents the company going to a competitor.

What's in it for Wang? Strikingly little unless the company really was on the brink of a Chapter 11 bankruptcy filing without an IBM rescue. It means a big new round of layoffs after the company has already cut its workforce by almost half over two years as the company runs down hardware development and most remaining manufacturing. And it saddles a demoralised sales force with selling products that until this week they were competing most fiercely against and disparaging most strenuously. Several Wang office software products will be included in future IBM products, the companies said, but there is no detail on that. Richard Miller, Wang's chairman and chief executive said "This alliance should assure our customers that their investment in Wang products and services is a wise decision... our ability to offer IBM's products together with our own provides a clear and certain path for Wang's past, present and future customers." And that is the crux of the deal: Wang's customers had so little confidence in the future of the company that they had stopped buying, so that although Wang has made a remarkably successful effort to eliminate its debt, it has not reaped the reward that effort deserved: the improvement in its financial position that should have followed has simply not materialised, it will report another big loss for the current fiscal year just ending - on sharply declining turnover. The other losers in the deal - apart from MIPS Computer Systems Inc, which will now almost certainly lose Wang as an OEM customer, have to be all the smaller companies that might have reached some kind of agreement with Wang - from Digital Equipment Corp on down - but didn't. One can think of Siemens-Nixdorf Informationssysteme AG, which desperately needs to go big in the US and the Far East if it is to survive, and has a product line that would have fitted well with Wang's channels. NCR Corp would have provided Wang with an ideal partner had it not been preoccupied itself fighting off the eventually successful AT&T Co bid just at the time when Wang was ready to surrender - NCR and Wang discussed a merger three years ago. And Wang would have provided any of the ambitious Japanese with an entree into the US market for their arrays of internationally weakly-marketed products. And despite the fact that much of Wang's salesforce is today seen as so demoralised it couldn't sell its way out of a paper bag, with a hot new set of products and a big company to underwrite its survival, Wang would have been able to tempt back some of the best sales talent that has departed. For IBM, the Wang deal is only a beginning and many similar OEM agreements for major product lines may well follow - Terry Lautenbach said IBM was talking to other companies in the industry, but he declined to elaborate.

TWINHEAD DITCHES LSI/OPUS SPARC ROUTE FOR 40MHz CYPRESS PART...

Taiwanese Sparc system-builder Twinhead International, has abandoned any notion of building a box around the 20MHz LSI Logic/Opus Sparc kit as it originally planned to do (UX No 294). It is now fiddling with a 40MHz three-chip set using a Cypress part as the CPU. The product, the first the company has ever designed in the US, has yet to reach even the engineering prototype stage. It will get that far when they can bring up Unix, hopefully in thirty days. Still struggling with how it'll bring the thing to market, Twinhead expects to demonstrate it at Comdex in the autumn.

AS HYUNDAI READIES SPARCSTATION CLONES

Hyundai, another Sparc cloner which previously reckoned it would restrict its Sparc distribution to its home market in Korea, (UX No 276), is now planning an American announcement of a Sparcstation 1 and 2 in the fourth quarter. Meanwhile, Hyundai last week introduced its first 486 machine, a 33MHz model priced starting at \$6,000, that the company is targeting at client/server environments. The unit's 4MB of RAM expands to 16MB and includes 64KB ROM, cache expandable to 256KB, six half-high storage bays, eight expansion slots, a 1.44KB floppy and hard drives available in 100MB, 200MB and 300MB sizes.

DG LANDS \$100m US ENVIRONMENTAL CONTRACT, BESTS HP, SUN IBM SERVERS IN TPC-B TESTS

Data General Corp continues to pick up those big multi-year contracts that can be the difference between prosperity and oblivion - once they have survived all the challenges that seem to be a feature of the bidding process these days. This time it's up to \$100m over eight years for over 600 AViiON workstations and support for use as geographical information systems by the US Environmental Protection Agency. Data General reports that its AViiON AV 6240 quad processor, running the Informix database, processed data faster than server configurations from Hewlett-Packard Co, Sun Microsystems Inc and IBM Corp in the latest round of TPC-B benchmarks from the Transaction Processing Performance Council: the AViiON scored 102.9 transactions per second, the HP 9000 Series 852S did 90.1 tps, Sun's SparcServer 470 reached 75.2 tps, and IBM's RS/6000 Model 550 performed at 63.8 tps. And Data General also says that its DG/UX implementation of the Unix System V operating system has been certified as being Posix and X/Open Portability Guide 3-compliant.

UNISYS GETS KPMG PEAT MARWICK ON ITS SOFTWARE TEAM

Unisys Corp reckons that it has won a rather closer development and systems integration alliance with KPMG Peat Marwick & Co than is typical in the industry. The computer manufacturer and the accountancy firm have reached agreement on a long-term business alliance covering a broad range of joint software development, systems integration and marketing activities, initially in the US. Initial projects will include the development of a software engineering and fourth generation language personnel management system, and both discrete and process manufacturing management systems, primarily to run under Unix on Unisys' U-series machines. The two plan to create a set of fully-integrated systems using Unisys' tools and incorporating additional Unisys technologies such as imaging and electronic data interchange. A key element in the Unisys-Peat Marwick alliance is the immediate establishment of a Technology Resource Centre near Atlanta, Unisys said. The centre is already staffed by about 20 KPMG personnel, and will be responsible for all alliance development, integration and demonstration activities. It will work closely with Unisys technology and initially pitch at Unisys customers.

FORTY COMPANIES CONTRIBUTE TO UNIX

INTERNATIONAL'S OSI APPLICATION INTERFACE

Unix International has published its API specification covering OSI layers 4-7. The document, in creation since 1989, is the work of Unix International's OSI Work Group and represents input of some forty companies. OSF members Hewlett-Packard and DEC, the latter on a more informal basis, also participated. Unix Systems Laboratories will start delivering code based on the specification in a few months. The specification embraces the OSI protocol known as the Association Control Service Element/Presentation Library Interface (ACSE/PLI), which the Work Group was instrumental in having developed and which allows applications to run across heterogeneous systems. Unix International chief Peter Cunningham said the Corporation for Open Systems International (COS), Europe's Standards, Promotion and Applications Group (SPAG) and Japan's POSI are expected to endorse the document along with X/Open whose own XNet Work Group has already adopted the specification as part of its own OSI document. Unix International also released a draft document specifying hardware and software standards for its Japanese language implementation of the base OS, windowing system and GUI. Cunningham said the bulk of the Japanese companies including those affiliated with OSF are expected to endorse the specification. Formal review begins later this month in Japan. Unix International expects to have a formal document in September, with Unix Systems Laboratories developing product thereafter. Cunningham noted that the specification was expected to hasten the adoption of Unix at the commercial and office automation end of the Japanese market where its use to date has been scanty.

DEC UNVEILS CDD/REPOSITORY CENTREPIECE OF COHESION

In an extremely low profile manner Digital Equipment Corp has launched its extensively previewed CDD/Repository, taking it from the realm of the CDD/Plus data dictionary under VMS into the world of distributed, multi-vendor software engineering that embraces VMS and Ultrix courtesy of DEC and the vendor world beyond, thanks to third-party offerings. The object-oriented ATIS - A Tools Integrating Standard - interface to CDD/Repository, that is still being considered as an Information Resource Dictionary System component, is being used by 16 third parties such as Cognos Inc, Information Builders Inc, Andersen Consulting and SD-Scicon Plc that want to integrate their tools tightly with CDD/Repository. DEC has also published its Repository Information Model that describes the objects in the repository and the relationships among these objects - the model has been developed with collaboration from third parties. Other products developed to take advantage of CDD/Repository include CDD/Administrator providing a graphical user interface for repository administrators; and DECset v.11, which is the next generation VAXset product, now engineered for Ultrix systems as well and incorporating Application Control Architecture services - a gateway between the Architecture and Hewlett-Packard Co's Distributed Object Management Facility is currently being developed at the Object Management Group. Other products include a project management tool, DECplan, for the multi-user environment and several packaged Cohesion applications including Cohesion for Rapid Development, Cohesion for TP Development and Cohesion for IBM Cross-Development. DEC is in active negotiations with Bourne End, Buckinghamshire-based Software One Ltd to ensure that CDD/Repository will be able to co-exist with IBM's Repository - whenever it arrives.

PRIME LAUNCHES FULLY REWRITTEN COMPUTERVISION CADDS-5 TO APPLAUSE

Prime Computer Inc is generating excitement with its complete rewrite of ComputerVision's CADDS computer-aided design software, which runs on Sun Microsystems Inc workstations. The new CADDS-5 has a new screen interface designed to be much easier to use, and Prime is to sell it in modular form as well as offering the complete package at \$24,500. Another first with the new release is that it will be offered through independent resellers as well as direct. It is due for general release this autumn.

MIPS DELIVERS 150 PAGE ARC SPEC...

In addition to the forty new additions to ACE - see front page - MIPS also started distributing the initial release of the ARC specification last week, a 150-page document stamped "Member Confidential" until the first boxes appear in public and intended to define the minimum hardware standards ARC-compliant MIPS systems will have to meet to ensure they can all run the same applications. All the Initiative was willing to share with outsiders was ARC's use of 8MB of memory, IEEE 802.3 interfaces, Token Ring IEEE 802.5 interfaces, SCSI, serial and parallel ports, audio input and output, 1024 X 768 8-bit display, a mouse, a 101-key PC-style keyboard and CD-ROM media interchange in addition to floppies and others. Addenda covering two I/O buses, EISA and Turbochannel are expected to follow in six to eight weeks. Publicly, the ACE people only touched in the briefest possible way on ARC's novel Hardware Abstraction Layer (UX No 335). Privately, however, one of their number called it a "noble experiment," admitting that it could prove to be their achilles heel. Intended as a means for the ACEs to differentiate themselves and add value, it's a great concept, he said. But what happens if some of them - "me too" companies to their very core - lapse into chronic clone-ism and simply start knocking off the big boys' boxes? On the other hand, he said, the whole HAL notion is fraught with the possibility of creating serious non-compatibility problems for the whole Initiative.

...OWNED BY COMPAQ, DEC AND MIPS, FOR NOW

In case anyone is curious about the ARC specification's ownership, it turns out that during "the initial development phase" the preliminary specification is jointly owned by Compaq, DEC and MIPS - no surprise there. When it's finished, no one company will own it and it can be bought for a nominal fee. If the latest round of ACE Initiative recruits look like a bunch of refugees from the personal computer arena it's because they're being wooed to ACE's side by its siren song of easy migration from Intel/CISC to MIPS/RISC, the warm and comfy feeling they get from being able to tell users their current Intel investments won't be wasted and ACE's apparent initial focus on the desktop. However, the Initiative has some up-market intentions as well. An ACE Multiprocessing Special Interest Group has already been formed, led by Olivetti out of its R&D centre in California. It's supposed to be submitting its work to the main group for review in the next few months. Besides that, MIPS VP Jim Billmaier says the company expects to be able to produce a 1000-MIPS fault tolerant machine next year stringing 4-32 MPUs together. The MIPS R4000 chip, expected to support all this once it gets into production and forecasted to perform initially at around 50 MIPS, (UX No 332), could be stretched to give 200 MIPS.

UNISYS ALLY HAS TUXEDO FOR RS/6000

Cocking a snook at both AT&T Co, which has dumped the product for NCR Corp's Top End, and at IBM Corp itself, which is believed to be working on a version of CICS for the machine, Unisys Corp's Ally Software Inc last week announced that it was shipping an implementation of the Tuxedo transaction processing monitor for IBM's RS/6000 under AIX. Ally quotes InfoCorp figures suggesting that the Unix-based transaction processing market will reach \$14,900m by 1994. Ally also plans to implement its Ally applications generator on the RS/6000. The AIX version of Tuxedo will ship next month starting at \$1,500, and Ally will follow in the fourth quarter.

ACE BV WINS AMOEBA DISTRIBUTION RIGHTS

Unix expert ACE Associated Computer Experts bv of Amsterdam has won exclusive distribution rights for the Amoeba distributed operating system, developed at the Free University of Amsterdam under the leadership of operating systems guru Andrew Tanenbaum. ACE has the worldwide rights for Amoeba, a distributed operating system able to transparently take advantage of parallel processing architectures that has been under development since 1980. According to Tanenbaum, the system has already generated a large number of requests for information worldwide from major companies - "and when I visited Japan with ACE earlier this year, reactions were enthusiastic indeed." It has been used to implement the transmission of digital television images for the European Space Agency. ACE's managing director, Martijn de Lange, has high hopes for the system. "We expect distributed operating systems to play a major role in the computer market in the future, and Amoeba, just like Unix in 1976, is the obvious choice for ACE."

NEW LOTUS 1-2-3 EDITION FOR SUN SUPPORTS REAL-TIME

Lotus Development Corp has released version 1.1 of its Lotus 1-2-3 spreadsheet for Sun Sparc-based systems. Described as "a major enhancement", and based on the core 1-2-3 for DOS product, the spreadsheet supports X-Windows, integrates Lotus' C Add-in Toolkit and supports Lotus Realtime, which allows real-time financial data to be fed directly into 1-2-3. Real-time data can be updated continuously within the spreadsheet, reflecting rapidly changing security values, interest rates, international exchange rates, commodity prices and other global market data. Lotus 1-2-3 for Sun Sparc Systems supports the Sun OpenWindows environment running Open Look, in addition to SunView windows support. X-Terminals such as the NCD (Network Computer Devices) product family have also been certified. For software developers, the product also includes a C Add-in Toolkit, which offers a set of tools to help produce customized business applications. The Sybase SQL Server Datalens driver is also bundled in. Prices start at \$695 per licence, with upgrades for registered users from \$180.

US REPORT PUTS HP IN TOP SPOT FOR 1990 COMMERCIAL RISC/UNIX SHIPMENTS...

A report by the Aberdeen Group Inc, Boston, Massachusetts, claims that Hewlett-Packard took a 46.9% share of the \$2,400m commercial RISC/Unix marketplace last year, worth some \$1,125m to it. DEC won a 12.5%, \$300m share; IBM took 10.4%, or \$250m; Sun Microsystems and Pyramid Computer Systems did an 8.3%, \$200m share each; MIPS Computer Systems took a 4.2%, \$100m slice, and others accounted for 9.4% - \$225m.

...AS HP REVEALS TPC-A RESULTS FOR NEW NOVAS

Results for the Transaction Processing Performance Council's TPC-A suite running on Hewlett-Packard's new 9000 and 3000 series Nova systems, (UX No 339), start at 20.8 transactions per-second, TPS, and \$16,700 per-transaction, for the 807S; 33.7 TPS and \$14,700 per-transaction for the 827S; and 42.8 TPS and \$14,400 per-transaction for the 847S. UK prices for the new Novas go from under £10,000 to around £130,000. The 34 MIPS, HP 9000 model 807S, and 53 MIPS-rated 817S and 837S - each available from August, supporting from 16 to 40 users - are priced at £9,772, £15,080 and £32,422 respectively. Models 827S, 847S and 857S - all rated at 53 MIPS, supporting from 64 to 160 users and out in September - cost £18,850, £49,010 and £71,630. Prices include CPU, HP's HP-UX Unix implementation, standard memory and disk, console and tape drive. The ten new HP 3000 models are all available from October, prices for the proprietary MPE-based systems, which support from eight to 600 users go from £11,000 for the 917LX series to £128,180 for the 967. And HP says that Hughes Data Systems will be doing a tempest version of the 700 Snake workstations for government and defence markets, the first based upon the model 720 CRX. Out around October, it will cost from £20,000.

PERICOM'S X EMULATION SOFTWARE SUPPORTS OPEN LOOK AND MOTIF

The UK's Pericom Software Ltd, a division of Milton Keynes-based Pericom Plc, which also has a subsidiary in Lawrenceville, New Jersey, (UX No 269), has enhanced its team-X range of terminal emulation software to support graphical user interfaces. Sun-3 and Sparcstation versions are now available with both Open Look and Motif GUIs supplied as standard, allowing users to choose which one to use for a particular workstation configuration. Other versions not supporting Open Look, such as Silicon Graphics, IBM RS6000 and HP9000s have been upgraded to support Motif. The current team-X GUI will gradually be phased out. The team-X range allows existing software to be displayed in X-Windows format without conversion, emulating software written for the DEC VT320/340 or Tektronix, HP, Data General and Retrographics standards. Other hardware platforms include Apollo, DECstations and VMS VAXstations, Motorola 88000 and various X-terminals.

IBM'S OS/2 2.0 FEATURES GRAPHICAL WORKPLACE MODEL

The most striking feature of IBM Corp's OS/2 release 2.0 will be a new object-based enhanced user interface, Graphical Workplace Model, based on Presentation Manager, according to Computer Reseller News. The US trade weekly has been talking to developers that have beta test copies, who say that in contrast to the five distinct logical units in the OS/2 1.3 shell - Desktop Manager, File Manager, Print Manager, Control Panel and Task List, the 2.0 shell provides a single interface for managing all types of objects - printers, drives, files and programs, with each defined printer or attached drive a separate icon. Users will be able to manipulate files without worrying about file directory hierarchy, and multiple directory trees will be accessible simultaneously. It will need 3Mb to 6Mb of memory, but IBM reckons that Windows 3.1, which will have similar object-oriented features, will also need that amount of memory to run effectively.

"A FEW THOUSAND MORE" TO GO AT IBM

IBM Corp has given Wall Street another nasty jolt, warning that analysts haven't learned their lesson from the first quarter and are still over estimating the outcome for the second. It said that it was increasing the pace of job reductions, and now looked to lose "a few thousand more" people than the 14,000 cut it planned at the start of the year. IBM says that although it expects the second half to be better than the first, it is unlikely to improve sufficiently to prevent a decline in turnover for the year.

GATES ADVISES "STICK TO INTEL"

The day before the MS-DOS 5.0 roll-out, reports Microbytes Daily, Microsoft Corp chairman Bill Gates spoke to the Boston Computer Society, and sounded less than positive over the Advanced Computing Environment initiative that aims to create a new "PC-like" standard for RISC-based systems. "Most applications will still run on Intel chips, and the Intel architecture will continue to get faster without requiring any major changes to software," he was quoted as saying. "We've got our architecture set - 32 bits is enough: we won't need to build new operating systems for 64-bit pointers. At the same time, people want to run our applications on workstation-type machines. Our New Technology - NT- kernel lets us do that. It helps promote competition in the marketplace."

UNIX INTERNATIONAL ASIA-PACIFIC RALLIES MEMBERS TO JAPANESE LANGUAGE SPECIFICATION

by Anita Byrnes

On June 18 Unix International Asia-Pacific announced a draft of a Unix System V Common Japanese Language Environment specification, developed jointly with its members including Fujitsu Ltd, Oki Electric Industry Co, NEC Corp, Nippon Sun Microsystems, Fuji Xerox and others. The problem until now (and it will still exist for some time to come) is that almost every Japanese hardware vendor has developed its own specifications for the Japanese language environment under which applications are developed.

The Unix International effort, which began last June as a Special Interest Group on Japanese localisation issues, under the Internationalisation Work Group tack led the difficult task of setting standards on a variety of issues including the base operating system, windows systems and graphical user interface, always bearing in mind goals such as compatibility, portability, interoperability and scalability of applications developed. The draft document sets three sets of guidelines: Level 1 covers mandatory specifications that should be supported by hardware vendors; Level 2 is specifications that it is desirable are supported by such vendors; and Level 3, covering guidelines for independent software vendors and users. The recommendations on the base system were based on the Multi-level National Language Specification, with a Japanese Locale value. In terms of Japanese character and code sets, the specification supported the latest JIS X0212 extended Kanji encoding in the EUC standard; extensions to the terminfo command to support features such as vertical (top to bottom) display of characters; Japanese Open Look as the graphical user interface; Japanese input systems from X-Windows are already offered by a number of Japanese firms.

Input phonetically

In two areas only, the Unix International members were unable to agree: standardisation of keyboard input methods for Japanese language (Japanese is usually input phonetically from a normal QWERTY keyboard, but interpretation of keystrokes varies somewhat between vendors); and a common specification for bringing together the several different implementations of troff which are the basis for Japanese Documentors Work Bench. The draft specification will be passed over to Unix System Laboratories Pacific for further work. Mr Monden, senior manager of development, integration and technical support at Unix Labs Pacific emphasised that with the appearance of a common and accepted standard, Unix Labs felt obliged to provide products conforming to the standard as soon as possible. Representatives of the vendors were on hand for the announcement to support Unix International Asia-Pacific director Yumio Imamura in his contention that the Common Japanese Language Environment specifications represented a clear statement of direction for software developers and application vendors. Unix International will be supporting software and application conversion activities from next month when it opens its Business Support Centre. Sony Corp was the only Unix International member not adding its full support to implementation of the new draft document. This is because its Sony News workstation currently runs Berkeley Unix only and also has a different Japanese language code set. Commercial realities will force Sony to provide an upgrade path for existing users if or when a switch to System V.4 is made. Unix International recently opened an office in Singapore, in premises shared with Unix Labs. Unix Labs Pacific has revealed that as well as the Singapore office, it is looking toward establishing a base in Australia, although details are not yet clear.

HITACHI HAS MUCH-ENHANCED ES/KERNEL2 EXPERT SYSTEM DEVELOPMENT TOOL

Hitachi Ltd has announced ES/Kernel2, claimed to be a much more efficient version of its ES/Kernel expert system development tool, which also enables horizontally-distributed multi-level inferences through a client-server system - a world first according to Hitachi. The original ES/Kernel expert tool was released in 1985 on the 2050 workstation, and the new ES/Kernel2/W runs on the newly released 3050 model Unix workstation and Hitachi claims that it is 10 times more efficient than previous versions thanks to the addition of a handbook function, development of a knowledge parts function, and the addition of an intelligent compiler to which has been added a translator. The inference speed has been increased fivefold. Because the user interface part of an expert system usually takes a large part of the development time, according to Hitachi, the new ES/Kernel/W provides a whole set of user interface development tools such as an attributes editor. Hypothetical interfaces are also now supported.

Tomen Electronics Co, the Japanese distributor for IXI Ltd of Cambridge, UK, has announced the availability in Japan of the X.deskterm terminal emulator product: Tomen Electronics, a subsidiary of trading company Tomen Ltd, has represented IXI since 1989, and has successfully licensed X-desktop to a number of workstation vendors including NEC Corp and Matsushita Electric Industrial Co; a major feature of X.deskterm is the interface to OSF/Motif.

Huntsville, Alabama-based Intergraph Corp's Intergraph Japan in Tokyo is converting its Japanese language version of MicroStation PC 4.0 computer-aided design software to run on NEC Corp personal computers; the company also announced an agreement with Softbank Co, Japan's largest personal computer software distributor, to market MicroStation PC to Japanese users - both moves are part of a major bid to increase its share of Japan's CAD market.

Omron Corp has released a network system for linking its Luna Unix workstations in a network: the system is called Wink, and enables workstations to exchange data with a view to increasing systems development efficiency: Wink is one of the products developed in-house that Omron hopes will help sell its workstations; in addition it has set up a new Western Area System Support Centre, with a staff of 40 people, to improve support in Western Japan; last fiscal, Omron's workstation sales hit \$60m.

Six months after establishing an office in Moscow, NEC is still without a Soviet partner and is yet to make its first sale. Head of the Moscow office, Harutoshi Sadashigo, says tangible progress is taking longer than Tokyo had predicted. Given the intense competition in both the Soviet computer and consumer electronics markets, NEC is concentrating its efforts on the telecommunications sector. Sadashigo suggests Japanese penetration of Soviet technology markets could significantly improve if there were a thaw in the currently frosty stance the Japanese government is adopting in its relations with Moscow.

THOSE TAKING AN EXCESSIVELY BEARISH VIEW OF THE SOVIET UNION RISK BEING BIG LOSERS

by William Fellows

Travelling by Lada from Moscow to the former Russian capital of Suzdal, some 200 miles east towards Siberia at minus thirty degrees centigrade, on a snow-bound, winter midnight, ranks as one of the most hazardous journeys in the world. Plenty come to grief on that Cresta Run which passes for road. The pilgrimage of Western high-tech firms looking to open up shop in or around the Union of Soviet Socialist Republics is no less fraught with dangers. That same road is already littered with the wrecks of joint-ventures which have rolled off the highway and lie, like so many stricken Ladas, bottom-up. As far as basic road safety goes, there is a highway code of sorts that Western hopefuls could usefully cast a glance at before setting out on such a journey.

First, doing business in the Soviet Union is not like doing business anywhere else in the world. The legal and economic environment is different. Concepts like profit and loss, service and support, contracts and safety clauses remain largely theoretical, and are only beginning to be understood, mainly through experience. Second, no-one is going to get rich quick. Moreover there is no guarantee that even the long-term holds any better prospects for making money. Third, it is a risk, but looking at the potential size, shape and direction of the Soviet economy - albeit unstable at present - it is certainly a risk worthy of serious consideration, especially before everyone else decides to do the same. There are good reasons for getting started in the Soviet marketplace now, rather than later. Fourth, setting up in the Soviet Union in whatever guise, as a joint-venture, partnership or just to find distributors and resellers, will cost money, take time, effort, and require large helpings of patience and flexibility. Fifth, to make it worthwhile, the majority of firms would be wise - unless they are Microsoft or IBM - to offer products in local currency to generate sales. In addition, for most software companies that have been successful, it proved critical for them to produce local language versions of their applications. Sixth, to have a chance of success, products need to be cheap - whether they are sold for Roubles or foreign currency. This is especially true of the government markets where Soviet ministries don't like using pirated software. They'd prefer to pay for them because the main principle of the ministries is to minimize their own risks, so the way to give them a reasonable chance to buy it is to give it to them at a reasonable price. If companies make it this far they are then likely to be sitting on a growing pile of Roubles which can be re-invested, or kept until that day when currency becomes convertible - and the signs are optimistic. Indeed the Soviet Parliament has recently decided that it will allow Soviet citizens to sell Roubles for hard currency from the next year. The so-called internal convertibility will remove one of the principal legal obstacles discouraging foreign investment. Another, preventing foreign companies from owning wholly-owned subsidiaries over there, has also gone. IBM is the first to take advantage, having set up IBM USSR in Moscow last month.

Thirst

Despite the risks, capital has an unquenchable thirst for new markets - and the USSR is definitely a deep river. Some will succeed and some will fail, but even if even if it is years before firms make any money over there - or currency becomes convertible - historical precedence dictates that those who have been there longest are likely to be the ones that succeed.

To buy an 80286 or 80386 personal computer with 40Mb disk in the USSR costs around \$1,600. This is often cheaper than in Western Europe, which US and Japanese manufacturers know is well used to paying a premium for all kinds of consumer, electrical and auto goods - including information technology. If you pay for the same personal computer in Roubles it will cost 35,000 - and the Soviets like to think that one Rouble equals one pound sterling. The problem is compounded by the fact that - at least in the legitimate market - hard currency is in short supply, especially for those organisations and businesses that would be looking to buy the kit, so they still have to pay in Roubles, even though it is vastly more expensive.

In the Soviet world of information technology, the word Microsoft is omnipotent, its applications and operating system software are the most widely-used - and abused - bits and bytes in the USSR. Microsoft is well aware of the situation, which has its pros and cons - a massive user base which isn't matched by a gushing revenue stream - and is looking at various means of getting a handle on the situation.

By far the most popular application over there is Microsoft Word, thought to be used by the majority of programmers and developers in one form or another. As a result, the latest iteration of Word, its documentation and support, is more critical for these users than any other application that has gone East thus far - a fact Microsoft knows well. It only sells Word in hard currency, and because in many cases it is necessary to have the latest version, users are prepared to stump up the ready. However MS-DOS is different, because it is so widely copied, and less mission-critical. Microsoft has produced a Russian version of MS-DOS 4.0 and is currently negotiating with a Soviet personal computer manufacturer to sell the operating system in Roubles, bundled with the Soviet-made boxes. There are several reasons for this strategy. Soviet information technology users are generally used to paying little, if nothing for software that can be copied - although hard currency will be paid, when available, for anything that absolutely can't be had for Roubles. However, hardware, from whatever source, is never cheap in the USSR. So if you sell a cheap (by Western standards) personal computer with bundled software, Soviet customers are apt to think they're getting a great deal on what is perceived to be an expensive computer, with some bits of software thrown in. In fact the Western supplier is getting payment for its software - whether in hard currency or Roubles - and can build up a user base simply by throwing in a personal computer, at US prices, with the software. Nantucket Corp, Los Angeles, California, is a prime exponent of this tactic, and has picked up a user base in excess of 1,000 selling its Clipper, dBase application development environment bundled for 6,000 Roubles. It is using its Rouble revenue stream to build up its Soviet subsidiary, to finance a user group, support services, newsletters and so on.

In the opinion of many already deeply involved, the best way to stop people stealing your software - or any other product - is to be there, in force.

Baiting

Although copying software costs little more than the price of the disks, documentation is a different matter. Most users of copied, or pirated software have no documentation whatsoever but are extremely well-practised in discovering what an application can do by trial and error - taking it to bits and finding out what is going on inside. Some English language documentation is available, but it is mostly copied. There is little Russian language documentation around. What there is tends to be written by software enthusiasts who find out all there is to know about a package by these time-honoured Soviet methods then writing guides and documentation based upon what they have learnt. One of the problems of reproducing both original and "freelance" documentation is that photocopying is expensive, because paper, and toner cartridges especially, are very hard to get hold of. At 20 kopeks a page to copy, Microsoft's 500 page documentation for Word costs around 100 Roubles just to photocopy - OS/2 manuals around 200 Roubles. So if the original documentation is sold inexpensively, then there is no advantage to be gained from ripping-off documentation.

Many Western organisations have reacted gloomily to the deteriorating economic and political climate of the Bear - and in the opinion of Soviet information technology firms and Western outfits already out there, going East indeed takes nerve. However after years of baiting the Bear into opening up its markets, the West's prevailing attitudes towards their current situation is the despair of many Soviet operators. Stepan Pachikov, general director of the successful Moscow software house Paragraph, speaks for many when he challenges Western firms to "put your money where your mouth is!"

AVIATOR 1.5 FOR SUN NETWORKS OPENS GRAPHICS WORKSTATION GAMES MARKET

Games produced, and sold as products, specifically for the Unix workstation market have been few and far between, but now, out of Palo Alto, comes news of Aviator from Artificial Horizons Inc - and it looks as if it could take games to a new level of sophistication. Aviator is a multi-player aircraft flight simulation program designed to work over a network of Sparc workstations with Sun's GX graphics accelerator. It was originally developed as a demonstration for graphics hardware at Sun, but Sun showed no interest in marketing games software, and offered designers Curt Priem and Bruce Factor the chance to further develop and market the software. Aviator 1.5 is the first product quality release of Aviator, which already has around 5,000 users within Sun itself. It allows you to operate a US fighter aircraft (the F/A-18A to be precise), with an out-of-the-cockpit, three-dimensional flight displays, and perspective views outside the aircraft. Using the GX facility allows solid modelled images with surface shading for realistic terrain details. The product also uses Defense Mapping Agency data from the US Geological Survey as the data source for the image generator and satellite data to colour the terrain. Two or more workstation users can engage in dogfights with multicast Ethernet packets passing data between workstations at ten times a second. The product is available on CD-ROM, and a demonstration version is available, though a license is required for a full-featured version.

ESIX CLAIMS A FIRST WITH SHRINK-WRAPPED V.4 RELEASE 0.3

Esix Computer Inc, Santa Ana, California, has released its shrink-wrapped System V Release 4 operating system product for Intel 80386/80486 machines. It claims it is the first company to ship Release 4.0.3, described as "the latest and most stable release," mainly offering bug-fixes and performance enhancements, according to Unix Systems Labs. Esix has been shipping its System V Release 2 product since 1989, and is offering low-cost upgrades to V.4 from that product and from other Unix operating systems.

AUTOGRAPH INTRODUCES HIGH-SPEED COLOUR OUTPUT SOFTWARE

Autograph International, a Danish-based spin-off from graphics specialists Uniras, has come up with an impressive new method for providing high quality graphics output on colour laser printers - at a much faster speed. EasyCopy runs on Unix-based workstations and high-resolution PCs, and is a device and application independent method of producing high quality hardcopy output from the screen. Used in conjunction with CAD, scientific, business and desktop publishing applications, EasyCopy works by grabbing the picture directly from the screen and automatically image processing it for immediate output on the printer. Autograph has worked on an extensive library of device drivers which it includes with the package, and claims new drivers are simple and quick to add. According to Allan Davies, European sales director of Autograph, recent advancements in high resolution graphics machines and affordable colour printers have been hampered by a lack of software to take advantage of it. "Most companies producing graphics on screen face two problems - the choice of printer is determined by the drivers available with the application they are running, and the process of producing a quality hardcopy of a graphics image is painfully slow." Davies claims the process can take anything from thirty minutes to two hours on other systems (including Postscript-based systems), while EasyCopy can produce high-quality images in around ten minutes, using image processing algorithms to boost the speed. Autograph has hopes that the product will be useful in computer-aided-design, visualisation and image processing applications - in desktop publishing, where Postscript is increasingly the de-facto standard, the product could be used to speed up the process of previewing, reserving Postscript output for the final product. Autograph is currently talking to OEMs and system integrators, but the company has marketing channels in the US, Europe and Japan, and in the UK is available through Hawke Systems in Slough on DEC and Sun, and from London-based Random Computing on IBM, HP/Apollo and Silicon Graphics systems. It is priced at £995 for Unix machines and £195 for PCs. Autograph is also working on image compression technology.

NCR LEADS WAY WITH HIGHLY DESIRABLE 3125 NOTEPAD COMPUTER

I wanted to take it away with me. This was my first reaction to trying out NCR Corp's new stylus-driven notepad computer, the 20MHz Intel Corp 80386SL-based 3125. However at £3,200 for OEMs, and without - until the beginning of next year anyway, Microsoft's Pen Windows and GO Corp's PenPoint environments, although they were up and running on demonstration versions - it is unlikely to become the latest necessary accessory for the mobile-phone, notebook computer, message recorder, mini-television, Nintendo Game Boy, personal compact disc player-laden yuppie: yet. It is aimed at mobile workers - salespeople, delivery firms and other data-collection/capture (form filling) dependent professions. NCR reckons there are around three million of these types in the UK, perhaps 20 million worldwide - analysts predict that a total of 912,000 notebook computers will be sold in 1992, compared with some 610,000 this year. Initially the thing comes with NCR's DOS for Pen Computing operating system software and ships from October in the UK. However when the full environment is available early next year, when OEM firms ramp up their campaigns and, in the future, when price and size both start to fall, as was indicted by officials, the concept - if not this particular machine - will win its place amongst, if not replace entirely, other traditional notepad and keyboard-dependent portable computer technologies. Many people have been waiting for this portable, handwriting-based technology, for many years. The 3125 is roughly equivalent to European A4 size paper, is 1.2" thick and weighs 3lbs 14oz. The nickel cadmium battery five-pack, which provides four hours of continuous use, is housed in a handy cylindrical grip running up the length of one side. Think of a ring-bind folder without the outer cover, filled with a ream of paper and the ring-binders extended the full length of the paper - all as a solid structure - and there you have it.

Digitising pen

It uses what at first glance and touch seems like a standard ball-point pen, unattached to the pad itself because NCR says customers asked for it this way. The pen is in fact a digitising, inductive loop device with a coil and spring mechanism inside - no batteries - which reacts to a magnetic field across the 9.8", 680 x 480 VGA, monochrome LCD screen. Although pens have a tendency to disappear into that great ball-point park in the sky with alarming regularity and in vast quantities, the firm expects hardware vendors to be able to crank them out fairly cheaply once the technology becomes more established. The 3125 connects to personal computers and Apple Macintoshes over local area networks - or can alight on NCR's personal computer-based Docking Station, designed to take the notepad. NCR DOS for Pen Computing, Microsoft Pen Windows and PenPoint come with interchangeable handwriting recognition engines. With memory options going from 2MB to 4Mb RAM, 16Kb cache, 2Mb to 8Mb flash memory - a 20Mb hard disk will be available in future, or to developers now - it is possible to run all three, complimentary environments at the same time on the 3125. NCR is also offering Pen-DOS from Communications Intelligence Corp, Menlo Park, California - enabling the pen to be used as a mouse - Motorola Inc's built-in radio data modem for wireless networking and Scottsdale, Arizona-based Slate Corp's PenApps software development environment. GO Corp has a range of application modules up its sleeve for PenPoint, including a free-form, note-taking add-on. The object-orientated PenPoint has no start-up procedures, and does not replace a sequence of events, it just runs. "It is for people who don't want to learn the desktop religion," says GO Corp's manager of developer relations, Arjen Maarleveld. It connects and disconnects from a network when the user plugs and unplugs the cable, configuring itself automatically. You can train the 3125 to become attuned to your own handwriting peculiarities, it recognises upper and lower case letters, a range of gestures and annotations and can be configured for the sinistral among us. It has a 70,000 word dictionary with which it will try to make sense of the illegible nonsense you write: a simple signature will get you in. - William Fellows

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Motorola Inc is being seen as a winner if the IBM Corp-Apple Computer Inc talks over the Rios RISC chip in the RS/6000 come to a successful conclusion, even if it does mean that there is no really large company committed to Motorola's own 88000 RISC - under the agreement being discussed, Motorola would meet 100% of Apple's requirement for Rios chips and would also become the second source to IBM's own foundry for part of IBM's needs; this is being seen in some quarters as the death knell for Motorola's own RISC in the CPU market, but there is a strong case for believing that the 88000 microcontroller agreement with Ford Motor Co is sufficiently big to underwrite continued development of the 88000 as a CPU, especially as Motorola's own computer business is a major user.

Meantime Computer Systems News suggests that Sony Corp may have a junior role to play in the IBM Corp-Apple Computer Inc axis, as a supplier of multimedia software and optical disk technology for the forthcoming Apple RISC workstation.

What would be the financial impact on IBM Corp of making an agreed bid for Apple Computer Inc? Any such move would likely be seen as positive for the IBM share price, and the deal is eminently do-able - in its bombed-out state, the IBM share price means that the company is currently capitalised at about \$60,000m, and Apple should be winnable at not much more than annual sales - say a take-out price of \$6,000m to \$6,500m; and IBM, which has a very strong balance sheet and superb credit ratings, would likely offer a cash element, limiting any dilution - which given the current dismal profit outlook would not be very substantial anyway; is it going to happen? The odds are still against, but they are a whole lot shorter now than they were when the possibility was first canvassed here at the beginning of the year.

One of the biggest negatives thrown up against any IBM Corp-Apple Computer Inc marriage is the uproar it would cause among Apple employees whose whole corporate culture has been to deride everything that IBM stands for: the point is valid in principle, but John Sculley is quoted in *Business Week* as saying "There are no sacred cows" and Apple is an enormous employer in Silicon Valley - in the present dismal climate for the industry, if those disaffected leave Apple, where else is there for them to go?

Walter De Backer, in spite of his strenuous denials when we first covered the story back in January, (UX No 318), is waiting to be re-assigned after being shifted aside by Ubaldo Zito as director of the European Commission's central computer services - some 150 jobs may be lost at the Commission as buying decisions on computing are decentralised.

And the European Commission is to investigate ICL Plc's proposed acquisition of Nokia Data Systems from Nokia Oy: it says it wants to examine the effect of the takeover on the European computer industry.

Not Unix, but yet another relationship which could prove key in future months: IBM has agreed with Lotus that both companies will sell and support the Lotus Notes and cc:Mail products, with IBM initially concentrating on the US: IBM and Lotus will also integrate Notes and related messaging technology into future versions of OS/2.

Comdex Fall in Las Vegas could see the first public demonstrations of Unix and NT running on top of the ACE Consortium's HAL Hardware Abstraction Layer, which MIPS and Microsoft Corp apparently set the foundations for over two years ago.

The European Unix User Show, despite being a disappointment in terms of the number of companies exhibiting, attracted around 6,000 good quality attendees: the sales-driven series of seminars held by most of the majors as a substitute for exhibiting were also well attended.

While IBM and DEC linger in the revenue doldrums thanks to their reliance on proprietary operating systems Salomon analyst Milunovich reckons that Hewlett-Packard alone among the big market computer stocks "has a cost structure attuned to the new technologies".

From August 1, Top-Log Ltd, Loudwater, Buckinghamshire, becomes the sole UK distributor for Frame Technology's Framemaker desktop publishing package on Unix platforms - Apple's A/UX and the NeXT platform excepted. Frontline Distribution, Basingstoke, Hants, also sells the software on Unix at present, but Frame insisted that its distributors sell to end-users direct: Frontline only deals with resellers, VARs and other distributors.

IBM Corp confirms informally that CICS for the RS/6000 is "not far away": also progressing is IBM's own database for the Unix machine, which is a separate development, although the two groups "are talking a lot".

Indicating it's still in the systems business, MIPS has apparently poached Tom Furlong from its ACE partner DEC and moved him in as senior VP of engineering. Furlong, a co-founder of DEC's Palo Alto, California design site and most recently its director of RISC workstations responsible for DEC's MIPS boxes among other key projects, will now manage MIPS' R&D organisation. He'll focus on new product development and integrating MIPS' current products with ACE Initiative standards.

Novell is putting together OURS, the Open User Recommended Systems group, a worldwide multivendor users group for corporate network users to communicate their needs to vendors regarding product development and integration systems design, training and support: Chase Manhattan Bank, Lockheed, Shell International, Texaco Chemical and Telecom Australia are on the OURS steering committee.

Silicon Graphics Inc could be getting a slap on the wrist from IBM for teaming up with Compaq Computer in the ACE consortium: we hear that in 60 days, IBM will announce that it will be dropping the company's graphics libraries and switching to the extensions that have been made to the libraries by Evans & Sutherland Computer.

And Silicon Graphics Inc is reportedly almost ready with a multimedia workstation code-named Hollywood.

Intergraph Corp is said to be preparing superscalar workstations based upon its 50MHz version of the Clipper C400 RISC processor: an 80 SPECmarks plus server for around \$80,000, and low-end 25 SPECmarks workstation at \$15,000 are being touted.

Steve Jobs' NeXT Inc says that with sales of its second generation machines set to come out at \$45m to \$50m for the quarter just ending, it is on target for sales of \$200m for the year, despite the disappointment that IBM Corp has not moved since it paid some \$10m for a licence to the first version of the NeXTStep graphical front-end software - and has not even licensed the new version of the software; according to the *Wall Street Journal*, NeXT is designing future boxes around the Motorola Inc 88000 RISC, which may or may not figure in Apple Computer Inc's future plans.

Mentor Graphics Corp, Wilsonville, Oregon, and Frame Technology Corp, San Jose, California, joined forces last week at the Design Automation Conference in San Francisco: Mentor Graphics will sell and support Frame's publishing software worldwide.

London-based Personal Workstations is now distributing XVT Software Inc's Extensible Virtual Toolkit programming interface which supports OSF/Motif, Open Look, Microsoft Windows, Macintosh, Presentation Manager and character displays - Personal Workstations says it is investigating the possibility of developing a tree-based database for XVT: Unisys already markets XVT on its own Unix boxes and a large financial firm in the City is now reported to be working with the software to develop its in-house systems.

Hewlett-Packard Co is to implement all its mechanical computer-aided design software to Sun Microsystems Inc Sparcstations, starting with HP ME10 two-dimensional design and drafting software, IGES translator and HP Data Management System. Up to now, they have only been up on Hewlett's own kit and under MS-DOS.

Correction: the bundled-in database for SCO's Open Desktop is of course Ingres, not Informix as we incorrectly stated in UX No 335. Apologies to all concerned.

Last week an exhibition opened at the Science Museum, Kensington, London, celebrating the bicentenary of the birth of Charles Babbage, which intends to prove that Babbage's attempts to build Difference Engine No 2 failed because of political, social and financial factors - not because Victorian technology was not advanced enough. The Museum claims the proof lies in the centrepiece of the exhibition - the three tonne construction of the Difference Engine built following Babbage's design using materials available last century, but modern machine techniques. The project took five years and cost £750,000, two-thirds of the funding came from sponsoring computer vendors ICL Plc, Hewlett-Packard Co, Rank Xerox Ltd, Siemens Nixdorf Informationssysteme AG and Unisys Corp. Further sponsorship is required to build the accompanying printer.

Whilst Wimbledon and the Windies Test Match series have been hit by the opening of the heavens in the UK over the last couple of weeks, Sun Microsystems Inc's co-founder and former president, Vinod Khosla has, according to a US press report, been branded the biggest water waster in Silicon Valley's drought-stricken Palo Alto town: Khosla's home - a 13,000 square foot mansion - used over four million gallons of water in the last 12 months - enough to give every Californian, New Yorker and Texan a glass of water.

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, July 8-12 1991

Number 341

BORN ON THE THIRD OF JULY -

APPLE AND IBM SPAWN THE NEW MICROSOFT?

Despite some last-minute tremblings - attributed to Apple Computer Inc's uncertainty about IBM Corp's real intentions - the two companies have finally announced the outline of a long-suspected plan to collaborate on a range of hardware and software technologies, (UX Nos 315, 340). The ambitious strategy once again throws the fragile system of cooperative industry arrangements into jeopardy, marks - finally - the acceptance of the importance of object-orientated technology in the future of information technology, is at the very least a shot across the bows of the ACE Consortium Initiative, and also perhaps the parting wave by IBM to its historic partnership with Microsoft Corp. First-off, the alliance heralds the formation by IBM and Apple of a new, jointly-owned and independently-managed software company. It will develop object-orientated "open system" operating system software, incorporating an application programming interface, for IBM RS/6000, Apple and other hardware environments - from laptops through to servers - including as well Intel Corp iAPX-86 and Motorola Inc 680X0-based platforms. The two say that existing applications written for AIX, OS/2 and the Macintosh will run in these new environments. The firm, touted by some quarters as marking the birth of a new microsoft, will likely combine Apple's Pink operating system development with the work, in some form, being done at IBM's Patriot Partners Inc joint venture with Metaphor Computer Systems Inc, (UX No 340). The technology is thought to be two-to-three years out, and is initially dubbed the Object Base System: it's reckoned that it will be more powerful and more embracing than Microsoft's NT. Other work will include the further development of client/server functionality for the Macintosh with new networking and communications software. However the first project will be to bring the Apple Macintosh front-end graphical interface on to IBM's AIX Unixalike - a "Maced" AIX - in much the same way that Apple has implemented it on its A/UX Unix flavour. IBM is careful to say that the Open Software Foundation's Motif interface, which it currently offers, will continue to be supported, although its long-term future on IBM platforms must now be in some doubt.

...SINGLE-CHIP "POWER PC" RIOS IMPLEMENTATION BRINGS MOTOROLA INTO THE FRAME - 88000 "IN DOUBT"

The agreement also calls for the development of a single-chip implementation of the seven custom VLSI chips which are currently spread over multiple boards in IBM's RS/6000 Rios RISC system, an idea that did the rounds back in February, (UX No 322). Dubbed the Power PC microprocessor, IBM and Apple say they will use it in future workstations and servers, though Apple admits only to an "intent" to use the part in future Macintosh platforms. Motorola will collaborate on the design of the Power PC, and will be a second source for the part, which it will also market to third parties. This part of the agreement - thought to be the area which stalled the talks last week, (UX No 340) - throws Motorola's RISC plans into uncertainty. Whilst Apple's Christopher Isher said that the firm had never committed to going with Motorola's 88000 RISC chip, he says it will continue to support the 680X0 CISC line. Although Motorola has only a couple of major-league system-builders backing its RISC part, the next version of the processor, the 80-bit 88110, which includes enhanced graphics functionality, appears to have been engineered almost exclusively for use by Apple, and it may well be that Apple will still go ahead with a Macintosh system built around it. The 88110 is scheduled to sample by the end of the summer, with volumes expected by late this year or early 1992. Motorola is understood to have been in on the IBM-Apple discussions from the beginning, and whilst it says it is still "committed to the 88000," that the Power PC will be "an additional product" which will not conflict with its existing processor line, 88open, the group of companies supporting the 88000 said it was "disappointed" by the announcement. It certainly throws the future of the 88000 as a CPU, used by the likes of Data General Corp and Unisys, into jeopardy.

SEQUENT ENDS OEM SALES, WILL CUT SOME 140 JOBS

The growing view that recession in the US economy is over must ring hollow in the ears of companies like Sequent Computer Systems Inc, leaving them to cling to the hope that the old adage that it's always darkest just before the dawn still has some truth in it. Last week, the Beaverton, Oregon company announced that it was getting out of the OEM business - Unisys Corp had been its biggest customer, and Siemens Data Systems built the machines under licence - laying off between 7% and 9% of its 1,700-strong workforce, and that the loss for the second quarter, including one-time charges, would be significantly worse than the \$7m that it lost in the first. It blames declining OEM orders and the recession as the causes of its woes, and says sales for the quarter, while ahead of the \$47.9m reported in the first quarter, will be down on the \$58.2m reported this time a year ago, on which it made a \$5.7m profit. Sequent does not see its position improving any time soon, and will severely restrict capital expenditure, cut travel costs and set a salary freeze. The company looks for continued growth in direct sales to fill the hole left by OEM business. Sequent UK's boss, John McAdam, said that the firm had wanted OEM sales to fill between 20-30% of its overall business, but admitted that it had slipped to less than 10%. There will be no lay-offs in the UK, he added. Siemens had been considering taking Sequent's latest Intel Corp 80486-based Symmetry 2000 machines to replace the National Semiconductor NS32000-based Balance CPU boards in its MX 500 range, which Sequent also supplied (UX No 305); however no agreement had been inked, and the Siemens contract is now said to be up for grabs.

MAJOR LOW-END RETHINK TO FOLLOW IPX, SLC LAUNCH?

Sun Microsystems Inc's new 33MHz, 22 MIPS, graphical go-faster version of the IPC workstation, due on the 22nd of this month (UX No 340), is expected to come in at around the £8,500 mark, just above the £8,000 tag that the first IPC boxes shipped at (UX No 293). It's dubbed the IPX - known internally as the Node Warrior 4/25 - and its arrival means that the existing 25MHz IPC will likely be phased out soon. Indeed in the UK, Sun is believed to have been bucketing IPCs out over the last couple of months in anticipation, and ahead of both the IPX announcement and the end of its financial year, which closed on June 30. Sun is also giving the diskless version of the Sparcstation 1 - the 20MHz SLC box launched last May (UX No 283) - a faster CPU in the hope of bringing in new business - apparently the thing hasn't been selling too well. On the horizon, Sun's low-end strategy is said to be undergoing a serious review. Competition from the likes of Hewlett-Packard at the top-end of the workstation market with the Snake series, and others, means that Sun is now being forced to look further down the field for revenue, where the grass is thinner on the ground. Indeed, after a 16" colour monitor - around £800 - system memory and disk are bought in, there is little more that can be chipped away to lower the end-user price of low-end machines whilst maintaining margins. Add to this the fact that Sun has been firmly opposed to the concept of network computing based around X-terminal solutions, and has, as a result, completely missed the boat on some significant orders - such as the Barclays Bank, and Bristol Polytechnic contracts in the UK, plus several announced and unannounced others in the US - and the time seems ripe for some kind of repositioning. One level of informed thinking has Sun phasing out the SLC altogether in favour of some kind of X-terminal strategy that may even embrace the Open Software Foundation's Motif graphical user interface - the use of which Sun has always, despite market indications (UX No 340), vehemently opposed in preference for its Open Look offering. This would enable the firm to be able to bid on a number of large X-terminal contracts that are thought to be waiting in the wings. Meanwhile, signs that Sun's multi-processing effort is still on track despite recent problems (UX No 340), come with news that sales of the 4/470 and 4/490 Sparc servers are in some cases now being accompanied by a guarantee of a multi-processing upgrade, indeed dealers are said to be already hawking around versions of the Mbus boards that will feature in the "Galaxy" multi-processors.

INTEL IS PLANNING TO SAMPLE 100MHz 80486 EARLY NEXT YEAR

Intel Corp says it will start sampling a 100MHz version of the 80486 microprocessor early next year, and expects to see systems containing the chip by mid-1992. The company is also promising another 80486 derivative next year that will offer high performance at a lower price. The company also said that while outsiders are calling its next generation chip the 80586, Intel has not yet decided on a name for it and is at present sticking to the P5 code name. Intel says that the 3m transistor P5 will add mainframe features such as data integrity and support for fault-tolerant computing, and will use a superscalar RISC technology to achieve performance of over 100 MIPS. It will nevertheless be fully compatible with 80386 and 80486 software and is due to sample around mid-1992 so that the first systems can appear by the year-end.

UNIX EXPO HOPES TO BUCK THE TREND WITH BIGGER SHOW - INAUGURATES END-USER OPEN SYSTEMS AWARD

Don Berey, group show director of the Unix Expo trade show and conference, which takes place in New York between October 30 and November 1 at the usual venue - the Jacob K Javits Convention Center - says that bookings are going well despite the sluggish economy, with 165 exhibitors already signed up, compared to 143 on the same date last year. The exhibition has increased its floor space by moving to the larger upper level of the Center, mainly, it says, because companies such as DEC, Fujitsu, Ingres, NCR, Sequent, Unify and WordPerfect are all demanding larger stands. Berey hopes to attract 225 exhibitors this year, 30 or so up on last year, and expects some 23,000 visitors. Unix Expo International is also asking for nominations for its "International Award for Excellence in Open Systems", which will be presented to an end-user organisation "that best exemplifies, illustrates or advances the cause of open systems" - call award selection committee chairman Gary Donnelly in Reston, Virginia on 703 758 1018, or fax 703 391 6881 for more details and nomination forms. Anyone (including vendors) can put forward nominations.

TENON'S MACH FOR THE MAC PRODUCT NOW SHIPPING

Late last month, Tenon Intersystems started delivering the first copies of MachTen, its novel approach to making the simple Mac a cheap workstation. MachTen puts the Mach operating system on the Mac, anything from a Classic upwards, allowing it to continue running off-the-shelf Apple applications while simultaneously running Unix programs and bringing Unix multitasking, internet communications and an NFS-based distributed file system to the MacOS. Files are stored in Mac-form so the Unix and Mac programs can share data. The product was originally expected in the first quarter (UX No 311), but Tenon decided to polish the apple and add a few more features such as a full Mac Finder interface and the ability to click on Unix before bringing it to market. MachTen is actually Berkeley 4.3 BSD on a Carnegie-Mellon Mach 2.5 foundation, in the process of going Mach 3. Installing it, there is no need to partition the disk, add new device drivers or disturb any existing Mac operations. It is a development as well as an applications environment. The start-up that built it is currently selling direct and talking to possible distributors. Prime sites are those with both Unix workstations and Macs in place. Expectations are that sales will number 100-200 units a month in the Autumn, 300 a month by year's end. Cost is \$595 for a workstation licence with unlimited terminals but no upgrade provisions one from the other. Planned enhancements include server and client X-window support in the fourth quarter, and Mac System 7.0 compatibility in the first quarter of 1992.

FIVE LEVELS OF ACE SUPPORT, SAYS GARTNER

Despite all the talk about ACE taking the world by storm, commitment to the Initiative - real hard product style commitment, especially to the operating system Santa Cruz is fabricating for ACE - is wishy-washy. So much so that even MIPS, ACE's organiser and principal beneficiary, isn't committed to using SCO's Open Desktop as its operating system. Paul McGuckin, program director for the Gartner Group, did some spade work recently among the 12 mid-range Unix vendors aligned with the Initiative, and isolated five distinct levels of commitment. Only DEC, he found, is 100% committed to implementing SCO on the ARC specification. Bull and Olivetti, he figures, are the next strongest soldiers - but only to the ARC hardware. Olivetti, at least, like others interviewed by McGuckin, was previously identified as a member of the Apache splinter group (UX No 328), and wants to put SVR4 on the MIPS chip. However, Olivetti is also the leader of the ACE team putting a multiprocessor specification together (UX No 340). But McGuckin says the Italian company isn't committed to the notion of ever producing one running Open Desktop. McGuckin also reckons that Bull will go with OSF/1 and Olivetti with Unix SVR4 on ARC. Their customers may choose to license and install SCO on their own. But even if they decide to distribute SCO, he says, their support for it won't be as comprehensive as that which they give to their primary Unix offerings. Companies like MIPS, CDC and Silicon Graphics inhabit McGuckin's third level of commitment, prepared to provide only binary compatibility with SCO applications. MIPS, he says, plans to evolve its existing SVR3-based operating system by the first half of 1993 to run "shrink-wrapped" SCO applications, thereby protecting the investment it has in enhancements, particularly for symmetric multi-processing. Customers, of course, risk the effects of subtle incompatibilities in the SCO binary interface. McGuckin says NEC, Prime and Tandem are only in ACE for the desktop, hence only for Microsoft's NT. Pyramid on the other hand is firmly committed to the MIPS processor, but has no plans to build ARC computers, use SCO Unix or provide SCO-compatibility on its platforms. McGuckin concludes that it's up to DEC and Compaq to see that the promised cornucopia of shrink-wrapped applications materialises, or else the other vendors won't join the party. At the same time, SCO ISVs will have to decide whether the ability to run on the few MIPS/SCO platforms out there is worth the effort of recompiling their applications.

TIS STRUGGLES FOR PROFITS IN BUYERS MARKET

Long term UK Unix supplier TIS has reorganised its operations in response to increased competition and eroding margins. Bourne End, Buckinghamshire-based TIS, now a part of the Misys Group, has rationalised its operations by combining its VAR and direct sales operations into one. The move resulted in four redundancies, including Roger Dadd, head of the VAR group. According to Richard Fisher, TIS managing director, the move will allow TIS to work more closely with TIS in providing systems for large corporates, who demand higher levels of service and support than many small VARs are able to provide. TIS will concentrate on specialised product areas, such as printing/publishing and health, and is setting up vertical industry business units and business partners. TIS currently has between 75 and 80 VARs. "In the last 12-18 months we've seen a maturing of the marketplace, with all the major manufacturers now offering Unix", said Fisher. "This has led to an erosion of price for machines that are twice as powerful". According to Fisher, TIS has suffered a 40% drop in profits despite shifting 50% more units. TIS sells Intel Corp machines built to its own specification at the bottom end, and MIPS-based hardware at the high-end. It also has a deal with Tandem for fault-tolerant systems, business described as "very slow" by Fisher. "We do have a number of pilot sites", he said. One problem is that customers are holding back on decisions due to the economic situation, and waiting for the next round of faster and cheaper boxes from the manufacturers. "It's a buyers market", said Fisher, and the sales gestation period is getting ever longer. Last year we had 182 prospects from VARs - after 9 months 82 had come to fruition, 10 were lost and 90 decisions had been deferred". The solution, said Fisher, is to add value in carefully targeted areas of expertise. "The next twelve months will be even harder - in this business you either get a niche, get volume or get out", he said.

AT&T MIDDLE MANAGERS MAY LOSE OUT TO NCR

AT&T and NCR have been dividing up their large accounts, apparently putting the most logical choice in charge so that NCR is responsible for JC Penny's, the big retailer, while AT&T drew American Airlines. Meanwhile, we can't swear to it, but we are getting strong indications that very few of AT&T's middle and upper managers will be making the transition to NCR: the way they're playing, however, it'll be the end of the summer before we know for sure. AT&T Computer Systems president Rich McGinn is skeptical of our hunch, but admits in the same breath that he doesn't know for sure how it will all shake out. He does, however, say that AT&T sales are ahead of last year, and head of this year's projections.

BSD 4.4 NETWORKING RELEASE SET FOR EARLY 1992

The next release of the Berkeley System Distribution, the BSD flavour of Unix, is now due early next year, according to a spokesman from the University of Berkeley's BSD research and development team in California. Originally promised for the beginning of 1990, (UX No 231), BSD 4.4 has been held up by problems integrating the various contributed modules. BSD 4.4 is a networking release; it includes the seven layers of the de jure Open Systems Interconnection protocol stack, though the industry standard TCP/IP networking topology is included too. The BSD Unix variant has always been at the forefront of operating system-level networking developments in Unix. What is different is that in the past, developers and commercial suppliers have had to implement the whole of BSD to take advantage of its networking functionality. This time around the release will allow them to run only those networking modules they require. Following the commercial interest and impetus that this, and previous releases of the software have attracted - most recently the Open Software Foundation's work on implementing BSD in its OSF/1 operating system - the Berkeley development team, which now comprises just four staff, hopes to return to the academic fold. "We're going back to being a research unit," the spokesman said, "we'll be doing industry-relevant things and we want companies to pick up on them, but we're not a support group for Sun, the Open Software Foundation, or anyone else." There are already a handful of companies thought to be readying commercial implementations of BSD 4.4, expected soon after the official release of the software. However, reports that California company, Berkeley Software Design Inc, already has an implementation of BSD 4.4 which it is readying for release in September, are thought to be premature. The BSD spokesman said that no-one has got a copy of the operating system software yet, as it isn't finished.

INTERACTIVE SEES DMAC II ACTION

Interactive is getting a piece of that heavily protested \$400, US Treasury Department contract, DMAC II, now that the powers-that-be have finally decided to award it, originally the prize of Sears, to Sysorex Information Systems. Interactive reckons it will sell about 9,200 units or \$5m to \$8m worth of Unix System V Architech series to the G-men over the next five years. It also says the International Revenue Service might buy off the contract: the IRS wants to buy 15,000 laptops for its field workers and has specified that 5,000 of them will run Unix. According to the company's Federal Systems director Christopher Brown, that represents something like 105,000 units of Interactive's version of Unix 3.2 over the next five years. He says the company has delivered between 5% and 8% so far.

DIXONS SPENDS £10M ON DISTRIBUTED UNIX PC SYSTEM FROM SIEMENS NIXDORF

Dixons Stores Group is to implement what it claims is the UK's largest distributed Unix network, involving up to 850 of Siemens Nixdorf's 486-based PCD personal computers running SCO Unix. The deal, worth £10m, involves the installation of the PCs in Currys and Dixons stores throughout the country, connected to the company's central IBM 3090 in Stevenage via X.25 and TCP/IP wide area network. The eventual aim is to provide in-store terminals for staff, providing product, stock and service information, and sending back sales data to the branch computer, and then by batch delivery to the mainframe. In the meantime, Siemens Nixdorf will integrate the existing 8812 point of sale terminals in use at both Currys and Dixons stores. Dixons chose the Ingres database and forms-based 4GL. Pilot systems have been running since last November, and the first systems are going into limited stores now.

SUN SUBSIDIARIES GO LIVE

Sun's new subsidiaries officially came on-line last week. The company now apparently is divided into three operating units: Sun Microsystems Computer Co, abbreviated SMCC, handling the hardware; Sunsoft Inc, fielding the software; and SunTech Enterprises Inc handling value-added products. Expected since last February, neither SunSoft nor SunTech are saying much of a substantive nature about their charters. It's still like pulling teeth trying even to get their structures. SunSoft's masters include Sun Microsystems' former vice president of marketing Ed Zander as expected, along with Bill Larson, the former director of Sun's Catalyst program as vice president of sales and marketing and Bill Coleman, Sun's former systems software vice president, in a similar slot with the new venture and Bill Keating, Sun's corporate technical marketing director. They'll start leaking their strategy in August and expect to start rolling out product at an ISV conference in California, September 4-6. The product is, of course, this comprehensive software environment they've been so mysterious about, (UX No 338), expected to include SunOS, ONC, X.11 News, OpenWindows and Open Look. They'll be doing some heavy recruiting for the event, reportedly starting with a 150,000-piece mailing. In the meantime, SunSoft's apparently toying with the notion of getting a third party to port SunOS to the Intel chip. Unfortunately, SunTech proved completely elusive by press time last week, called by insiders less organised than its sister unit. SunSoft may not have anything real to say for itself yet but it wants people to know what its attitude will be: Last week it sent out baseballs to touch base and let us know they're "ready to play hardball".

OBJECT GROUP ADDS 17

The Object Management Group must be playing a catchy tune these days considering the number of people that suddenly want to dance with her. Last week, OMG announced 17 new members, bringing the figure of its membership rolls to a total of 146, quadruple the figure of a year ago. Admitted were Alcatel Network Systems Corp, Authorware, Canadian Imperial Bank of Commerce, Dansk Data Electronics, Fujitsu America, Kendall Square Research, McDonnell Douglas, Micro Focus, Objective Computer Systems Ltd, Rogalandsforskning, Southwestern Bell Technology Resources, and Unix International (UX No 331).

IBM'S CICS FOR AIX MAY STILL BE TWO YEARS AWAY

IBM's idea of "soon" and ours appear to be two different things. Last issue (UX No 340), IBM informally confirmed its CICS transaction processing software for the RS/6000 is "not far away". Other sources translate that to be as far away as 1992-3. The software will be a full member of IBM's CICS family, and will be written on top of Transarc Corp's TP toolkit, which includes technology from the Open Software Foundation's Distributed Computing Environment. It will support LU 6.2 APPC for cooperating programming and transparent function shipping for distributed processing. It will allow the RS/6000 to hook into a mainframe or OS/2 CICS environment transparently. Unlike its bretheren, the new software will support both COBOL and C programming, and handle both IBM's own databases as well as others that run native on the RS/6000, specifically Informix, Oracle, Sybase and Ingres - it will also run on other hardware platforms. Its developers also want it to conform to X/Open's budding XA OLTP interface standard, just as Tuxedo and Top End do.

MARKET ROUNDUP

As promised (UX No 336), **Du Pont Pixel** has introduced a new visual processing board using Intel's new i860XP processor: the PX200 increases the graphics performance of the company's PX100 board by up to 200%.

ParcPlace Systems' Objectworks/Smalltalk and **Versant Object Technology's** object-orientated database are to become available on **Sequent Computer Systems'** Symmetry 2000 systems following an agreement between the three.

Uniplex now has a strategic marketing alliance with **Sequent** which it values at around \$5m over three years: Sequent, which has adopted Uniplex internally, will market the stuff as its preferred office automation solution on its mid-range and high-end Symmetry 2000s.

Network Computing Devices was previewing font-server software at Xhibition a few weeks back, which should become a standard part of the next implementation of X-Windows - Version 11 Release 5, (UX No 336). It will allow X displays to request font information in a standard form, and includes scalable font technology donated to the X Consortium by Bitstream Inc. A beta version should be available this month to X Consortium members.

Electronic Data Processing plc, Milton Keynes, Buckinghamshire, has introduced **Mentor M/ix** release 2.0, a concurrent implementation of the Pick and Unix operating systems which run on the Mentor 7000 and 8000 systems: the Pick portion of M/ix is ADDS Mentor version 2.6, the Unix component is NCR's Unix V.3 implementation.

In the UK, **Specialist Computer Systems and Software**, Stoke-on-Trent, has won a £1.8m order from the Royal Institute of Chartered Surveyors for an office automation system and database based upon nine Unisys U6000 Unix systems.

Specialix International plc, Byfleet, Surrey, is investing a further £3.5m in its South East Asia operations and has opened a new factory in Singapore, which now does all of Specialix's production.

Siemens Nixdorf Informationssysteme AG has a back-up system for the Targon/35 M70 Unix machine that stores 2.2Gb on standard 8mm video tape: no prices were given for it.

RasterOps Corp, Santa Clara, California, has announced a colour calibration system for use on the **Apple Computer Inc Macintosh**, **IBM Micro Channel** and **Sun Sparcstation** workstations. The **CorrectColor Calibrator** measures both the screen display and hard copy media - either transparencies, print or photographs. It consists of an optical sensor head, a colour integration processor and attachments for measuring the colour content of the monitor, printed material and transparent surfaces. It works with all standard colour management systems and costs \$3,000. And Sun Sparcstation users can now generate 24-bit true-colour graphics presentations and output them to videotape using **RasterOps'** Sparc Card TC/S adaptor and **Video Expander**. They cost \$1,500 and \$900 respectively.

XTree Co has a tool for graphically representing Unix file structures set for July: **xtree** for SCO Unix V/386 3.2, **Xenix 386 2.3.2** and higher, and **Interactive Unix V/386 3.2** allows users to move, manage, graft and prune files - it will be priced at \$300.

FourGen has expanded its international network to Asia and the PacRim by signing **Ascii**, **Comat Services**, **Jardine Information Systems** and **Wachters Softgen** to localised **FourGen Accounting** and distributing it in twelve countries including Australia, Hong Kong, Indonesia, Japan, Macau, Malaysia, New Zealand, Papua New Guinea, the Philippines, Singapore, Thailand and the Solomon Islands.

Tools USA 91, which despite its name is the international symposium on object-oriented languages and systems, will meet at the University of California, Santa Barbara July 29-August 1.

Unisys Ltd has won a £4m contract with the UK Royal Navy to build an integrated communications management network linking 48 Royal naval supply establishments throughout the UK: the project is called **REDACS** - REgenerated DATA CommunicationS - and is being developed by **Unisys Complex Systems Organisation**; the system is designed to use Unisys and Hewlett-Packard Unix systems, **Spider Systems** routers, bridges and terminal servers, and **BICC** cable management products.

The world may have thought that **Oracle** employees had things oriental and financial on their minds of late but in the UK the mysterious case of the vanishing milk has been vexing Oracle minds: it seems that some 9 to 5ish person decided to cut back the milk delivery to Chertsey, Surrey calculated on the number of pints necessary for the number of employees to put in their tea and coffee; but something about the calculation stank - milk was running out mid-afternoon and the source of the problem was found to be the developers; you see this breed of person often gets into the laboratory at the crack of dawn, cornflake box tucked under the arm; well, should Oracle foot the techies milk cereal bill? The matter is being pursued at board level.

IBM Japan Ltd has launched **Stratus Computer Inc's** Intel i860 RISC-based fault-tolerant computer as a model in the System 88 line and says it will begin selling it this autumn, aiming at financial institutions: it says that **IBM Corp** will be launching it in the US this Autumn.

NCR has announced an entry-level micro-channel architecture-based workstation in its System 3000 series. It use a 20MHz Intel 80486SX processor - upgradable to 25MHz or 33MHz parts - comes with from 4Mb to 64Mb RAM, runs Unix, MS-DOS and OS/2, has serial, parallel and SCSI interfaces and ships from the third quarter, in the UK.

This object-oriented stuff must be a real pet of **Phillipe Kahn**. That 21-minute video **Borland** had filmed on object-orientated programming (UX No 338), reportedly cost him \$200,000.

Prime Computer's Computervision arm has ported its **Medusa** computer-aided design and manufacturing software on to **DEC's** Ultrix Unix implementation: **Medusa** also runs on **DEC's** VAX systems, **Sun Microsystems'** Sparcstations and **Prime 50** series machines.

BIM Information Technology NV, Everberg, Belgium, has released version 3.0 of its **Prolog** development system for **Sun Microsystems Inc** machines: it includes **Carmen**, a facility designed to generate **SunView** or **X11.4** user interface code.

NCR has been knocked out of its **Monk Construction Ltd** account: the firm has ordered £750,000 worth of **Hewlett-Packard Series 800** Unix minicomputers running **Mentor Systems'** **MAX** accounting package to replace its existing **NCR** hardware.

Optical systems house **Fibernet Ltd**, Aldermaston, Berkshire, has launched a new version of **LightWatch**, its network management system which now includes **Sun Microsystems Inc's** **SunNet Manager** and a graphical user interface: the firm claims it is a step towards enabling the building of cross-network graphical management systems and applications based upon the simple network management protocol - **SNMP** - under X-Windows.

Promis Systems Corp, Toronto, Canada, has introduced a new factory automation system for Unix: its architecture-independent **OBC** links computer-aided manufacturing systems with production equipment and is compatible with the **Generic Equipment Model, GEM**.

Sears Business Centres has a new document management system for **IBM RS/6000** workstations running under **OSF/Motif**: it lets users move from microfiche and paper documents to digital format.

ECCS Inc's AT&T-compatible storage products are now available for **Sun Microsystems Inc**, **NCR Corp** and other Unix platforms: the firm is also now testing optical jukeboxes that can store up to 32Gb disk.

Cyantec Systems Inc, Etobicoke, Ontario, has a \$145 per-user electronic mail system for Unix dubbed **Cymail**: a graphical version based upon the **Motif** graphical user interface will be out next year.

DEC is to start offering its **DECnet Phase IV** networking software on an OEM basis: first customer is a **Bell Atlantic** subsidiary that helped develop the package some nine years ago.

The Massachusetts-based **Cambridge Technology Group** has set up a sister company, **Cambridge Technology Partners**, as an open systems integrator to compete against the likes of the **Big Six**, promising to be quicker off the mark implementing strategic applications: the start-up says it is taking a completely pragmatic approach and has not aligned itself with any particular technology or platform; interoperability seems to be its chief thrust. It is being run by the former president of **Concurrent Computer**, **James Sims**.

AMDAHL WOOS SOFTWARE FIRMS TO RE-VAMP MAINFRAME UNIX FORTUNES

Amdahl Corp is looking to get its faltering mainframe Unix effort moving again by putting together suites of third party Unix applications and integrating them with its IBM 370-compatible Unix mainframes as turnkey systems. The company is said to be looking to pull together relational database management systems, file managers, document and imaging systems, transaction processing, VAX-to-mainframe conversion tools and networking applications under its new Open Enterprise Information Management System. It hopes to have the offerings in place by early next year. The move is seen as a means of holding onto MVS customers that want to move to open systems, who will be able to run the Amdahl UTS version of Unix System V native in one Domain while running MVS in another, as well as a means of winning virgin Unix sites.

MIPS ABANDONS BIPOLAR ECL SERVERS, R4000 QUAD-PROCESSORS - SAVES CASH FOR ACE

MIPS Computer Systems Inc, one of the companies that shut down most of its Silicon Valley operations for the July 4 week, is having to draw in its horns in face of the grinding computer industry recession, and Electronic News hears that the company has abandoned a pair of high-end server development projects - one to build a machine around its next generation ECL RISC, code-named Paragon, the other, the MX programme to do a four-processor R4000 machine. The ECL R6000 RISCs from Bipolar Integrated Technology Inc have proved troublesome, and the company is likely to get comparable performance to the existing R6000s used in the RC6260 and RC6280 from the new R4000 CMOS part. The paper suggests that the company now wants to devote a large proportion of its research and development dollars to the Advanced Computing Environment effort.

SIEMENS NIXDORF SPEEDS VMARK TOWARDS GRAPHICAL PICK

Siemens Nixdorf has signed a joint technology pact with VMark that will have it collaborating on the further development of VMark's Unix/Pick uniVerse software and accelerating the American company's R&D plans. The German is of course interested in the stuff because of its purchase two years ago of IN2, the long-time French Pick merchant with 7,000 installations, now absorbed into the Teuton and peddling its Targon machines (UX No 224). The initial products stemming from this agreement are planned for fourth quarter release and will include a Motif interface for uniVerse and client/server products that put Motif on applications running in ASCII terminals, X-terminals, PCs running Windows 3.0 and Macs. The pair will also work on tools to facilitate the development of X-based applications. VMark expects to port anything the two develop to all its supported hardware platforms, and recently cut a pre-paid royalty deal with Pick Systems that frees it of any further royalty commitment.

PDP EMIGRES OFFERED UNIX, VMS ROUTES

A couple more hardware tweaks - including a SCSI disk subsystem promised by the end of the year - and that will be it for DEC's 21 year-old PDP range. Time for the integrators, software migration specialists and other Houdini acts to move in. Bedford-based Sector 7 Software offers to move PDP applications over to a variety of Unix software and hardware platforms. The firm's Tony Airey reckons that there are around 15,000 PDP sites in the UK that could usefully benefit by escaping to open systems - but admits that only a few dozen have so far employed his company's services. He says most of those that have come across so far have been commercial users attracted to Unix because of the wealth of application software now becoming available on the platform, and that they have done so for operational, rather than strategic Unix or open systems reasons. The average price of migrating PDP application to Unix costs between £10,000 to £15,000. PDP users also have a route to VMS from the likes of Census Computer Services Ltd, Wolverhampton, West Midlands, which offers migration to VAX processors - and to DEC's MIPS Computer Systems-based RISC/Unix line if required. Census' Peter Webster says over 30 users have come over to VMS so far - prices again go from an average of between £10,000 to £15,000.

WANG TO CUT YET ANOTHER 4,000 JOBS AFTER IBM DEAL

Wang Laboratories Inc, which still employed 31,000 people as recently as March 1989, is undergoing one of the fastest shrinkings in the history of the computer industry, and it says that in the wake of its agreement to phase out most of its own products in favour of ones made by IBM Corp, it must cut its surviving 17,500-strong workforce by a fifth more - 3,000 to 4,000 are to go over the next few months. About half the cuts will come in already ravaged Massachusetts, where its rolls are already down to 6,000. It will not immediately stop making its own personal computers, but will now try to sell them through mass market retailers. It is also restructuring into three divisions - an information systems division that takes in about 70% of turnover and embraces both the VS and the IBM AS/400 and RS/6000; a personal computer systems division; and an Office 2000 division for the emerging document image processing push.

REDIFFUSION SIMULATION TO SLASH UK WORKFORCE 23%

Rediffusion Simulation Ltd, owned by the Hughes Aircraft Co unit of General Motors Corp, is slashing the workforce at its Crawley, Sussex base by 23% to about 2,000. The simulation industry is making a painful transition to open systems and distributed architectures, and Rediffusion's problems are compounded by deepening recession in the airline industry and reductions in defence spending. The cuts affect all levels of management, and technical and administrative employees.

ORACLE, INFORMIX GET B1 LAVENDER SECURITY RATINGS

The US National Computer Security Center has chosen three database management systems for its Trusted Product Evaluation Programme: Oracle v.7 for C2 level security and Trusted Oracle and a version of Informix for B1 level security; several other vendors' product offerings were not selected and will have to wait a year or more for the next evaluation programme. The Security Center is currently working on a database interpretation of security for its Rainbow Series of texts. Following on from the Orange Book for operating systems and the Red Book for networks comes the Lavender Book for databases. Trusted Oracle will be available later this year and will be implemented on multi-level secure environments such as Digital Equipment Corp's Security Enhanced VMS, Hewlett-Packard Co's BLS 8.04 Unix, and AT&T Co's System V/MLS Unix. As well as standard Oracle features, Trusted Oracle will also support the classification of data and users at multiple sensitivity levels for "mandatory access control" security. Oracle v.7 will have C2 level security features as standard - enhanced discretionary access controls, auditing and security administration capabilities - although users that require an assured C2 level of security need to run the database in a C2 operating environment. The new secure Oracle products are also designed to meet the equivalent European Information Technology Security Evaluation Criteria.

JAC OFFERS RPL USERS A ROUTE TO UNIX

Hemel Hempstead, Hertfordshire-based James Anthony Consultants is now offering an RPL to Basic translator which allows applications developed for the Pick-based environment to be moved across to Unix. The RPL language - an extended and distant relation of Basic - was originally used to develop manufacturing applications under Pick and these are still used by a number of major corporations, including Plessey and the Royal Ordnance Factory. RPL is now supported by just a handful of firms, and although it has been ported to subsequent releases of Basic, it has not been engineered to take advantage of new enhancements. JAC's translator enables all RPL dialects to be ported to any version of Basic via meta-tables - and then on to Unix. The translator is targeted at around 100 large UK companies using still using RPL manufacturing applications. There are thought to be many hundreds of users in the US, though few, if any, across the rest of Europe. JAC, a six-person outfit, is selling the thing for £1,475 in the UK - though it says the price is likely to rise due to demand - and it is looking for distributors for the product.

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Electronic Data Systems Corp has acquired **Infocel Inc**, which supplies Unix software at the local government level in the US: EDS took a 30% stake in the Raleigh, North Carolina-based company back in March.

Compaq has opened a new subsidiary in Mexico City, its 19th.

Marketing International Corp, Arlington, Virginia, is taking its Comexpo exhibition on the road around the former Communist states of Eastern Europe: Comexpo focuses on telecommunications, banking, transaction processing and other types of information systems and hits the Praha Hotel, Prague, Czechoslovakia, between September 4-6; the Vigado Center, in Budapest, Hungary, between November 13-15, and the Marriott Hotel in Warsaw, Poland from 19-21 November.

Momentum Software Corp, Englewood, New Jersey, has announced version 2.2 of its XIPC software for designing distributed applications - the new release includes support for asynchronous operations and triggers, a tool which allows programs to monitor inter-process activities and react to specified situations: XIPC now also supports SCO Unix, OS/2 and VMS in addition to AT&T Unix, Interactive Unix, SunOS and AIX, it's out now and costs from \$2,000 to \$12,000 depending on the operating system.

Six months after establishing an office in Moscow, NEC is still without a Soviet partner and is yet to make its first sale. Head of the Moscow office Harutoshi Sadashigo says tangible progress is taking longer than Tokyo had predicted. Given the intense competition in both the Soviet computer and consumer electronics markets, NEC is concentrating its efforts on the telecommunications sector. Sadashigo suggests Japanese penetration of Soviet technology markets could significantly improve if there were a thaw in the currently frosty stance the Japanese government is adopting in its relations with Moscow.

Parsippany, New Jersey-based **Dialogic Corp's** AMX/81 audio multiplexer now supports Unix from AT&T, Interactive or SCO: the AMX/81 interfaces Dialogic's voice processing systems with other voice recognition, facsimile, text-to-speech and telephones - a development package costs \$1,250.

Epoch Systems, Westborough, Massachusetts, has new 20Gb, 60Gb and 90Gb disk subsystems which can be combined to give up to 420Gb data storage: prices for the Excalibur series go from \$94,000 to \$180,000.

NCR is now offering 50MHz Intel Corp 80486 upgrades for its 3445 systems which supports MS-DOS, OS/2, Unix V.4 and SCO Unix. Uni-processor upgrades start at £5,000 - multi-processor configurations begin at £15,500 - they are available in the third and fourth quarters respectively.

Geographic information systems specialist, UK, Cambridge-based **Laser-Scan Ltd**, has released a Unix version of VTRAK, its map-digitising software. VTRAK works on a join-the-dots premise. It allows users to display those features of a map they require by clicking on the dots - the software then draws in those features. VTRAK is out now on DEC/Ultrix and Sun Microsystems platforms - IBM RS/6000 and Hewlett-Packard HP-UX versions will ship later this year - it costs from £15,000.

Siemens Nixdorf Information Systems Ltd, Bracknell, Berkshire, last week announced two new models in its WX200 range of high-end Unix-based workstations. The desktop WX200-43D2 and WX200-43T3 tower use Intel Corp 80486 parts: the 20 MIPS-rated desktop runs at 25MHz, the 33MHz tower is rated at 27 MIPS - they run Sinix Open Desktop and come with from 8Mb to 32Mb RAM.

Formerly managing director of **Pick Systems Europe** (before its retreat back to Irvine, California), **Stanley Niederberger** has now moved over to head-up **Natick**, Massachusetts-based **VMark Software Inc's** European operation, which is based in Paris.

French optical disk specialist **Dorotech** has set up a UK operation in Wallingford, Oxfordshire, headed-up by **Michael Kelly**: Dorotech sub-systems run on Sun Microsystems, Hewlett-Packard, ICL and Bull Unix machines.

Syntax Inc, Auburn, Washington, has implemented its LMserver, LAN Manager server for Unix, on Silicon Graphics' Irix Unixalike.

Furthering the aims of the **ONC/NFS Development Cooperative**, (UX No 327), founder member **TGV Inc**, Santa Cruz, California, says its MultiNet TCP/IP connectivity package for VAX/VMS systems is now compatible with DEC's Pathworks version 4.0 and supports TCP/IP on MS-DOS-based workstations. TGV claims that any application written to run over DEC's VMS/Ultrix Connection, UCX, will now run over MultiNet 3.0, available now.

Even high-flyers like **Convex Computer Corp** can't buck the deep recession in the computer business, and the **Richardson**, Texas company says that it expects to report break-even, or a small loss for the second quarter on turnover equal to or less than the \$55.6m it recorded for the first quarter: as well as the economy, Convex is blaming much more aggressive competition and reliance on its low-end products.

One of our triple A-rated sources claims that **Novell** president **Ray Noorda** met with **IBM** in the Boston area recently and that the room was swept for bugs first. Wonder what those little rascals might be up to?

Sun Expo '91 is scheduled for July 23-25 at the San Jose Convention Center in California, (UX No 340).

Some dinosaurs die hard. Canada's **Mortice Kern Systems**, the Posix firm, has been quietly branching out into the OEM business and reportedly signed up a handful of brand name vendors as clients: it's making their proprietary software Posix-compliant. **Mortice Kern Systems** is currently shy about naming names.

Mt Xinu has spun out its **Xinet** division as a separate corporation to focus on Unix-to-Macintosh connectivity products while its parent soldiers on with Unix and Mach goodies: **Mt Xinu** president **Robert Kridle** is now president of **Xinet** and **Deborah Scherrer** takes over at **Mt Xinu**.

Microport is out trying to rustle up some business among the Sparc cloners for a proposed version of SVR4 for Sparc machines, figuring they'd rather get their software from a third-party than from Sun - even the new Sun offshoot **SunSoft** - which by the way officially started business last week. **Microport** estimates a Sparc run-time version would be priced at around \$1,000. Meanwhile, it has re-entered the European and Far Eastern markets with three new distributors for SVR4/Intel: **Danmos Microsystems** for Denmark, **GSE** for Germany and **Kanishka Systems** for Singapore, India and Hong Kong.

In the US, **IBM** is reported to have shown-off prototypes of its next-generation RS/5000 systems to key resellers (UX No 322). Originally thought to have been targeted for this summer, **Computer Systems News** reports that an Autumn debut is more likely, but observers say the same kinds of delays that beset the introduction of the RS/6000 cannot be ruled out. The paper looks for as many as seven models, with prices going from under \$5,000 to around \$35,000.

Funny game, football, as they say - **Amstrad Plc** shareholders are less than delighted at the idea that **Alan Sugar** will be dividing his time between the computer and consumer electronics company he created and **Tottenham Plc**, where he is to be non-executive chairman, and may as it were take his eye off the ball - to prove that anything is possible, one newspaper suggested that **Terry Venables** is to become non-executive managing director of the company that owns the North London soccer club - but **Spurs** fans are breathing a sigh of relief that one rumour, later denied, definitely won't be coming to pass: word doing the rounds was that if **Robert Maxwell** succeeded with his counterbid, the club would have taken the field next season as **Maxwell Hotspur** - or was it **Tottenham Maxwell**?

Digital Equipment Corp is expected to announce formally the **MasPar Computer Corp** MP-1 massively parallel product line as part of its own line-up later this month. The machines are front-ended by the **DECstation-5000** RISC workstation, but will retain the **MasPar** badge when marketed by **DEC**.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

KBN

15 JUL 1991

London, July 15-19 1991

Number 342

TOSHIBA READIES ENHANCED, MIPS-COMPATIBLE CHIP-SET - NEC, SIEMENS "WILL BE FIRST WITH R4000"

Toshiba Corp is looking to take on board a second RISC processor, following the adoption of Sun Microsystems Inc's Sparc technology for use in its laptops. This time around the company is once again said to be eyeing-up MIPS Computer Systems' R3000 and R4000 RISC chips, from the rival RISC camp, which now has the weight of the ACE Consortium Initiative backing it. Although MIPS already has Integrated Device Technology Inc, LSI Logic Corp, Performance Semiconductor Corp, NEC Corp and Siemens AG as suppliers - and is precluded by its contractual obligations to these firms from signing-up others - US reports say that these limitations would not stop a determined Toshiba from negotiating to supply MIPS parts too. Indeed Toshiba, already an Architecture Licensee for the MIPS part, (UX No 325), is said to be currently readying an enhanced, MIPS-compatible chip-set, and the suggestion is that at the very least, Toshiba will likely become a foundry for MIPS' existing suppliers. The *Microprocessor Report's* Michel Slater expects NEC and Siemens to beat the three US suppliers to delivery of the as-yet unannounced R4000 RISC.

IBM AGREES TO BUY METAPHOR

The IBM/Apple adventure took another turn last week, ending any remaining speculation about whether Metaphor and Patriot Partners will find a safe haven inside the anticipated joint venture IBM and Apple are to establish to build an object-oriented operating system. IBM announced an agreement in principle to buy Metaphor Computer Systems and run it as a wholly owned subsidiary. The deal will give IBM total control of Patriot Partners, the 50-50 joint venture it set up with Metaphor in September of last year to develop object-oriented systems software technology for use on multiple operating systems and networks. IBM intends to fold Patriot Partners' work into its prospective joint venture with Apple. Metaphor itself, as an IBM subsidiary, will focus on integrating its Data Interpretation Systems (DIS) capabilities with IBM's. DIS combines a GUI with relational database technology meant to allow non-technical business people to access multiple databases and create their own applications.

ESBER VINDICATED: ASHTON AGREES TO GO TO BORLAND QUIETLY

At the second time of asking, Borland International Inc has succeeded in getting Aston-Tate Corp to name the day in a merger that will create a microcomputer software company of a size to be able to look Lotus Development Corp in size and big enough to dream of one day catching up Microsoft Corp. Back in April, we related how, early last year, Borland's Philippe Kahn approached then Ashton-Tate chief Ed Esber and proposed a merger, how Esber liked the idea and put it to his board, which hated it so much that it forced Esber's resignation. Borland's conditions then were that Ashton drop most of its products and end its legal proceedings against Fox Software Inc. The companies have signed a definitive merger agreement under which Borland will exchange new shares valuing each Ashton at not less than \$17.50, and the whole company at \$439m: the formula is at least 0.346 and no more than 0.398 of a Borland for each Ashton out. To ensure that no-one tries to muscle in on the party, Ashton-Tate has granted Borland an irrevocable option to acquire 5m new Ashton-Tate shares, or about 19.9%, at \$17.50 a share. The pact also provides for either to demand a \$13.5m fee from the other if for any reason the deal is not completed. On the products front it is likely that Borland will want to treat Ashton's dBase user base as a prime prospect list for its own Paradox, and question marks will hang over how enthusiastically the Framework graphics program and Multimate word processor will be marketed, but there are goodies buried in Ashton, notably the Interbase database product - an advanced product designed to run on Unix and VAX hardware that is designed to offer broad functionality for distributed, client-server computing and yet to be easy to use. This may well prove to be the base technology developed for migrating Borland Paradox and Ashton-Tate dBase users onto a single future database product. Ashton-Tate lost \$18.1m on sales of \$230.5m for the year to December 31, Borland, whose shares are the one out-and-out American success story on the London Unlisted Securities market, made \$26.8m profits on sales of \$226.8m for the year to March 31.

ATHENA RIDES ON

PEGASUS AT CRANFIELD TECH

The UK's Cranfield Institute of Technology has installed a network of 80 MIPS Computer Systems-based DEC RISC Ultrix workstations which will run DEC's implementation of the Massachusetts Institute of Technology's Athena networking and distributed computing environment services, along with Visix Software Inc's Looking Glass desktop manager. The project is dubbed Pegasus, and it should go live in the Autumn. The network topology comes from MIT's Project Athena, a network of Unix-based workstations which was established in 1983 for development, research and teaching purposes: it spawned the X-Windows system. Already in use at the Royal Institute of Technology in Stockholm, Cranfield is the first UK site for Athena: Cardiff University in Wales and Queens University, Belfast, Northern Ireland, are also implementing the technology. 44 DECstation 5000/200CXs, 33 DECstation 3100s and 3 DECstation 5000/200PXGs will run graphics, CAD/CAM and scientific applications. Networking services include the Kerebos authentication system, Hesiod name server, Moira management tools, Zephyr for real-time messaging, POP post office protocol for E-Mail and the Carnegie-Mellon University-developed Andrew File System. The Institute's existing VAXcluster system will be integrated into Pegasus over time. Visix's Looking Glass manager was chosen in preference over IXI Ltd's X.desktop manager after an evaluation of the two.

HITACHI TRAWLS FOR MAINFRAME UNIX

Open Software Foundation founder member Hitachi Data Systems is reported to have been looking for a stop-gap Unix operating system solution until it is able to get OSF/1 running on its M series mainframes - identical to the high-end of the HDS EX mainframe series. HDS and is said to have approached Unix International member and mainframe maker Amdahl Corp in the hope of licensing its UTS Unixalike. Amdahl apparently rejected Hitachi's advances because it didn't want UTS to run on a competitive system. Unperturbed, Hitachi officials say the firm will announce its product plan by the end of the year.

IBM TO TAKE AMD PARTS?

We've been advised by those who keep fashionably up-to-date to stop referring to the 80386 and its betters as the 80386. That kind of designation now being passe, reserved only for the originals, a simple 286, 386, 486 will do. We are also advised that the 586 - aka the P5 - will appear as just that, the 586, Intel's indecision of last week notwithstanding (UX No 341). It will be followed in 1994 - 1996 by a 22 million transistor 686 and then in 1999 - 2001 by a 100m-transistor 786 which Intel is also calling the Micro 2000. And while we're on the subject of chips, there's some noise doing the rounds that says that IBM will switch to AMD for a 40MHz 386sx to put in a laptop it'll sell in the US and Europe.

APPLE AND IBM - ANALYST VIEWPOINTS

IBM "WILL BENEFIT APPLE"

*META Group's Desktop Computing Strategies Service
Jack Karp, Frank Michnoff, Matt Cain*

Object-oriented Operating Environment

We believe the most challenging aspect of the IBM/Apple deal will be development of an object-oriented operating environment (which we expect in 1994). The companies had been working independently on such an operating system (IBM with Patriot Partners and Apple with "Pink") and the two firms will merge their efforts. This initiative is similar to Microsoft's New Technology (NT) kernel effort, in that both propose support for multiple existing operating system applications, and run across both RISC and CISC hardware platforms. These two OSs, however, differ significantly in terms of hardware and systems software supported.

These object-oriented operating systems are designed to alleviate the burden faced by users developing applications across multiple heterogeneous desktop operating systems. We believe Windows 3.0 users will have the most alternatives when migrating - we expect both the NT and the Apple-IBM operating systems to support Windows 3.0 applications. Support for OS/2 2.0 and Macintosh applications under NT will be severely limited or non-existent. Further, although we do not expect the Apple-IBM OS to support 32-bit Windows (Win32) applications, support for OS/2, Macintosh and AIX (as well as Windows 3.0) applications would make this platform highly competitive. Windows 3.0 users will face a critical decision point in 2 - 3 years, when they must choose between Win32 or OS/2 2.x - this choice will lead them toward one of these OO OSs by the end of the decade.

Impact on existing operating systems

We believe the impact of this alliance will first be felt when IBM delivers (1992) a new version of AIX that supports the Motif and Mac interfaces, and runs Macintosh applications. This effort has several implications. First, AIX (on PCs and RS/6000s) becomes commercially attractive through its ability to run thousands of Mac applications. Second, we believe Apple will drop support for A/UX in favour of AIX. Third, IBM's commitment to OSF (never rock solid) continues to be questionable given this emphasis on AIX. Finally we believe IBM's RS/6000 (and forthcoming RS/5000) will gain market share (from 5% today to 15% by 1994), primarily due to the increased application availability and licensing of technology to others.

We believe that strong ties to IBM will benefit Apple positively, and continue to believe that, by 1995, Mac will achieve a 15%-17% PC shipment market share. This relationship will give Apple greater share of mind in corporate accounts that have been hesitant to grow their Mac installed base due to a lack of support from IBM. We believe IBM will move to support Mac as a client of LAN Server as well as OfficeVision in 12 - 18 months.

We remain positive on the outlook for OS/2 2.0 (4Q 91), and believe that IBM's willingness to work with 3rd parties (perhaps out of desperation), as well as the perception that the company is taking aggressive actions in the desktop arena, will strengthen OS/2. We expect greater support from independent software vendors (ISVs) and greater interest from user organisations to result. Moreover, IBM gains the Mac interface for future CUA iterations (eg CUA 4), circumventing a potential loss in the Apple/Microsoft lawsuit.

Hardware vendors (Apple included) will be affected significantly should this agreement be inked. Apple risks becoming "just another box vendor"; we believe clone vendors will quickly move to incorporate the Power PC chip and run the new Apple-IBM OS. Apple will attempt to derive a greater percentage of revenue from systems and applications software. IBM faces the "risk" of creating a RISC standard, only to lose sales to clone vendors (a repeat of the PC scenario). Further, the underlying hardware (ie RISC or CISC) is becoming increasingly irrelevant; mainstream OS and applications support will drive hardware sales and microprocessor dominance in the mid to late 1990s.

IBM and MIPS are well positioned in this respect (with the new Apple-IBM OS and ACE, respectively), as well as Sun, which continues to gain ISV support. We believe the losers are HP, which does not yet have the support of a mainstream OS, and NeXT, which now cannot rely on IBM to promote the NextStep interface. Finally, Motorola will benefit as a manufacturer of the Power PC chip, but its 88000 RISC line will be negatively impacted, while Intel's PC microprocessor dominance will remain largely unchallenged.

Bottom Line

The IBM/Apple relationship underscores the fissure in the desktop OS market, with Microsoft and ACE members moving in completely different directions to IBM and Apple. Users should make current desktop OS decisions based on the future directions and strategies of their vendor/suppliers and their allies.

WHY ARE IBM AND APPLE COMING TOGETHER NOW?

Amy Wohl, president of Wohl & Associates

Politics may make strange bedfellows, but the need for success in business can make stranger ones. We wonder how Steve Jobs feels about the fact that the sacred Macintosh interface is going to succeed where his NeXTStep never quite happened - on the face of an IBM RS6000 workstation?

The IBM/Apple alliance makes lots of sense in terms of why these former competitors can see each other as partners; each has strengths that play right into the other's weaknesses. IBM is hoping for substantial assistance in designing graphical user interfaces and understanding object oriented software. Apple is looking for large account credibility and help in obtaining the right chip to bring a high-end workstation to market. This is the easy part and we can expect to see some success for this part of the IBM/Apple relationship, some of it, perhaps, in fairly short order. We could expect, for instance, to see AIX on a Macintosh or an Apple RISC workstation in 1992 and hope for an Apple-inspired GUI for IBM's RS6000.

On the other hand, the hard parts are much harder. If Apple and IBM are to together create a separate and independent new company to build operating systems software for a new generation of personal computers and workstations, well that's not easy. And it's fair to note that neither vendor has a lot of experience at rapidly creating low-end operating systems. Apple has a history of underestimating the time required and IBM doesn't have a lot of success in this arena yet (although a revived OS/2, under IBM's nurture and control could rapidly change that perception).

Then there's the question of who's in charge of what. And how does Patriot Partners fit in? Will it compete with this project for developer mind share or will it be merged in? Or will IBM continue to insist that Patriot's Constellation project isn't about operating systems at all?

Then there is the question of how all this will meet the marketplace. There is no blank sheet of paper here. The ACE initiative, however weak, is still in progress, and Microsoft is unlikely to give it up easily. And MIPS, having just lost some of its market as Wang becomes IBM's largest VAR is likely to argue strongly for keeping on with the effort.

Ah well. It's too soon to tell. The future is in the future. And think what fun they're having in Seattle, trying to figure out what to do about all this!

NAG TAKES ALGEBRA PROGRAM FROM IBM

UK mathematical software developer and distributor, the Numerical Algorithms Group Ltd - NAG - Oxford, is to begin selling an IBM Corp algebra program, or symbolic server as the latest technologies are now known, to the academic community on the RS/6000 AIX RISC system, as well as other IBM platforms. The Axiom system began life at IBM's T J Watson research and development centre in Yorktown Heights, New York, in 1978. Known originally as Scratchpad, the software was designed for use in solving all types of algebra, calculus, graphics functions and numerical computations: novices can use it as a desk calculator. IBM has assigned the copyright of Scratchpad to NAG - which is calling the thing Axiom and selling it for £2,000, though the terms on which it gets it were not disclosed. Founded in 1970, the not-for-profit NAG says symbolic servers like Axiom allow mathematical problems to be computed via the manipulation of formulae, where both input and output can be purely algebraic, rather than numerical, and it produces more accurate results than have previously been attainable. Symbolic servers have been used to teach calculus in North American universities for some time now, and are said to have produced large productivity gains. Dr James Davenport from the University of Bath, who was involved in the original development of Scratchpad, says symbolic servers allow mathematicians to attack problems that previously couldn't be done by hand, especially in the area of biophysics. Indeed Axiom was used by the US team that recently calculated pi to 1,000 million decimal places. Davenport himself used Scratchpad back in 1985 to crack the US Federal Reserve Bank's public key encryption system: the bank used a variant of the Diffie Hellman scheme to communicate financial information and strategic policy to banking institutions across the US. Davenport's team was required to keep quiet about its methods for the next two years following an investigation by the US National Security Agency. Axiom uses object-orientated programming techniques, abstract data types hypertext and graphics, it has an interpreter and a library compiler, together with around 700 modules that have already been compiled. Under the terms of its deal with IBM, NAG must wait 12 months before it can port Axiom to other platforms. NAG says it will provide an interface to its Fortran library, which now comprises some 1,000 routines, and IBM and NAG will cooperate on developing further enhancements to system facilities and performance. And following ISO's formal standardisation on the new Fortran 90 language, NAG has introduced what it claims is the world's first Fortran 90 compiler: prices start at £600.

JAPANESE SPARC-CLONER MICROHELIOS TO UNDERCUT SUN BY 37% IN JAPAN

MicroHelios, a computer maker from Osaka, is planning to release a SparcStation 1 compatible machine, which it will build from US Sparc chips, sourcing the rest of the materials from Japan. The company is aiming to sell 1,000 units per year. The performance of the Helios-station is expected to be 12.5 MIPS, with a main memory of 64Mb. The software for the machine will be Sun OS 4.1.1. The price with colour monitor will be 1.9m yen, compared to Sun's Sparcstation price now of 3m yen.

TOSHIBA TO SUPPLY NIPPON SUN MICROSYSTEMS WITH WORKSTATIONS

Toshiba Corp will supply Sun Microsystems' Japanese subsidiary with upgraded versions of its SPARC LT model laptop engineering workstations starting next month. The company said it will supply an annual 2,000 units to Nippon Sun Microsystems KK to be sold in Japan under the Sun brand name. Toshiba expects to sell 4,000 units under its own brand name by the end of March, 1992. The SPARC LT workstation, based on Sun's 32-bit RISC chips, are capable of processing 17.5 MIPS and come with a 329Mb hard disk drive. Toshiba said it won't export the machines in the near future.

NCR STARTS TO DIGEST AT&T COMPUTER SYSTEMS

NCR started reorganising last week to accommodate its acquisition, however unlooked for, of AT&T Computer Systems. Its first move was to create the NCR Network Products Group (NPG) to be managed by its first recruit out of AT&T, Bill O'Shea, currently AT&T's vice president of systems marketing and development. O'Shea, one of the leaders of the product transition team that recently decided to scrub the majority of AT&T's product line in favour of NCR's gear (UX No 338), will be part of NCR's executive committee. Concurrently, NCR split its General Purpose Product Group (GPPG) in two, creating the Large Computer Products Division, responsible for the 3600 and 3700 parallel machines, the Teradata joint development project, the controversial Top End transaction processing monitor, databases and the company's I and V systems, plus the Midrange Computer Products Division, handling the 3400 and 3500 multiprocessors, the Unix operating system and manufacturing. AT&T's System 7000, StarServers and 3B systems will report to the Midrange Division via the AT&T Computer Systems Facility in Naperville, Illinois. O'Shea, whose appointment becomes effective August 1, will preside over NCR's network software services and Open Systems Interconnect application in San Diego, California; communications processors in St Paul, Minnesota; wireless communications products in Utrecht, Holland; StarGroup communications software, internetworking hardware and software, and systems and network management software in Lincroft, New Jersey and systems and network support in Columbia, South Carolina. NCR has put Bill Eisenman, vice president of its Multi-User Products Division, in charge of the Large Computer Products Division. Tom Tang, vice president of its Network Products Division, has been made responsible for the new Midrange Division.

ICL DOES SPARC VERSION OF TUXEDO FOR UNIX SYSTEM LABS

Though its parent has been won over by NCR's argument for going with Daytoner's Top End on-line transaction processing monitor (UX No 338), AT&T's Unix System Laboratories is continuing with the Tuxedo OLTP monitor it has inherited, and has released a version for Sun Microsystems Inc's Sparc RISC architecture. ICL, which developed the reference port of Unix V.4 for the Sparc, is also responsible for this Sparc implementation: InfoCorp expects the Unix on-line transaction processing market to account for 20% - or some \$14,900m - of the total OLTP market by 1994.

OPEN USER RECOMMENDED SYSTEMS GROUP FORMED

Open system user groups are starting to proliferate and the latest is the Open User Recommended Systems group, which likes to think of itself as OURS, which would be OK if anyone was going to remember what it stood for. NetWare begetter Novell Inc has stepped forward to announce its support for the group, which describes itself as the industry's first worldwide multivendor users group - sounds unlikely. Its aim is to bring together corporate level network computing users to communicate clearly their needs to computing vendors. A newly formed steering committee, announced by a Chase Manhattan Bank senior vice-president, includes representatives from Lockheed Corp; Shell International Petroleum; Chemical Waste Management; Texaco Chemical Co; Telecom Australia; the Center for Disease Control; Cablesystems Ltd; and Morgan, Lewis & Bockius. The first task for the steering committee will be to establish guidelines for vendor participation and it will be looking to vendors to co-operate in terms of service and support, educational programmes, system design and product compatibility. Vendors may also be asked to contribute equipment for testing, service and support to solve multivendor configuration problems and responses to the key issues.

MOTOROLA LEADS THE WAY - DESIGN

CENTRE FOR SINGLE CHIP RIOS PLANNED...

Some small insight into the Apple/IBM negotiations came our way last week from Motorola, one of the participants. It seems the boys aren't waiting for the lawyers to hammer out the definitive contracts - they're already busy defining the Rios single chip implementation and how it is to be jointly developed by IBM and Motorola. Motorola says they'll be setting up a joint design centre equally managed, staffed and funded by itself and IBM. Motorola figures Apple and IBM are showing the same haste on their side, laying the foundation for their joint venture. After taking off Friday July 5th, the negotiators were meeting again last week. What they're trying to nail down is purportedly complex and when the legal people get ahold of it it just makes it worse - lengthening the process and making it almost unrecognizable. So all they're willing to say is that they hope to have a definitive agreement by the end of the year. The major pieces of the pact have been isolated and have little dates along side them but what goes in between is apparently still not watertight. The burden of the Apple/IBM understanding was worked out in the last four weeks, a period one participant called "intense." Apparently there was some rough going and endless debate - so much so that they reportedly managed to alienate the staff of the Fairmont Hotel in California by repeatedly checking out in the mornings and then checking back in again in the afternoon because they were still working. They also gave the airlines considerable cause to rejoice. The reasons the announcement of the pact - originally scheduled for Thursday June 27 was pulled - are still vague, attributed to too many unresolved issues. However, an observer claims there was "an amazing public relations machine" in place and that in fact it was Apple driving to get the word out - a far cry from stories about Apple getting last-minute jitters. As it was, the decision to abort the announcement was made at 5 o'clock on Tuesday June 25 and although some of the negotiators started to disperse on Thursday they were called back almost immediately and things started up again. People gossiping in the hallways of the Fairmont got the impression that Apple's senior managers John Sculley and Mike Spindler were the actual instigators of the whole affair - but then again they hate to say that's true what with everyone staking some sort of claim to authorship. IBM's James Cannavino is seen from the inside as a very key player and all of Motorola's managers, including chairman George Fisher, were somehow involved. Motorola, with Apple acting as godfather, of course had no choice but to go along with the deal. Now they have to peddle it. They've already gotten inquiries; so has IBM. Motorola has set up a number you can call to get a line on what's going on. It's (512) 891-3614 in Austin, Texas. Don't expect too much to begin with but they will take your number and get back to you.

...AS SPARC, MIPS CHIP-BUILDERS PREDICT DECLINE OF 88000

Sparc licensee Cypress Semiconductor's president TJ Rodgers reckons that the Apple/IBM alliance means that the RS/6000 will become a major force in the RISC market. "There will be three pieces in the RISC pie - Sparc, MIPS and RS/6000. The other entries are now defunct." In US press reports he speculated that Motorola will almost certainly withdraw its 88000 RISC part as a CPU. "Certainly Motorola can't pretend to support three different platforms. The failure of the 88000 up until now came about because they couldn't support two platforms, so they sure as hell can't support three." Tom Longo, president of MIPS licensee Performance Semiconductor, said "I think this is a death blow for the 88000. I can't believe once they've got this chip-set (the RS/6000), they'll not encourage customers to use that instead of the 88000." Meanwhile Philips Information Systems, which re-badges Motorola's 88000-based boxes as its own, says, of the future of the 88000, "there has not been a problem yet, but undoubtedly questions will be asked."

A/UX DEVELOPMENT "TO BE CONTINUED"

Despite the fog that surrounds its alliance with IBM, it is likely that in the future we shall see AIX running on an Apple Computer Inc RISC machine based upon a cut-down version of the RS/6000 chip-set. So where does this leave Apple's own, not very popular implementation of Unix - A/UX - introduced with much fanfare back in February 1988 (UX No 166)? Naturally enough, development of A/UX has always lagged behind the rest of Apple's core technology, but recently there have been questions raised about the future of Apple's Unix. A/UX running under the latest release of the MacOS was expected at the launch of the long-overdue System 7 earlier this year. However, the availability of A/UX with System 7 functionality has been pushed back to the middle of next year. The A/UX team at Apple has also been taking hits, with Ron Lang, A/UX product marketing manager, leaving the team to join an object-oriented system division within the firm. Richard Finlayson, former A/UX product manager is on an assignment at Apple Japan, whilst Mike Channon, former A/UX marketing manager, has been laid off. Apple is currently searching for an A/UX product marketing manager. This year Apple has fired on all guns, first get the three new Macintosh models out of the door, then System 7. A/UX it seems, got leap-frogged in both instances. Apple admits that the lack of development on A/UX has been a direct consequence of these other projects. But at the end of the day Apple needs a Unix platform to be able to bid on the increasing number of federal government and defence contracts that specify open systems adherence, if not Unix per se. Reports predicting the demise of A/UX look premature at this time. According to an Apple insider, the likelihood is that Apple will continue with A/UX on its Motorola-based platforms, whilst a "Maced" version of AIX is developed for IBM and the Apple RISC machines that will be built around the IBM/Motorola-developed single-chip Rios implementation. To that end Apple is already working on a new version of A/UX - 3.0: it will debut at the beginning of next year.

IBM JAPAN, SOFTWARE RESEARCH FORM NEW FIRM TO MARKET THE RS/6000

Despite the flurry of agreements announced by its parent, IBM Japan Ltd continues to lead the way in the number and diversity of its joint ventures, and it is now to take a majority 65% stake in Advanced Integration Technology Inc in partnership with the big local software developer Software Research Associates Ltd, which will hold 35%. The new company has been formed to market the RS/6000 Unix machine and will start life on September 2 with 50 employees. It wants \$35m annual sales for fiscal 1993 to March.

JUDGE SETS A JANUARY DEADLINE IN APPLE-MICROSOFT-HEWLETT SUIT

Apple Computer Inc, Microsoft Corp and Hewlett-Packard have a deadline of January 31 1992 to complete the discovery process in Apple's suit against the other two over the Macintosh user interface, Judge Vaughn Walker has decided; the ruling brings a resolution of the suit in sight and is a small blow to the defendants, which wanted to continue discovery for a year. The judge also said he was inclined to dismiss Hewlett-Packard's counter-suit alleging that Apple's suit is an attempt to monopolise part of the computer industry. He said he would issue a written ruling on it shortly.

MICROSOFT PULLS OS/2 API FROM NT

Personal computer users will likely be faced with the choice of buying OS/2 or committing long-term to Microsoft Windows if Microsoft's plan to drop an OS/2 application programming interface from its 32-bit, New Technology operating system goes ahead. Next year Microsoft plans to ship NT with only Windows and MS-DOS interfaces, meaning NT will not be the core component of OS/2 3.0, which Microsoft is building under contract from IBM.

IOMEGA DELIVERS BERNOULLI DRIVES FOR UNIX

Iomega, the Bernoulli people, figure they've finally cleared the hurdles that have barred them from the workstation arena: price and capacity. This week, Iomega will introduce and start delivering two user-installable Bernoulli boxes for Unix stations: a transportable model and a dual system, both holding 90Mb formatted, a significant advance over the old 44Mb capacity Iomega previously achieved. The removable storage systems offer users the warm and cuddily feeling of crash resistance typically associated with Bernoulli technology and can be configured to boot Unix. Iomega promises hard disk performance with an effective access time of 19ms. They are self-cleaning and rugged, capable of withstanding shocks of more than 1000Gs. Iomega will also debut a 5.25inch 600Mb removable, erasable optical disk, its LaserSafe Workstation for backup and archiving. The products are SCSI-based and can be daisy-chained. List prices run \$1,400 for the transportable, \$2,600 for the dual and \$5,000 for the optical. Estimated life is 60,000 hours and Iomega drives carry a five-year limited warranty. Iomega will start its plunge into workstations with Sparc machines and add Silicon Graphics, IBM RS/6000, HP, DEC and MIPS boxes over the summer as the cabling and manuals become available. Iomega expects to go into the floptical business early next year and produce a second generation cross of its Bernoulli box and the floptical in late '92.

LYNWOOD: TERMINAL, X, PC, UNIX BONANZA

Eleven months after its management buyout from the Hunting Group plc, UK manufacturer Lynwood Scientific Developments Ltd, Crowthorne, Berkshire, has unveiled a range of terminals, X-terminals, personal computers and Unix servers. The LS10, LS20, LS30 and LS40 terminals are built around the Motorola 68000 processor and come with a variety of size, monochrome, colour and keyboard options. Each can be upgraded to Lynwood's first X-terminal, the LS X, which uses Texas Instruments' TMS 34010 graphics chip. The terminals offer Bull, DEC, McDonnell Douglas, Tandem and Tektronix emulation. LS PC personal computers run Intel Corp 80286 and 80386 CPUs, and come in a range of configurations. In addition 80386 and 80486-based Unix file servers are also available, along with Tempest versions of the new products. Prices go from £800 for the entry-level LS10 in single quantities, to £1,300 for the colour LS40. A 14" colour X terminal starts at £2,300, the 17" monochrome version comes in at £2,200, whilst an 80386 personal computer with 40Mb disk goes from £1,400. Lynwood says it already has a £500,000 order from a UK Ministry of Defence department for low-end terminals which it will migrate up to the X platform in future. There is also reported to be a £4m MOD X-terminal contract waiting in the wings which it will also be bidding on. Lynwood, whose Motorola 68030-based Open 30 Unix workstations are used in some instances by Tandem Computers Inc to front-end its NonStop fault tolerant line, is in discussions with the Cupertino, California-based manufacturer about the possibility of expanding their relationship, which may eventually see Tandem distributing its kit in the US. Lynwood says it hasn't seen the need to move the Open 30 series up to Motorola's 68040 part and Unix V.4 yet as its V.3.2-based LynX Unix implementation contains many of the enhancements offered in V.4. Lynwood expects to do around £9m in its first 11 months of independent trading: now located at a single site, it has 140 employees.

ENTIRE SYBASE UK TOP MANAGEMENT TOPPLED IN PALACE REVOLUTION

In a sudden swoop last week, Sybase Inc president and chief executive Mark Hoffman came to the UK and ousted John Louth, vice-president of international operations; John Stevens vice-president of marketing; Malcolm Neill, UK managing director and John Radford, international business manager. The coup has come as part of a radical restructuring of the company under which international operations that had been split in two as Europe and the Asia Pacific region will now be integrated under the leadership of Dave Peterschmidt who was previously vice-president of North American sales and who will continue to be based in Emeryville, California. Both Louth and Stevens have been kept on for a short period in a consultancy capacity as Sybase moves to strategic sales from the technical sales approach of old. Hoffman claims that under the old management the European operation had been targetting sales at the departmental level and that this restructuring - which may eliminate managing directors in every European country - will take Sybase up to the corporate level decision-makers in the big multinational companies that Sybase is now eyeing as its user base. Meanwhile international operations will reside in the UK with the technical services group providing secondary support for all of Europe. Sybase appears to have bought the Federal States of Europe idea implicit in the Single Market and argues that having separate managing directors, warehouses and so on in each country no longer makes sense. Hoffman added that he was tired of having to reconcile operational differences between Europe and North America and that with the promotion of Peterschmidt he should no longer have to get involved. International revenue currently accounts for 30% of overall worldwide revenues, and around 85% of this currently comes from Europe. Sybase is aiming for an even revenue split between Europe, North America and Asia Pacific, which seems to suggest that a good deal of the resources over the coming months will be given over to growing the Asia Pacific market - in other words cracking that wealthy but difficult market, Japan.

SPARC INTERNATIONAL CHIEF ANSWERS CRITICISM

Sparc International members have apparently been grouching about the amount of money the consortium is spending. So SI chairman Bob Duncan decided to face the critics down in the June issue of Sparc-Line, the group's newsletter, starting with a list of some of their complaints: "Why does it cost \$50,000 for a systems compliance test?" "Why does the chip test suite cost \$35,000?" "Why does it cost \$2,000 to test an application that already runs on Sun?" "Why is the trademark use fee \$1.50 for each unit shipped?" Duncan allows as how SI - which he reminds everyone is a not-for-profit organisation - will have spent \$5m by the end of the year developing specifications and test suites but claims it's running lean and isn't spending on frills like fancy offices. He also admits it will spend over \$400,000 in 1991 just for registering and protecting Sparc trademarks and another \$250,000 promoting the Sparc brand - in addition to the million SI already spent acquiring, developing and promoting the Sparc name. He reckons, however, that his members are getting a bargain and basically tells them to quit griping that they can't afford it. "That is contrary to the reasoning of leveraged spending," he lectures them, pointing out that it's a lot cheaper for them to do things as a group than on their own. He itemizes the cost of three years of membership in SI at \$160,000 to a hardware vendor and \$14,750 to a software house and reasons that that represents only 0.3% of their sales provided the box shifter moves 10,000 units at \$5,000 each and software guy sells 5,000 units at \$800. Maybe it's that volume proviso his members are having trouble with since few of them currently look like they're capable of moving even conservative amounts of product.

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Maximum Strategy Inc, San Jose, California, has a RAID - redundant array of inexpensive disks - system for use with the RS/6000, which both it and IBM will market: storing up to 43.2Gb data it's out in mid-July and costs \$112,000.

Tigre Object Systems has a new programming environment for designing colour graphical user interface software which will run unchanged across Windows 3, Apple Macintosh II, Sun/3, Sun Sparcstation, IBM RS/6000, DECstation, HP/Apollo and Sequent Computer environments: the Tigre Programming Environment includes an interface designer and the firm's object-orientated Tigris database.

MasPar Computer Corp, Sunnyvale, California, has introduced a parallel VME input/output controller and a new version of its Fortran compiler for its massively parallel MP-1 computers: prices are \$19,500 and \$6,000 respectively.

XVT Software Inc, Boulder, Colorado, has announced XVT-Design, an application generator which can output interface code for Macintosh, Microsoft Windows, Presentation Manager, Open Look and Motif environments: written in the firm's extensible virtual toolkit it is priced from \$900 to \$2,500, depending on the platform.

Cypress Semiconductor has released a multi-processing cache controller and memory management unit, the CY7C605, for building systems with up to four Sparc CPUs: it complies with level 2 of the MBus multi-processing specification for Sparc-based architectures and is available in 25MHz, 33MHz and 40MHz implementations - out in August prices go from \$1,200 each for the 40MHz version in quantities of 100-up.

Lundy Computer Graphics, Glen Head, New York, has an interface that allows its high-resolution UltraGraf and LDA CAD/CAM displays to be used in conjunction with the IBM RS/6000 system: the interface was originally developed for the Ford Motor Company - no prices given.

Micro Data Base Systems Inc, Lafayette, Indiana, has released version 3 of its KnowledgeMan business-orientated relational database and Guru, its expert system: both are available for Sun, DEC VAX/VMS, MS-DOS and OS/2 environments, upgrade prices go from \$250 for the database, \$700 for the Guru.

Dell Computer Corp has opened a wholly-owned subsidiary in Madrid, Spain: it's headed-up by Sixto Rodriguez. Meanwhile Dell has also introduced a program to serve Mexican customers through its Austin, Texas headquarters and via an alliance with PC Electronica of Mexico City.

Cobol specialist, Acucobol Inc, San Diego, California, has opened a UK subsidiary in Bury, Lancashire: it's headed-up by Martin Cooper.

Despite doubts over the future of its 88000 RISC following the deal with IBM and Apple, (UX No 341), Motorola Inc is expected to begin offering design support for manufacturers who want to implement the part in EISA architectures: the move would make Motorola's 88000 the first RISC chip to support the EISA bus standard.

NCR Corp has signed up for the Unix version of Lotus 1-2-3 which it will market on its System 3000 series.

In the UK, Interactive Systems Corp has signed up a third distributor for its Unix operating system software: Summit Group's Intel OEM, Summit Peripherals, Colchester, Essex, joins Metrologie UK's Amarante division and Chandlers Ford, Hampshire-based Micro Macro.

After all the shouting, NEC Corp agreed to exchange its 15% of Bull HN Information Systems Inc for 4.7% of Compagnie des Machines Bull SA - and at the ruling share price of the tiny 7% of the company that is freely traded, that puts a value of just \$14.7m on the stake; the UK and Italian subsidiaries will finally become one with the rest of Bull Europe SA and Bull HN will be responsible for North America and the Pacific; on the trading front, the company is doing even worse than it feared, with sales between 3% and 5% lower than projected, and it says that it will have to lay off even more than the 5,000 people planned to hit break even by 1992.

The European Commission has launched a formal investigation of the French government's plans to subscribe for new capital and make subsidies to Compagnie des Machines Bull SA totalling some \$1,070m.

There is of course a version of AIX Unix for the PS/2, but IBM Corp is nothing if not generous in spoiling its customers for choice - confusing them and making its own problems more intractable, the churlish would say: at all events, IBM UK Ltd has done a deal with Santa Cruz Operation Ltd under which the two will jointly offer Santa Cruz Unix System V/386 and Xenix support and training on the PS/2, which also enables IBM to hedge its bets and offer true blue AT&T Co Unix System V as an alternative to the Open Software Foundation OSF/1 version.

Lucas Management Systems Ltd, formerly Metier Management Systems, has set up a new division that will focus on introducing computerised planning and control systems to local councils: based on its Artemis fourth generation language, the division will offer financial control systems in addition to systems for estate management, software development and planning programs; also, the division is to launch Artemis Adept, designed to manage and control software development programmes; it was developed in conjunction with the Central Computer & Telecommunications Agency and it is compliant with new government-approved methodologies.

We can all turn green with envy over this bit of news: Compaq veteran Mike Swavely, after eight years with the company, most recently as President, North America, is going to make his current six-month sabbatical permanent and retire. He says he intends remaining active in the industry but does not anticipate taking a full-time operational role in the foreseeable future. Mr Swavely is not yet 40.

The Object Management Group last week applauded the IBM/Apple venture, figuring it will draw industry's attention to object orientation without threatening OMG's position since it will take the new allies quite a while to come up with something solid.

Having already gotten Computer Associates working on software for its machines, Hewlett-Packard, in a predictable move, has now signed a similar deal with another software biggie, Germany's Software AG: HP will market and sell Software AG's database and 4GL products on its 9000s including Adabas, Natural and Network. Worldwide release is due at year end.

"Fiscal 1991 was a difficult challenging year which forced us to re-examine our growth objectives", commented Larry Ellison as he reported a year end loss for Oracle of \$12.4m on turnover up 12% to \$1,028m. Fourth quarter profits plummeted 87% to \$5.5m although a \$20m extraordinary charge for restructuring accounted for a large part of the decline. Turnover for the fourth quarter was down 10% at just over \$287m - licence revenue dropped 21% to \$187.3m as service revenue grew 21% to \$100.8m.

Silicon Graphics will unveil a new range of low-end graphics workstations on July 22nd in the US - the following day the UK.

London-based MicroMuse is offering to turn AT-alike personal computers into low-end Sparcstations with a 20MHz, 12.5 MIPS Sparc part on an single-slot ISA board sourced from Opus Systems: with from 8Mb to 32Mb RAM, Ethernet, SCSI, and Sbus slot and SunOS 4.1 it costs £3,000.

It's a pretty pass when you can't even get your home town newspaper to speak well of you: The San Diego Tribune did a big piece on RDI the Sunday before last but the reporter had some trouble swallowing the sales figures the Sparc laptop people have been claiming they will do. RDI president Rick Schrameck had boasted the start-up will surpass \$113m this year, the Tribune said, but the paper got marketing director Steve McAllister to trim that to a hoped for \$100m and a more probable \$50m to \$60m. McAllister also told the Trib the company did "about half" the 25m it hoped to do in the last quarter - and 25% of that came from technology and products other than the laptop.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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VBN
22 JUL 1991

The weekly information newsletter for the UNIX ® community worldwide

London, July 22-26 1991

Number 343

SUN HONES COMMERCIAL STRATEGY WITH NEW LOW-END

Confirming that the performance of Unix workstation technology is more or less doubling every year or so, and that it is getting serious about the commercial market, Sun Microsystems Inc today wheels out go-faster versions of its year-old, low-end IPC and diskless SLC workstations, (UX Nos 280, 292, 341). The Sparcstation IPX - essentially a Sparcstation 2 - uses 40MHz Sparc parts sourced from Fujitsu and Weitek Corp and is rated at 28.5 MIPS, 4.2 MFLOPS and 24.2 SPECmarks, the same performance mark as the original Sparcstation 2 box. The integer units are identical to those in the Cypress Semiconductor Sparc chip-set, whilst the floating point co-processors are the same as the Texas Instruments 602A - both used in the Sparcstation 2. It comes with from 16Mb to 64Mb RAM, the GX graphics accelerator, 207Mb disk, floppy drive, two Sbus slots, SCSI, Ethernet, serial ports and a choice of 17-inch greyscale or 16-inch colour monitors. The GX accelerator has been shrunk from a board-size add-on to a single chip mounted on the CPU board, freeing-up one of the two Sbus slots it previously used. The IPC, which is rated at 15.8 MIPS, 1.7 MFLOPS and 10 SPECmarks is not being phased out immediately: Sun has cut the price and put in place an aggressive trade-in programme for the box, see page five. The ELC - which replaces the SLC - comes with a 33MHz Sparc CPU, again from Fujitsu or Weitek, goes to 21 MIPS, 3 MFLOPS and 20.1 SPECmarks. It comes with from 8Mb to 64Mb RAM, SCSI, Ethernet and serial ports on a card which fits into the back of a 17-inch monochrome monitor. Whilst the performance of workstation technology is going skywards, prices in the increasingly competitive market are moving in the opposite direction. The IPX comes in at \$12,000 - £9,750 in the UK: for \$13,500 you get the 16-inch colour monitor. A diskless ELC with a 17-inch monochrome screen is priced at \$5,000 - £4,000 - the same entry price-point as its 12.5 MIPS SLC predecessor: with 207Mb disk the price rises to \$6,300, £5,000. The Sparcstation 2 series machines are freshened-up at the same time, with standard system memory on the workstation increased from 16Mb to 32Mb, 424Mb disks replacing the existing 207Mb drives and new compilers from Kuck and Associates - which are also featured in the IPX and ELC - pushing performance up to 24.7 SPECmarks. Maximum memory is now 128Mb RAM and 20.8Gb disk. A new version of the graphics accelerator, the GXplus, is also included. It delivers a resolution of 1280 x 1024, has double buffering and performs 480,000 two-dimensional and 310,000 three-dimensional vectors per-second. Server versions get the same memory upgrades, plus Legato Systems Inc's Prestoserve NFS accelerator implemented on an Sbus board, which is claimed to improve NFS write performance by 85%. More Sparc news pages four and five, for prices, see back page.

TAKE TWO: UNIX INTERNATIONAL TAKES SYSTEMS MANAGEMENT REQUIREMENT SPEC TO OPEN SOFTWARE FOUNDATION

Unix International last week published a Systems Management Requirement specification that it intends to use to develop a complete distributed systems management framework to compete against the Open Software Foundation's Distributed Management Environment specification. Unix International will claim to distinguish itself from OSF by basing its technology on a distributed, object-oriented methodology that it says will shield users from the procedures' inner complexities. Yet at the same time, Unix International, for a second time (UX No 331), will effectively seek OSF's blessing of its specification by submitting it to OSF - though separate from OSF's DME Request For Technology - in an attempt to harmonise their possibly divergent solutions. The Unix International specification was developed by its system management work group which consists of 40-odd multinational vendors, independent software vendors, industry analysts and end users including OSF founder Hewlett-Packard, which has reportedly been trying to peddle its OpenView/New Wave technology and its distributed object management framework stuff to UI members. Unix System Laboratories is now supposed to use the specification as a guideline to develop reference technology and appropriate application programming interfaces. The framework requirements call for a number of common Systems Management technologies to be developed over the next two years for use in heterogeneous sites. The specification, part of Unix International's recently conceived Atlas programme (UX No 328), is meant to embrace both Unix and proprietary operating system environments and comply with the usual laundry list of standards. Armed with the UI framework, USL, which has to put it all together, has reportedly been negotiating with OSF DME submitter, Texas start-up Tivoli Systems for its object-oriented technology, which informed sources say provides three-quarters of what is needed. However in the current political climate, a single source may not be possible. In addition, companies such as HP, Unisys and NCR have interesting technology and further technical evaluation will reportedly be done.

REBEL SVR4 APACHES FORM MIPS/OPEN GANG

The Apache Group, that renegade bunch of MIPS licensees who refuse to move docilely onto the ACE reservation, is about to go on the warpath. In a move anticipated even before the ACE Initiatives went public, the Apaches are organising themselves into a formal counter-ACE consortium (UX No 328). The entity will be styled MIPS/Open. Announcement of its existence could come in a month. Its founding members include AT&T Computer Systems, NEC, Olivetti, Prime, Pyramid, Sony, Siemens, Nixdorf, Tandem, Unix International and Unix System Labs, some of the brightest lights and most substantial companies connected with ACE. The MIPS/Open charter will reflect their collective support for Unix SVR4 on the MIPS Computer Systems Inc chip. The group's choice of a name is apparently more than a simple tribute to the similarly styled, albeit competitive 88open, generally regarded as best of breed amongst these kinds of organisations. Like 88open, the main premise underlying MIPS/Open will be the idea that any software written for the MIPS/Open platform will run on any member's hardware without modification. That possibility, realisable through a single operating environment composed of an SVR4 application binary interface, ABI, and a MIPS processor application binary interface, will present independent software vendors, ISVs, and the manufacturers themselves with a quicker "shrink-wrapped" software ramp than ACE's timetable allows. MIPS/Open intends to make ISV recruitment a priority since the number of applications following any hardware platform is the current sign of success. In that respect MIPS/Open will obviously lock horns in the marketplace with ACE, which itself is currently out trying to win software houses over to OpenDesktop and Microsoft's New Technology. MIPS/Open, which will have a full-time staff and sites in the US, Europe and the Pacific Rim, will negotiate with ISVs to port products to its reference platforms, certify hardware and software and recruit additional MIPS/Open members. Standard ISV deals will cover all members. Strategic deals will be cut between the member and the particular ISVs. The formalisation of the Apache Group as MIPS/Open is an embarrassment for ACE. By underscoring the membership's lack of commitment to the Initiative it also emphasizes the isolation of its leaders, DEC and Compaq.

APPLE-IBM - ANALYST VIEWPOINT 2

UBS Securities vice president **Marc Schulman** last week revised his famous ACE analysis "Microsoft and the New World Order" (UX No 328), in the light of on-going events. The following is a precis of his latest thinking published under the title "IBM and Apple: From Foes to Friends".

Regardless of the ultimate success or failure of the alliance, the psychology of computer buyers will be altered. This change in psychology will immediately influence buying decisions. Within this context, we have compiled a list of implications resulting from the announcement of the IBM-Apple partnership. We believe that these repercussions will be felt whether or not the partnership is ultimately a success.

* The prospects for IBM's OS/2 2.0 have been enhanced, and, correspondingly, those of Windows 3 are diminished. Apple is hardly likely now to sue IBM over WorkPlace Shell, the Mac-like GUI it's using in OS/2 2.0. Windows 3 on the other hand has just been included in Apple's suit against Microsoft. If the court rules in Apple's favour, Microsoft could be required to alter the functionality and operation of Windows. To a user then, following Microsoft's path entails the risk that the path will be fundamentally and abruptly altered, a risk avoided by following IBM.

* Because OS/2 2.0's outlook has been strengthened, the prospects for Unix systems have been weakened. Vendors selling only Unix-based systems would be better served if Windows 3 prevailed and OS/2 2.0 flopped. In that case, the first real challenge to Unix would come from Microsoft's OS/2 3.0 which won't be available for at least a year after deliveries of OS/2 2.0 start.

* The outlook for vendors like Data General that use Motorola's 88000 has deteriorated. The death knell of the less-than-successful 88000 has been sounded. Both users and ISVs will now seriously question Motorola's commitment to the 88k. This questioning will result in fewer sales of 88k-based systems and lessen ISV interest in developing applications for them.

* The acceptance of OSF technologies, Motif, DCE, DME - which figure in both ACE and IBM/Apple plans - will be spurred. As users become aware of the IBM/Apple intent to employ OSF technology, a growing number of them will conclude that such technology is the wave of the future and require that their current vendors support it. As a result Unix International will be weakened.

* Because the IBM-Apple alliance threatens them both, Hewlett-Packard and Sun will move closer to each other. A common software environment would be in the interest of both companies. Because of Sun's large installed base, Hewlett-Packard, which alone faces a much smaller market share than MIPS, Sun or IBM, would be assured of a continuing flow of new applications. Due to Hewlett-Packard's support of OSF technology, Sun systems would be able to interoperate with DCE-based networks.

* The success of the ACE consortium is less certain. Users who would have followed the ACE path to Microsoft's OS/2 3.0 will delay their decision to take a look at the portable IBM-Apple operating system.

IBM's primary goal in siding with Apple is to remove itself from the clutches of Microsoft and Intel (and at the same time reduce its exposure to DEC's competitive incursions); improving its competitive position against ACE and other workstation vendors is secondary if important. By establishing a jointly owned and independently managed systems software company with Apple and agreeing to have a third party, Motorola, manufacture and sell the MPUs in the open market, IBM has maximised the probability that others will adopt its technologies and, accordingly, that the market control exerted by Microsoft and Intel will decline.

By changing the perception of computer users, the IBM-Apple partnership will soon exert a negative influence on Microsoft. With ACE, Microsoft succeeded in positioning itself at the centre of a constellation of companies that would further its goal of extending its reach beyond PCs. IBM has now created an opposing constellation that includes every significant software company except Microsoft (ie: Novell, Micrografx, Borland, Lotus). It is now armed for battle with Windows 3. The battle will erupt in Q4 (probably October) when deliveries of OS/2 2.0 begin. While the impact on Microsoft should be immediate, Intel should feel little or no impact until systems using the Power PC chip are shipped two or more years from now. IBM's introductions of an under \$10,000 RS/6000 workstation expected by the end of 1991, may provide a preview of the future.

FUJITSU'S NEW CPU + FLOATING POINT SPARC AT UP TO 40MHz

Fujitsu Ltd's Fujitsu VLSI affiliate and its Fujitsu Microelectronics in San Jose have jointly developed a new MB86903 version of the Sparc RISC that combines the integer arithmetic and the floating point unit in a single chip. Rated at a maximum 29 MIPS, the MB86903 comes in two speeds - 40MHz and 33MHz. The 40MHz version is \$470 and the 33MHz one is \$352. Fujitsu is planning to fabricate them - in 0.8 micron CMOS - at a rate of 20,000 a month - the good ones are sold as 40MHz, those that don't cut it at 40MHz but work at 33MHz are marked with the slower clock rate.

RIVAL OFFERINGS TO PUT MACINTOSH SCREEN UP ON X-TERMINALS

Two companies with but a single thought: Cambridge, Massachusetts-based Cayman Systems Inc and InterCon Systems Corp, Herndon, Virginia have each come out with products that enable an Apple Computer Inc Macintosh to be run from an X-Window System terminal. The Cayman product is called XGator and the company says it causes the Macintosh desktop to appear on screens of Sun Microsystems Inc, Digital Equipment Corp and other workstations or terminals running X-Windows. XGator is claimed to be the first X-Window client software for the Macintosh and is claimed to enable workstation users to run Macintosh applications from an X station or terminal and network administrators to manage Macintosh networks and support the users from their workstations. A single Mac running XGator can act as a server to give many X-terminal users low-cost access to Macintosh applications from anywhere on the network; users can also cut and paste between Mac and X applications. It needs a Mac Plus or SE up and System 5.0 up. It is \$500, next month. The InterCon product is called Planet X, and is also an X Window System client that provides remote control of Macintosh computers. Offering essentially the same facilities as XGator, it also supports any other Macintosh running MacX and maps the remote Macintosh's windows on the X workstation bit-for-bit, including colour. When a session is established, the Mac screen appears as a separate window so the X user always has control of the local desktop applications. It can also be used to create a file server using a Mac II. It runs under Finder and MultiFinder and needs 1Mb, 2Mb for colour, System 6.0.5 up, MacTCP, which is bundled with Planet X. It sells for \$300 single user and it will be offered in bundles for 10, 25, 50 or 100 users; available mid-August.

SILICON GRAPHICS LAUNCHES ENTRY-LEVEL ACE DESKTOPS...

In the US, Silicon Graphics Inc, Mountain View, California, today - Tuesday for those of us in the UK - debuts its "Hollywood" entry-level desktop systems, which are blessed by the touch of the Advanced Computing Environment consortium initiative (UX No 342). ACE founder member SGI claims the desktop machines are the "first RISC-based personal computers." They comply with ACE's MIPS Computer Systems-based vision of the future, and will become fully compatible with ACE's Advanced RISC Computing hardware specification over time. As expected, the machines use a 33MHz version of MIPS Computer Systems' R3000A RISC part, and are aimed at multi-media and colour desktop publishing applications as well as SGI's more traditional, three-dimensional graphics markets. They'll come in at somewhere under £10,000 in the UK - a US price of around \$8,000 has been touted.

...AS SOLBOURNE JOINS SUN, SILICON GRAPHICS PARTY WITH LOW-END BOXES

Although it says it doesn't want to "out-Sun Sun" - or Silicon Graphics for that matter, see front page - Solbourne Computer Inc, Longmont, Colorado, brought forward to last Friday the US announcement of the low-end, transportable S3000 and enhanced S4000DX Sparc-compatible systems that were not due to be introduced until September: indeed a European launch is not scheduled until that time. Perhaps also looking over its shoulder at the gaggle of emerging Sparc-builders and Sun's plans for them - see page 5 - Solbourne is introducing the small footprint S3000 version of its S4000 box built around the Matsushita Electric Industrial Co Panasonic MN10501 64-bit Sparc implementation, jointly-developed with and already sold by its Osaka-based, 52%-owner in Japan since last October (UX No 304). The 25lbs S3000, with a 16-inch, 1152 x 900 monochrome plasma display, is rated at 13.3 SPECmarks, 25.5 MIPS and 1.7 MFLOPS. With from 8Mb to 104Mb RAM, 500Mb disk, two Sbus slots and a 3.5-inch floppy drive it is priced at \$15,000. The new S4000DX desktop - an enhanced S4000 - is built around a 36MHz version of the Panasonic Sparc, is rated at 28.3 MIPS and 18.3 SPECmarks, comes with from 8Mb to 128Mb RAM, from 200Mb to 1.4Gb disk and the SGA20 graphics accelerator. A diskless version is priced at \$10,000: with a 19-inch monochrome monitor, 8Mb RAM and 200Mb disk it costs \$11,500, and with a 19-inch colour screen, 32Mb RAM and 500Mb disk the price rises to \$21,500. Solbourne, with its SunOS-derived OS/MP Unix variant, has in the past had to wait, in some cases, many months to get hold of the latest enhancements to Sun's operating system. With the opening of SunSoft Inc and the Sun subsidiary's software charter, Solbourne reckons that although "we've had problems, we believe we'll get SunOS 5.0 [Sun's Unix V.4 implementation due in November or December], at the same time as Sun. SunSoft has put us on a more equal footing with Sun." Whilst Solbourne will implement a version of SunOS 5.0 on its workstation technology during 1992, it will continue to develop its multi-processing version of the SunOS 4.X releases for its multi-processing server series, probably until 1993. And when Sun finally reveals its long-awaited Galaxy multi-processing Sparc systems later this year, Solbourne won't be taking the encroachment into its territory lying down. Already driven out from Sun's dealer channels in the US (UX No 330), Solbourne will respond by upping the ante with new multi-processing architecture and input/output subsystems. The current top-end, eight-processor Series 5E/900, which uses 40MHz Cypress Semiconductor Sparcs, will be superseded by systems with more - superscalar - CPUs.

PYRAMID EUPHORIC, ARIX CRUSHED AS AT&T WINS \$1,400m US TREASURY PACT

AT&T Co's OEM agreement with Pyramid Technology Corp for the latter's MIPS Computer Systems Inc RISC-based Unix multiprocessors has won a big reprieve with the news that AT&T has won the US Treasury Department contract, which could be worth over \$1,400m if it runs its full seven-year term. It is for 3,200 of the Pyramid machines, 50,000 WorkGroup Systems and networking products. Computer Sciences Corp will provide professional services under subcontract. The kit is primarily for the Internal Revenue Service - where Pyramid already has 100 systems in use - but other Treasury operations can buy computers under the contract. The award is a terrible blow to struggling Arix Corp, whose machines were bid on the contract by IBM Corp: the Arix share price plunged \$1.5625 to just 43.75 cents on the news. Lockheed Corp bid Hewlett-Packard Co boxes. Arix was depending on the contract to get it out of its current financial woes: however, reports that Arix will instantly dematerialise are exaggerated, according to company chief Gene Manno. His creditors, owed around \$5m, are being understanding, because of the Federal Courts bid they won together. Arix could resign itself to being just a \$25m company, Manno claims, and survive looking for new business and filling its \$3m backlog. Just what plan B will be, however, is still under discussion. IBM, Arix's contract partner and the prime contractor, could decide to protest the award provided they can muster an unfrivolous case. Such is certainly a well-travelled route: something over 60% Treasury's award reportedly get overturned. They have until Wednesday July 24 to lodge a protest.

RDI IS CUFFED BY COURTS - MUST NOT SELL OR SHOW MAC SOFTWARE

RDI Corp, San Diego, California, has been slapped with a temporary restraining order that prohibits it from selling - or even demonstrating - the Mac part of its Sparc laptop, Britelite. Xcelerated, the software company that says it developed the Mac piece that RDI calls Champion, also got the California Federal District Court to order RDI to turn over all copies of Champion to Xcelerated and to give Xcelerated the name, address and phone number of everyone who has a copy of Champion. Xcelerated is charging RDI with copyright infringement, misappropriation of trade secrets and unfair competition. Xcelerated VP of engineering Bob Kleinschmidt told Unigram.X that his company had provided RDI with a prototype for demonstration but that no business deal was ever negotiated. A hearing on the injunction is set for Monday July 22.

ICL TAKES UNIX BOXES INTO USSR WITH NEW JOINT VENTURE

Already a long-time player in the Soviet marketplace, ICL is forming a joint-venture with Kazan Manufacturing Enterprise of Computer Systems, KMECS, one of the USSR's largest mainframe suppliers, which is owned by the Soviet Ministry of Radio Industry. ICL's £1m investment buys it a 60% stake in the firm, with KMECS taking the other 40%. The new ICL-KMECS will market ICL's DRS6000 Sparc and RISC DRS3000 Intel 80486 Unix systems over there. KMECS has a staff of 10,000 and is located in Kazan, the capital of the autonomous Tatar republic east of Moscow. It manufactures copies of IBM 360 and 370 systems: there are thought to be around 20,000 of the "Ryad" systems installed across the USSR.

OPUS RE-DEFINES SPARC STRATEGY AS PRESIDENT GOES IN COUP

Opus Systems Inc, Irvine, California, one of the companies that had a hand in creating the technology that spawned the Sparc clone market some months ago (UX No 305), is now backpeddling on its own commitment to move its own Sun compatibles. Its recent experience trying to sell Sun Sparcstation 1 clones has convinced it to change its emphasis and focus instead on its Sparc mother boards, the 500 Personal Mainframe, or ISA, that fit into a slot in the personal computer and allow the Intel machines to run SunOS and Unix applications. Another persuasive reason behind the shift in focus is said to be the fact that it found several customers interested in buying between 8,000 and 23,000 boards. The reorientation is also the result of a political tussle inside the company that has cost Opus president Mark Johnston his job. Following a second-round, \$8.5m injection of venture capital funding last month, which brings total investment in the firm up to \$12.5m, it is understood that a US analyst did a whirlwind tour of ten of the Sparc-compatible builders, and on the basis of a report, the venture capitalist - which assumed the right of hire and fire with its latest cash infusion - decided that Opus was pricing its products too high, called for Johnston's head and prices to be lowered. Opus' 500 Personal Mainframe board was subsequently dropped 40% in price. According to Marsha Case, a product marketer with the firm, the company did not find sufficient enough demand for Sparcstations in the market it was targeting to justify it competing against other cloners with overseas factories and large volume capacities selling commodity products on the basis of price. Case said prospective customers did not want to bring in new hardware and instead asked Opus for a migration path that would allow them to salvage their installed base. Hence Opus' emphasis on the added value of the 500 Personal Mainframe.

Aggressive

The inability of Opus, perhaps the most aggressive and by its own account most successful of the current crop of Sparc cloners - claiming over 1,000 units sold since it started delivering October 22 - to crack the market with a Sparcette is indicative of the difficulties they have all been having since last autumn when they announced their Sparc intentions. None of the dozen or so largely offshore firms with personal computer backgrounds that announced Sparc machines have made much headway, beset, it seems, primarily by the problem of finding the right market and the proper distribution channels for the box. On the other hand they have done seemingly little to stimulate demand or add value, though some of the technology for adding value - such as 40MHz chips and graphics accelerators - hasn't been available. In addition, their plight has been aggravated by Sun which - in its own self-defence - has barred them from piggybacking on their own resellers and is now creating further barriers with its latest pricing scheme (see opposite page). Though it may not have communicated its message well, Sun expected its cloners to break new ground and create a massive commercial Sparc market. With its own strategy for attaining marketing dominance now perhaps in jeopardy, Sun simply shrugs its shoulders and talks in Darwinian terms of the winners maybe being in the next group of cloners. It knows however that its new SunSoft subsidiary has to come up with some answers pretty soon. Opus, now being led by founder Craig Forney, said last week that it is conducting an executive search to find a replacement for Johnston. Case said the company intended to support its Sparcstation 1 customers and provide upgrades to 40MHz chips when they become available. Unanswered is the question of whether it will team up with LSI in creating an instant Sparcstation 2 kit for other cloners as it did previously for the Sparcstation 1. Opus is also thought to be considering the withdrawal of its slow-moving Motorola Inc 88000-based products, perhaps the first fallout from the Apple-IBM-Motorola alliance, which some see as the beginning of the end of Motorola's RISC part as a CPU (UX Nos 341, 342).

SPARCS FLY AT ORACLE, BUT INFORMIX CONCURS ON CLONE POLICY

Storm-damaged Oracle Corp, which likes to boast that its database software runs on all platforms - 120 to date - has come under fire from certain quarters of the Unix industry, unhappy about the firm's licensing policies when it come to supporting new platforms. For instance, in the UK, a development package which costs £2,500 on a personal computer running SCO Unix may cost up to £8,500 - for the same application - on a Sparc platform, handicapping vendors of such RISC technology in their increasingly cut-throat marketplace. Whilst Oracle has on-going agreements with Sun Microsystems Inc and Solbourne Computer Inc for licensing and supporting its database technology on their platforms, it does not have any corporate policy for dealing with the clutch of new Sparc system builders now bringing Sparcstation-compatible or compliant workstations and laptops to market. Unofficially, some have been offered deals like paying a \$50,000, one-off licence fee, plus the provision of free machines in all offices, to get Oracle software on their platforms. John Spiers, Oracle UK's director of strategic marketing, admits that the firm "doesn't know what the commercial considerations" of dealing with the rest of the Sparc community - outside Sun and Solbourne - are. "We say we run on every platform - but it's hard work." Although he does not deny that such deals may have been offered to third parties, Spiers invites anyone interested in licensing Oracle software, to come to the table and talk. The problem, he says, and it's one that's reiterated by the likes of Informix, is that every machine requires a new port, even if it uses the same processor, because "even if someone comes along and says they've got a machine like someone else, usually it isn't," says Spiers. Oracle prices its personal computer and workstation Unix products on a per-user basis, whilst MS-DOS and OS/2 software is licensed per-copy. Informix's Charles Anderson says that porting to "true" Sun Sparc clones is not a problem - Sun and Solbourne editions exist - but the firm will only develop versions of its database for compatibles if they have the market share to justify it. In Anderson's opinion, none of the Sparc-compatible builders have this distinction so far, but he admits that Informix will do a port - if they are offered enough cash to make it worthwhile.

DATA GENERAL LAUNCHES AV OFFICE BASED ON UNIPLEX, NEWWAVE

Data General Corp has added 30 communications and office automation products for its AViiON Unix machines, headlined by AViiON Office Information Systems, a family of server-based products based on Uniplex and consisting of four base products - AV Office, AV Office DOS, AV Office Windows and AV Object Office, and three optional modules - Office DocConvert, Office Datalink and Office Dictionaries. AV Office for character-based terminals includes document processing, database manager, group communications, time manager, personal productivity tools and presentation graphics. AV Office DOS is either stand-alone or networked with the Unix machines, supporting MS-DOS applications locally; AV Office Windows is Motif-compatible for X-terminals and Unix workstations. AV Object Office, based on Microsoft Corp Windows and Hewlett-Packard Co NewWave 3.0, was formerly known as Open Systems Office/pc.DAA and announced in February this year. Pricing for the AV Office suite starts at \$2,000 and there is a 30% discount when you buy it with the AViiON hardware.

SUN OFFENSIVE: \$7,000 IPC, OFFERS \$1,000 TRADE-IN TERMS - CLONERS MAY BE HIT

In hot pursuit of commercial customers, Sun Microsystems Inc this week kicks off an aggressive, supposedly short-term, promotional campaign whose collateral effect may be to severely damage its supposedly long-term clone strategy. Effective immediately and running until the end of the year - though orders will be taken up to, and possibly beyond March of next year - Sun is offering an IPC workstation for \$7,000. The only difference between it and the usual IPC is a 16-inch Philips, rather than a 16-inch, 1152 x 900 Sony colour monitor. The price cut will leave little room for Sparc cloners to manoeuvre, since most of them have failed to add any value to their Sun knock-offs and can compete with Sun only on price. With an IPC available worldwide and fully discountable at a \$7,000 price point, the promised wave of Sparcstation 1 compatibles could evaporate. Indeed Sun claims to have already sold some 120,000 of the things since its launch last year (UX No 293). To make matters worse for the cloners, Sun is also instituting a special trade-in program aimed at its installed base and users of competitive machines. For \$6,000, customers can trade in an old Sun-3 or 386i box, Unix systems from IBM - the RS/6000 320H and 330H; HP/Apollo's DN3000, DN3500, DN4000, DN4500, HP 9000 720, 400dl, 400t, 425t, 400s, 433s, 425e and 425s; Digital's DECstation 5000/200, /125, /120 and 3100; or high-end personal computers from IBM - the PS/2 models 70 486, 80 386 A16, 80 386 A31, 90 XP 486 and 90 XP 486-OKD; Compaq's Deskpro 386/33L and 486/33L, HP's Vectra RS/25C, 486PC, 48625T and 486/33T; and Apple's Macintosh IIfx - and get the same IPC configuration. Sun's primary intent is not to damage its cloners, says Sun marketing vice president Larry Hambly. If such an effect occurs, it will merely be a by-product of Sun's race to lower prices before its larger competitors do, and at the same time radically increase the size of its market. The promotion follows hard on the heels of Sun's move to bar its resellers from handling any clones except Sparc laptops (UX No 330), a pragmatic business decision that cost Sun a significant amount of bad press and criticism for not being "an open company." One of the issues Sun's latest move raises, but leaves unaddressed, is whether the market will buy hardware at these prices while Unix applications software is still comparatively dear. In the UK Sun and its dealers are reported to have slashed prices by up to 56% on the IPC to win orders - however, even then, with a tag of only £3,000 or so, a firm is still able to make money on sales, it is claimed. Sun's UK marketing manager John Coon admitted that "we do use strategic discounting in some areas," but added that UK resellers are entitled to offer the boxes at whatever price they wished. Some though, are said to have been in receipt of a letter warning them not to discount more than 50%.

SUNSOFT ENHANCES SECURITY PRODUCTS...

SunSoft Inc, the new Sun software subsidiary, has enhanced the company recently christened Sun Shield security products. In concert with the company's overall pursuit of the commercial market, two new products, ARM and ASET, have been added to enable corporate MIS manager and network administrators to create customised security solution to protect their networks. ARM, or Account Resource Management, allows users to specify their own security parameters such as password length or number of allowable log-ins and handles password aging, account expiration, access hour restriction and automatic lockscreen. ASET, short for Automated Security Enhancement Tool, enables administrators to adjust the level of their security on their network. SunSoft has also agreed to incorporate the data encryption technology of California-based RSA Data Security in its existing and future products starting with the third party's network authentication system which will be used in Sun's ONC/NFS. Other companies such as Demax Software, Security Dynamics and Software Security are coming out with security products for the SunOS.

SUN READY TO LICENSE LATEST IPX, ELC TECHNOLOGY?

While Sun may on the one hand be closing its cloners out of the Sparcstation 1 arena before they are even up and running, at the same time it is preparing to license to them the latest onslaught on its technology. Its timetable is still not firm but surely by the end of summer it will have a program in place that will authorise LSI Logic, the original source of the instant Sparc kit the majority of cloners are basing their Sparcettes around (UX No 275), to make available to them all the technology found in the IPX and ELC Sparcstation models it is announcing this week: although whether Sun's GX graphics accelerator technology - which it jealously guards - will be a part of this process, is unclear. This time through, however, Sun will not limit itself to just LSI. The cloners should have multiple sources of the technology, encompassing the deskset tools, graphics libraries and GX graphics chips as well as the CPU chip, including those from AT&T, Fujitsu, Cypress, Weitek and Texas Instruments. Effectively this means that Sun will be licensing its highest volume desktop machines. One cloner familiar with the plans is amazed that Sun is prepared to unleash this technology. At press time, the pricing was reportedly still up in the air but it will be stepped so that cloners who want it at the same time as Sun will pay more than those who want it in six or 12 months. It will also be priced as a percentage of system's cost of the clone. Sun is said to be tying the fate of its SunSoft Inc subsidiary to the success of the clones by structuring its compensation packages around how well the cloners do.

TEXAS "VIKING" FOR GALAXY MULTI-PROCESSORS

It looks certain that Sun is to use Texas Instruments' super-scalar "Viking" Sparc in its forthcoming multi-processing "Galaxy" system. The 40MHz, 0.8 micron, Bi-CMOS TI part is touted at anything up to 80 MIPS performance, but a launch date for the multi-processors has yet to be confirmed. Superscalar is a vague term, but Bi-CMOS techniques are purported to provide the best of both worlds: bipolar technology for the speed-critical parts of the chip, CMOS elsewhere to reduce overall power consumption and CMOS power levels off-chip, enabling CMOS support components to be used. The line-up of firms fabricating the Sparc in various guises now includes Fujitsu, which is working on third-generation CMOS technology; Cypress Semiconductor, which is doing CMOS and superscalar "Pinochle" implementations; Bipolar Integrated Technology, whose parts are used by Floating Point Systems in its high-end servers; LSI Logic, which, in addition to its other Sparc work is developing the superscalar "Lightning" in conjunction with Hyundai Electronics and Metaflow Technologies; Philips, which is doing implementations for embedded systems; Matsushita, which has the 64-bit "ish" Sparc; and Systems & Processes Engineering Corp, which is designing the "Brut" Gallium Arsenide Sparc with Sun and Vitesse Semiconductor Corp (UX No 316). Sun claims an installed base of some 330,000 of its own Sparc-based machines - and a further 50,000 clones: it aims to have a total of one million systems on the table by the end of next year.

...READIES V.4 SunOS RELEASE FOR INTEL iAPX-86?

SunSoft is said to be readying a version of SunOS 5.0 - the Unix V.4 version which is due in November or December - to license on Intel Corp platforms, in addition to the Sparc.

IBM-APPLE: MARKET FORCES OVERCOME COMPANY CULTURES

Lewis D. Brentano - vice president, InfoCorp

IBM and Apple's joint venture announced on July 3rd (Table 1) is clearly a big win for OSF and Motorola. It should keep IBM and Apple very competitive in the worldwide market but won't produce significant market share gains. Losers would be Motorola 88000-based desktop suppliers if there were any.

Product	Features	Timeframe*
1. Object Oriented Layer above OS for development/execution on X86 (OS/2), 680X0 (MAC) and RS/6000 (AIX) systems	Limited backward compatibility; forward compatibility; 90's technology	1994-95
2. Enhanced AIX to support MAC interfaces and programming as well as Motif from OSF	OSF/1 extended with Macintosh functions; an upgrade of Apple's existing AUX (SVR 3.2)	1993-94
3. Power PC RISC microprocessor version of RS6000 chip-set	Reduces 5 chip RS/6000 to 1 chip; expected cost reduction to \$100 per chip in quantity 1000; Motorola to design and manufacture with at least .5 micron feature size; might be desktop size only	1993-95
4. Better SAA connectivity for Apple Macintosh		1992-93

*InfoCorp Estimates

INTRODUCTION

IBM has an estimated 14% share of the personal computer market and 12% share of the workstation market in 1991; combined with Apple's 9% share of the PC market in 1991, a joint effort could produce 50% of the PC market and 30+% of the workstation market on one object-oriented user environment by 1995, supplied by IMM (International Macintosh Machines). Such a scenario is possible as a result of the IBM-Apple joint venture, but unlikely in our opinion. Nevertheless, the IBM-Apple joint effort is one consortium that must be reckoned with and if it can deliver its promises on schedule will move Unix solidly into the PC market and make the RS6000 the number two microprocessor CPU worldwide.

Table 2 presents our view of the strategic alternatives that can result from this joint venture. We believe alternative one is unlikely because market dominance (i.e. 50% market share) cannot spring only from an object-oriented user environment and a fast RISC chip - distribution channel strategies, application availability and migration, installed base size and loyalty, and cost of manufacturing must also be considered in forecasts. The IBM-Apple effort does not address these last four areas. In addition the 'openness' stressed in the companies' press releases precludes either Apple or IBM from maintaining serious differentiation from clone or OSF/1-based system manufacturers for any length of time. We also believe alternative number three is not likely. Although past IBM joint ventures have not fared well, others have worked, most notably IBM-Microsoft from 1981 through to 1989 (until the O/S2 imbroglio). Culture differences between IBM and Apple have been raised as major impediments to a joint venture's success; yet Apple is really not very different from Microsoft and good managers are what make joint ventures work, not company culture. There are good managers at both IBM and Apple that can make the joint venture work. There is always a risk of schedule lapses in this joint effort (common to every leading manufacturer), and we account for this possibility with our 30% likelihood of alternative three.

TABLE 2 - KEY ISSUE: WHAT'S THE MARKET IMPACT OF THE IBM-APPLE JOINT VENTURE? ALTERNATIVES:

- | |
|--|
| 1. IBM and Apple will dominate the PC and workstation market by gaining market share well beyond their current 23% share (10% likelihood). |
| 2. IBM and Apple will maintain strong positions in PCs and develop strong positions in Unix workstations; the RS6000 chip will be number two behind the X86 from Intel in unit shipments (60% likelihood). |
| 3. Like other IBM joint ventures (i.e. IBM-Rolm) this will have little market impact (30% likelihood). |

Alternative two is most likely for several reasons:

- 1 - Even if the object-oriented software never materialises, the AIX extensions and Power PC products are important enough to help IBM and Apple maintain their strong (but not dominant) positions.
- 2 - The enhanced AIX (really Apple's AUX upgraded to OSF/1 or 2 from its current System V Release 3.2 base) should be a winner since it will have Macintosh application portability as AUX does. This brings five thousand or so Macintosh packages to the Unix user with a Macintosh or MOTIF interface.
- 3 - The RS6000 is a strong technological product, early in its learning curve - Motorola is a perfect (maybe the best) choice to create a .5 micron feature size (or less) single chip version. The Power PC chip could well outperform the 1994 vintage X86 offering by a substantial margin.

For these reasons we think the IBM-Apple joint effort will succeed. Some might argue its success will give IBM and Apple dominance on the desktop, but this ignores the competitors each faces, who also can bring formidable products to the market. The best example is Hewlett-Packard who already has the fastest single chip microprocessor CPU in the HPPA, which is 30-40% faster than IBM's 5-chip RS6000 today and already has a joint venture with Sun on a common object-oriented user environment and offers the forward compatible New Wave operating system environment on the X86, 680X0 and HPPA. DEC and Compaq are also allied via ACE, and in a similar timeframe as IBM-Apple will deliver X86 and MIPS forward compatible operating environments with OS/2 NT and Open Desktop. As a result IBM and Apple, whose joint effort we believe has a slight edge in deliverable features, may gain slight market shares over today, but nothing that will drastically change the picture as of 1991.

MARKET IMPACTS - UNIX SYSTEMS

This joint effort will effect Unix desktop system markets since it includes IBM, the number three market share supplier of workstations for 1991. The key factors in this impact are the Power PC and enhanced AIX. Since the delivery timeframe of product is 1993-1995, this impact is definitely long term in nature. The Power PC chip (see Table 3), will create a low-cost RS/6000 system and a very high-performance Apple product. InfoCorp expects IBM to be a large volume workstation supplier, second to Sun and even with or slightly ahead of Hewlett-Packard in market share by that time since a Power PC type of chip was expected from IBM before the joint effort. The Power PC on an Apple product will put the company in a position to compete for market share in the Unix workstation arena, something we had not anticipated. If the chip is available on schedule with the right performance (see Table 3), the result will probably be an Apple plus IBM share greater than Sun and make the RS6000 CPU microprocessor the leading volume RISC CPU by 1995 - a position the SPARC CPU maintains today. In the unlikely event that Apple switches its entire product line of Unix and non-Unix systems to the Power PC we would expect the RS6000 to be the computer industry's number two volume CISC or RISC CPU behind Intel's X86 family, supplanting Motorola's 680X0 family.

	RS6000 - 1991	POWER PC
CPU chips	5 (2 opt. caches)	1 (2 opt. caches)
Feature Size	.8 micro	.5 micron min
Clock Rate	20-40 MHz	50-60 MHz
Minimum MIPS Performance	30	'92 '93 '94 '95 40 52 68 90
Transistor Count	2m logic 3-5m memory	3-5m
Pricing	\$800-\$1,500 qty 1000	\$100 qty 1000

Considering the AIX enhancements we see reinforcement for the market share changes due to the Power PC chip development. Given the timeframe of the AIX enhancement (to have Apple's AUX/Macintosh functionality) this joint effort appears to really be an enhancement to OSF/2 (which will subsume AIX by 1993-1994 in our estimates). A full conversion of AUX to OSF/2 plus Macintosh would create an operating system that could run AIX and OSF applications (now nearly 2000 in number) plus all Macintosh applications (close to 6000 in number) with no alteration to binary/object code or user interface. If this top end version is on IBM workstations and Apple systems it would at least guarantee IBM number two position behind Sun (and possibly make IBM number one in Unix workstations) given the suddenly richer Unix plus Macintosh application set available to IBM users. Of course this top end version will also allow Apple to offer all AIX/OSF applications (unaltered) on its systems and pull Apple into the engineering/design segment for the first time, making it a major (i.e. top five in market share) Unix workstation supplier. If Apple sticks to its current distribution channels, which don't conflict much with those of current Unix workstation leaders, this market pull will enlarge the Unix desktop market. On the other hand, attempts by Apple to utilize only the same direct sales/OEM channels used by Sun, Hewlett-Packard, IBM and DEC for Unix/VMS workstations won't enlarge the Unix market, but will distribute market share differently, at the expense of Sun and Hewlett-Packard primarily and IBM secondarily. InfoCorp considers the former channel strategy to be Apple's dominant method although some direct sales will also be used. As a result we expect the Unix workstation/desktop market to expand above our current forecasts if and when the Motorola-IBM-Apple joint effort delivers hardware and software. InfoCorp's UMSMET1991 presents estimates of this market impact. At best we would expect this joint effort to add 30% to 40% to Unix desktop shipments by 1996-1998, over and above InfoCorp's current forecast. We do not expect the object-oriented user environment discussed by IBM-Apple (Item 1, Table 1) to have a big impact on the Unix business owing to its poor definition and uncertain timeframe. This development will have an impact on the PC market and is discussed in InfoCorp's Microsystems Infoflash, "are Apple, IBM and Motorola Taking AIM?" dated July 10, 1991.

The final Unix-related impact of this joint effort is on Motorola's 88000 RISC microprocessor. We believe this joint effort signals that Apple will not use the 88000 in any future products. As a result the 88000 is not a viable CPU for desktop systems and is likely to be dropped from multi-user systems by 1994 - the end of the 88110's life cycle (we expect the 88110 to ship in volume by January 1992 and offer up to 100 MIPS of performance). Although this agreement is the long-term death knell for the 88000 as a top end CPU performance leader its production life will be quite long given such design wins as that at Ford Motor Company that will put an 88000 in every Ford sold. Since the demands for such embedded applications are very different than for desktop CPUs, we expect future 88000 microprocessors (after the 88110) to diverge from desktop or multiuser system requirements and eventually not be used at all.

	1992	1995
OSF Acceptance/Share	0	+++
RS6000 System Success/Share	0	+
RS6000 CPU Chip Share	0	+++
Motif Usage	0	+
Apple PC Share	0	0
Apple Workstation Share	0	++
IBM PC Share	0	0
OS/2 Usage	0	0
88000 Usage	-	---
Microsoft Application Business	0	++
Microsoft OS Business	0	-
Sun & Sparc Market Share	0	--
Mac/Unix Integration	0	++
Mac/SAA Integration	+	+++

0 = No Impact

- = Negative Impact

+ = Positive Impact

Number of symbols indicates increasing degree of impact

CONCLUSIONS

The IBM-Apple joint venture has a big 'if' associated with it - whether the three major new products can be delivered on time. If the promised products are delivered there will be a few short term effects (i.e. by 1992), but the long term effects will be as summarised in Table 4. The object-oriented technology product has the biggest market window (and lowest impact on the Unix systems market); 1995 is an acceptable first customer ship (FCS) date. The AIX enhancement (AIX+MAC) has the shortest time requirement and biggest Unix market impact; 1993 is the acceptable FCS date. The Power PC has a moderate Unix system market impact and its timeframe is flexible, based on performance delivered (see Table 3) - the later it is the faster it must be. There is a good chance (we estimate a 70% likelihood) that the three products can be delivered by 1994 and make the joint effort successful. There are two major risks in this work, however. The first is whether the object-oriented user environment can be created and be cost effective for PC and workstation systems in terms of CPU performance and memory size requirements. Until more details are available on product direction this risk cannot be assessed any further. The second risk is whether the Power PC chip can actually be manufactured with acceptable yields and performance. We believe that at least .5 micron feature sizes are needed and the resulting chip would have 3 million to 5 million transistor equivalents - both requirements necessitate major advances in semiconductor process technology that as a worst case may not be production ready until 1995-1996. If this worst case transpires the Power PC is at risk of being too slow or obsolete.

These are serious risks, but the rewards of a successful joint venture to IBM, Apple and Motorola are significant also. IBM stands to maintain its strong market share in the face of tough competition in the PC market, gain share in the Unix workstation arena and make an IBM CPU the defacto RISC standard. Apple can also maintain its market share in PCs, gain a top five position in Unix workstations and make the Macintosh user interface a defacto standard for PCs and Unix workstations. Motorola may be the biggest winner - it will become the number one RISC CPU manufacturer and whether Apple chooses to stay with the 680XO CPU in its products or switch to the Power PC for all systems, Motorola will have a strong number two position behind Intel for CPU microprocessor market share for CISC and RISC combined.

unigram X

The Weekly information newsletter for the UNIX ® community worldwide

Canada's **Elsid Software Systems** this week will introduce what it calls the first true real-time spreadsheet, running under X-Windows and the Lynx' real-time OS. The company says it redesigned its Ripcam product from the ground up, producing version 2.2 and maximising its performance. Elsid says the new spreadsheet is real-time at every layer from the kernel to the application to the user interface. Elsid says it differs from other similar applications in offering full-duplex real-time communications in both data and control sequences and in both passive and active modes and real-time graphics.

Robert Kavner, currently heading up AT&T's data systems unit is now to head the company's Communications Products Group - a business with a \$6,000m annual turnover, but which has been reportedly losing \$200m a year on office private branch exchange products: Kavner will also put together a venture capital unit called AT&T Development Corp to fund the establishment of new businesses exploiting new technology developed by Bell Labs; meanwhile, he will continue to supervise the joining together of AT&T Computer Systems with the NCR Corp prize, but the job of heading up the combined computer operations has gone to NCR's Gilbert P Williamson.

For those that are counting, **IBM**, not one to put all its eggs in one basket, has announced support for eight different personal computer/workstation operating systems: MS-DOS, Windows 3.0, OS/2 2.0, Penpoint, AIX, AIX-A/UX, Patriot Partners and the object-oriented stuff it'll produce with Apple in conjunction with Patriot Partners.

Last week's story about **Ashton-Tate** going to **Borland** set one veteran to reminiscing about how Ashton-Tate, which has been shipped around for years, almost got sold to Lotus back in 1985: the companies were within a hair's breadth of releasing the story to the press but at the last minute the Ashton-Tate board bucked company chief Ed Esber out of the driver's seat. Supposedly the price was \$11 a share, which our source remembered as being awfully inflated.

Supposedly **Sparc International** is going to lower the cost of some of its services because it's making too much money: it is a non-profit-making organisation after all.

NCR has delivered its 100,000th Tower.

DEC isn't expected to formally announce its Maspar product line until later this month but the DEC group responsible for the beasts, which will be about 30-men strong when at full strength, has already done 100 presentations and is said to have sold some systems already: Maspar, which reckons it can grow up to be a billion dollar company someday, expects to realise a third of its revenues from DEC's efforts. Maspar say its machine's performance will move from its current 25,000 MIPS and 1.3 GFLOPS to 200,000 MIPS and 5 GFLOPS at the end of 1992.

Cambex says it has the first 5Gb 8mm tape drive for the RS/6000, its Certainty 6800-90, listed at \$9,950, and a lower end 2.5Gb 6800-80 going for \$5,750, less than the \$6,915 IBM is asking for its own 2.3Gb product: the 6800-90 does not use data compression.

Progress Software, the 4GL RDBMS company has filed to go public with an initial offering of a million shares priced between \$20 and \$22: Proceeds are for general corporate purposes including working and possible acquisitions.

Unix System Laboratories is getting sick and tired of explaining to the press that what **NCR** and **AT&T** do about Tuxedo versus **Top End** has nothing to do with **USL**'s unflinching support and determination to sell Tuxedo to as many people as possible - particularly in view of the fact that five of its investors are backing Tuxedo to the hilt. The press corps' continuing failure to understand the distinction between **AT&T** and **USL**, since it's been spun out, may compel **USL** chief **Larry Dooling** to write a letter to his customers reiterating **USL**'s position on Tuxedo.

NCR has, however, taken over some 2,000 **AT&T** Computer Systems sites using Tuxedo - doesn't it need an interface to **Top End**?

NCR Corp and **Informix Software Inc** have announced integration of **Informix On-Line** with **NCR**'s **Top End** transaction processing system. **On-Line** was designed to take advantage of **Unix** multiprocessors and enables users with **Informix-Star** to share data from remote database servers transparently. **NCR** has other **Top End** database pacts cooking.

Sun's Sparcstation 2, which debuted in November, (UX No 308), started at \$15,000 - £11,000. The new workstation models - see front page - with 32Mb RAM, 424Mb disk and 19-inch monochrome monitor start at £13,300; with 32Mb RAM, 424Mb disk, 16-inch colour monitor and **GX** accelerator it is £15,900; and with 32Mb RAM, 19-inch colour monitor, 424Mb disk and **GXplus** accelerator it is priced at £19,300. **Sparcserver 2** configurations, with 32Mb RAM and 424Mb disk start at £12,400. With 32Mb RAM, 19-inch monochrome screen, 1.7Gb disk, 2.3Gb tape and **SunCD** it costs £20,550; and with 32Mb RAM, 19-inch monochrome monitor, 3Gb disk, 2.3Gb tape and **SCSI** adaptor, the price rises to £29,500.

Chantal Systems has developed a **RAID 5** product implemented as an extension of its **Paragon I/O** software: The **Redundant Arrays of Inexpensive Disks** technology improves data integrity and performance. Implementations are available for **Interactive 2.2** and **4.0**, **AT&T Unix 3.2.2**, **SCO Unix 3.2.2** and **SCO Xenix**.

Four-year-old Maxspeed Corporation out of **Forster City, California** says it has enhanced its **MaxStation** high-speed graphics workstation to support **SCO Unix** and **Open Desktop** so that 16 users can be linked together via **RJ-45** telephone cable to run **Unix** applications from a single **386/486** cpu, a cost-effective approach.

Concord, Massachusetts-based Stardent Computer Inc now says that its **Application Visualisation System**, will be available on the **Hewlett-Packard Apollo 9000 Series 700** workstations in the fourth quarter: **Application Visualisation** enables users to apply visualisation, graphics and imaging techniques with out graphics programming; it costs \$4,950 for a single user licence.

Marlborough, Massachusetts-based Sequoia Systems Inc has completed its agreement under which **Sumitomo Electric Industries Ltd** becomes a non-exclusive reseller of all **Sequoia's** current and future fault-tolerant **Unix** boxes in **Japan** and some other countries. **Sumitomo** is still negotiating manufacturing rights.

And consortium fever is obviously still epidemic and industry loner **Hewlett-Packard** has caught the bug along with everyone else: It's working on putting one together for its **PA RISC** allies **Samsung**, **Hitachi** and **Sequoia** but won't unveil it until later this year when it expects to have a flock of other licensees, **OEMs** and software companies to add to its otherwise thin ranks.

San Diego-based RDI Computer Corp cut the tag on its **BriteLite Sparc** laptop by 7.5% to \$10,000 and now offers a second internal 120Mb disk as an option. It costs \$925 to add the new disk and bigger power unit.

Following the **AT&T Unix V.4 port UHC Inc** did for it on the **PS/2** to enable it to win the **KMart** stores order in the **US**, (**UX No 336**), a third-party is rumoured to have done a similar port for **IBM's PS/2** systems in the **UK**.

Just how close is **Novell Inc** to **IBM Corp**? **President Ray Noorda** told our sister paper **Computergram International** that the extent of his company's involvement with the **IBM-Apple Computer Inc** joint venture has "yet to be seen" - currently **Novell** already works closely with both **Apple** and **IBM** and **Noorda** said that these relationships "may be transposed to the developing relationship between **IBM** and **Apple**": **Novell** vice-president of marketing, **Darrell Miller**, added obliquely that **Novell** has already had considerable success as an integrator of **MS-DOS**, **Mac**, **OS/2** and **AIX** desktop operating environments; **Noorda** also said that long term there will be no distinction between a networking operating system and an ordinary operating system, there will simply be one major operating system with various components, but it was unclear whether he meant **Apple's** planned **Pink** or a **Novell** project.

Unisys Corp has laid off about 400 more employees in its continuing efforts to cut costs: the cuts were in its **US Information Systems** division, and were mainly in finance and administration, although some sales and engineering got pink slips and about 25 programmers and data-processing workers at the **Radnor, Pennsylvania** software development group were laid off. About 50,000 people have now gone since **Unisys** was created five years ago.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram X

29 July 1991

The weekly information newsletter for the UNIX ® community worldwide

London, July 29-August 2 1991

Number 344

NEW IBM RS/6000 GRAPHICS, VAST VISUALISATION KIT

A little earlier than expected, IBM Corp last week announced its graphics enhancements for the RS/6000, and also added a new 9333 disk subsystem for the Unix box. The new integrated colour graphics products, understood to be licensed from Evans & Sutherland Computer Corp - and thought to be ousting the Silicon Graphics subsystem it currently offers - are claimed to give a fivefold improvement in two, and an eightfold increase in three-dimensional performance. The company also launched the Power Visualisation System, announced a disk drive promotion with prices reduced by 38% to 42% on most RS/6000 drives, and cut prices on some three-dimensional colour graphics adaptors. The Power Gt4x, Power Gt4 and Power Gt3 - are internally-attached graphics subsystems connected via Micro Channel slots. An 8-bit Gt4x is \$11,700, with the 24-bit version at \$17,000 from October 25. The 9333 High-Performance Disk Drive Subsystem comes in two models, a deskside unit that attaches to 500 series models, and a drawer subsystem for 900 series rack models. They use 857Mb disks and cost from \$23,500, deskside and \$23,000 drawer, and arrive in October.

Parallel processor with 32 80860s

IBM Corp's first pass at a parallel processor, the Power Visualisation System, which costs from \$600,000 to \$2m and uses an RS/6000 as the front end has up to 32 Intel Corp 80860 RISCs as the parallel processing elements. Designed primarily to process and display data from a supercomputer, the system comes in three models - the 7245-001, which consists of an eight-processor Visualisation Server with 256Mb memory to the 003 with 32 processors and 768Mb memory. With optional features and attachments it can go to 1.5Gb memory and two full-duplex High Performance Parallel Interface channels. It can be attached to the Power Visualisation Video Controller, which provides high-resolution video capability, including support for high-definition television monitors, and to a HIPPI-attached Disk Array Subsystem with capacity of up to 170Gb. It is designed for displaying data in applications from computational fluid dynamics to measurements of natural phenomena such as seismic analysis. It uses an RS/6000 Model 530 as the front-end and can support other models of the RS/6000 on a local net running the AIX Visualisation Data Explorer/6000 licensed program. The machines are available in the US in November and are to be announced internationally in due course.

SILICON GRAPHICS DEBUTS MULTI-MEDIA IRIS INDIGO AT \$8,000

Silicon Graphics Inc duly launched its Hollywood low-end multi-media workstation last week, (UX No 342), calling the machine Iris Indigo and putting a tag of just \$8,000 - £6,800 - on the three-dimensional graphics machine. The Mountain View, California company rates the machine, built around the 33MHz version of the R3000A RISC designed by MIPS Computer Systems Inc, at 30 MIPS, and claims that it is the fastest machine available for under \$10,000. Out in September, the \$8,000 price includes 8Mb RAM, a 16" colour monitor but no disk drive, and the machine can play compact disk-quality sound and record speech with a microphone. With 256Mb disk it costs £8,500. The Indigo is an earnest of Silicon Graphics' intention to move into the mass market, and a precursor of the machines the company will build as a result of its leading position in the Advanced Computing Environment and its relationship with Compaq Computer Corp. The Indigo runs version 4.0 of Silicon Graphics' Irix Unix-like. The firm's UK marketing manager, Steve Webb, says it hasn't decided whether it will offer the ACE consortium's version of SCO Open Desktop yet "we've got to look at the functionality it will offer," he said. ACE founder member SGI says it will continue to offer its Irix implementation whether it takes ODT or not. SGI has signed up for AutoCAD, WordPerfect, Adobe Illustrator, Interleaf and Informix Wingz software for the Indigo, along with computer-aided design applications from Cadence Systems Inc and Ecad Inc, which will feature on the box next year. SGI's first UK customer is the University of Leeds' School of Computer Studies, which is switching from a DEC VAX strategy and taking 60 Indigos for its undergraduates to play with. Meanwhile, Stardent Computer Inc says it is porting its Application Visualisation System to Silicon Graphics' 4D series workstations.

INTERGRAPH TO UNVEIL C400

CLIPPER, OSF/1 SYSTEMS AT DETROIT CAR SHOW

Intergraph Corp, Huntsville, Alabama, will unveil its new range of superscalar computers based around the 50MHz, Clipper C400 RISC chip before the end of the year, (UX No 340). They'll debut in November at the annual AutoFact automotive industry bash in Detroit. The new line will comprise servers, mid-range and entry-level workstations - as yet they have no name. First to appear will be servers rated at up to 100 SPECmarks, according to Rob Owen, managing director of Intergraph UK. A company official said he expected them to be running the Open Software Foundation's OSF/1 operating system: Intergraph said last year that OSF/1 would become its sole operating system environment, (UX No 304), however other Intergraph spokespeople were not available to comment at press time. C6000 series server sites will be offered upgrades via to the new Clipper via board swap-outs, however the company says it hasn't yet figured out whether it can do the same for the low-end C2000 machines. Upgrades for these systems are more likely to come as an add-on box. Prices touted for the systems go from \$15,000 to \$80,000. The C2000 and C6000 lines are based upon the earlier C300 Clipper RISC. Intergraph is now reported to be working on parallel processing system technology with Electronic Design Systems.

DEC ADDS PHILIPS INFORMATION SYSTEMS TO ITS EURO-TROPHIES

DEC has duly come out top in the bidding for Philips Electronics NV's Philips Information Systems, and will add the company to its other big European acquisition, Mannesmann-Kienzle GmbH, which it bought late last year. DEC is paying an undisclosed sum for everything except Philips' personal computer business, Smart Card operations and dictation systems, but needless to say will leave Philips to sort out the Eiserfeld factory in Germany. The German plant was in large part responsible for the downfall of Philips, because the cost of manufacturing there made its products uncompetitive. The two most interesting elements DEC gets are the banking terminals and the Megadoc document image processing system, which is claimed to be the European market leader. It will take on the 7,000 non-manufacturing employees - 620 in the UK - and gets a business said to be doing annual sales of almost \$1,000m. In addition to the transfer of the information systems activities, Philips said that it will explore further possibilities for co-operation with DEC in the areas of personal computers, components, and compact disk-interactive. At present, DEC buys its personal computers sold in Europe OEM from Ing C Olivetti & Co SpA: no doubt Philips would like to take on that business. There is little product logic in the acquisition: Philips these days buys most of its computers OEM from Motorola Inc and Sun Microsystems Inc - and the fact that Motorola failed to buy the company raises a question mark over how serious the chipmaker really is about making it in computers. Philips' OEM agreement with Motorola Computer Systems is to be continued for a transitional period.

FINANCIAL WOES AND MORE JOB LOSSES HIT INDUSTRY

IBM SALES PLUNGE 22%, 17,000 MORE JOBS TO GO

A stunning 21.8% plunge in outright sales in the second quarter to \$8,266m plunged IBM Corp to net profits of just \$114.0m, compared with profits of \$1,410m this time last year - a drop of 91.9%. Turnover overall slumped 10.7% to \$14,377m. The company now expects to shed at least 17,000 people this year - but business is declining so fast that IBM's cost-cutting measures can't keep pace - costs and expenses actually rose 3.4% compared with this time last year to \$14,377m, leaving the company with a wafer-thin operating profit of just \$355m. IBM puts the higher costs down to higher than expected acceptances of redundancy offers. RS/6000 sales were up year to year but the company had scarcely started shipping this time last year. Indicating that many of IBM's problems are still its own rather than anything to do with the market, reporting second quarter net profits up 48% at \$10.5m on turnover up 14% at \$107m, Stratus Computer Inc said that the sole area of its business that declined was OEM sales to IBM, which were down 26% - though that could in part be because IBM has not yet launched the new 80860 RISC-based Stratus machines.

DEC TAKES \$1,100m CHARGE TO SPEED RESTRUCTURING PROGRAMME

The US computer industry has written off \$2,300m in the space of two days: following Unisys Corp's \$1,200m charge last Tuesday, Digital Equipment Corp announced two days later that it was writing off \$1,100m to cover restructuring actions that started last quarter and will continue through the 1992 fiscal year, which started on July 1. It looks for the cost savings benefits from the actions to increase progressively quarter by quarter, but did not specify what specific actions it intends to take, although they are likely to include accelerated lay-offs and plant closures. DEC said it had seen improvements in efficiency, which have accelerated during "the most recent period of slowdown". "Even though we have had positive revenue growth through this time, it has not been large enough to absorb the resulting extra people and space," president Ken Olsen said. "It always hurts to downsize, but that is the cost of improvement and efficiency from design and manufacture, to marketing, selling and servicing." At the operating level - before the charge - earnings per share rose 62% at \$1.10.

MISYS SAVED BY GROWING SERVICE REVENUES - LOOKS FOR US TARGETS

While the UK's Misys Plc has seen better times, it has also seen worse and, although pre-tax profits halved to £5.6m for the year to May 31 on sales that fell 10% to £67m, chairman Kevin Lomax is coolly confident that the future holds only good things. The sales drop is attributed to the fall in product demand, while market share has actually increased, he says. Service revenues have continued to climb steadily, and account for 37% of turnover. Cost cutting has entailed some 230 job losses, and loss-making Modular Technology has been sold since the year end in a management buyout. Misys Dataller and Mentor have performed well in the insurance and construction markets, while TIS Software's performance finished the year on a strong footing, having gone through some major re-positioning with the development of the Global 3000 and Strategix product ranges (UX No 330). Team Systems and TIS General Systems suffered under the recession and have reduced their cost bases accordingly (UX No 341), whereas the Computer Solutions division - CP, CHA and Enterprise - made "encouraging progress", no thanks to the flagging popularity of the AS/400. The Networks division, comprising ICC, Zygol and CHA Communications, was not profitable overall, though performance improved in the second half despite the Gulf War and the collapse of several agents. Star Computer Services has been merged with TIS Computer services to form TIS Maintenance, which had an "excellent year". Salford Priors, Worcestershire-based Misys has been so startled by the extent of the UK recession, that it has already begun to explore the possibility of expansion abroad - North America is the company's first preference, where Misys is now testing out the managerial strengths of two or three potential acquisitions, though it cautions that nothing may happen for another couple of years.

UNISYS TAKES \$1,200M CHARGE, CUTS PRODUCTS AND 10,000 MORE JOBS

Unisys Corp stunned the market by taking charges totalling \$1,200m with its second quarter figures to leave it with a loss for the quarter of \$1,300m on declining shares; it is looking to cut its 71,000 workforce by another 10,000 people, about 14%. The company says that it has completed its previously announced re-evaluation of its business plan for 1991 and beyond, and the bad news, for a company with such a hodge-podge of competing and incompatible product lines each crying out for more research, development and support dollars, is that after a detailed review of every product, market segment, organisation and subsidiary, there will be no change in strategic direction. But according to chief executive James Unruh, "there will be fundamental change in implementation to meet the economic reality produced by continuing unprecedented structural change in the computer industry." The company intends to streamline the product line in conformance with the Unisys Integrated Information Environment architecture; reduce the number of market segments the company serves directly; sharply focus resources only where the company can add value and differentiation; and "aggressively seek technology and marketing alliances to complement in-house strengths on the most cost-efficient basis. Special charges of \$1,200m for the quarter just ended are all in the commercial computer business. The charges include \$925m for restructuring to cover a planned workforce reduction of about 10,000; product and market segment pruning, and plant and excess facilities consolidation. The charges also include \$275m to cover a write-down of goodwill and write-off of its remaining investment in Memorex Telex International NV preferred stock. The loss before the charges for the quarter was \$100.2m. Unisys expects to reduce costs by \$800m on an annual basis by December 31 1992. The moves lower the net worth requirement for the company from \$3,500m to about \$2,000m.

Non-Intel Unix to go

The four main areas of activity will now be financial services, airlines, communications, and the public sector. That implies that manufacturing and energy are in particular being de-emphasised. It will also continue to serve some other limited industry-specific areas where the geographical customer concentration and Unisys capability make it profitable to support and grow those markets. The product line is being focused on 2200 and A Series Information Hub mainframes (although no company has profitably supported two competing mainframe lines, half Unisys' banking customers in the UK use Burroughs kit, half use Sperry), Intel iAPX-86-based servers and workstations, and Unisys cheque and office imaging systems. That means that the System 80 and the Burroughs V series mainframes are on the way out, as are non-Intel-based Unix machines - including, presumably, the Motorola 88000-based Convergent Technologies successor machines, that recently saw the light of day in Japan (UX No 335). The company says that hardware and software engineering programmes are in place to protect customer investments in de-emphasised product lines by providing a clear path to follow over time in conformance with the Unisys architecture. It hopes the drastic action will bring it back to profit later this year.

HEWLETT-PACKARD IS HOPING TO SHED UP TO 2,000 JOBS

Hewlett-Packard Co is hoping to get rid of 1,500 to 2,000 more US employees by October with an enhanced early-retirement programme throughout the US company and voluntary redundancy incentives to employees in some job categories at some US sites. Both programmes are voluntary. Enhanced early-retirement will be available to US employees aged 55 or more with at least 15 years of service to the company - about 2,400 are eligible and participants will leave by October 15, with half a month's pay for each year of service to a maximum of 12 months' pay. They will also get the benefits they have accumulated under the company's retirement plans. A total of 10,000 people within specific job categories at several locations are eligible to apply for voluntary redundancy, and those that accept will get six months' pay plus half a month's pay for each year of service to a maximum of 12 months' pay - but no more than 2,000 offers will be accepted. The company expects to have to take a charge of 15 cents to 20 cents a share with its fiscal fourth quarter figures to cover the costs. It will also close most US and some foreign operations for the Christmas week, December 23 to 27; Test & Measurement employees must take three days' unpaid leave next quarter.

AT&T ADDS NEW 3B2/1000, SYSTEM 7000 MODELS FROM PYRAMID TO LINE

Although over time, AT&T Co's Computer Systems business is to move over to NCR Corp's Series 3000 line of single and multiprocessor Intel Corp iAPX-86 family machines, it promised at least one further upgrade to the System 7000 R series that uses the MIPS Computer Systems Inc RISC family and comes OEM from Pyramid Technology Corp. AT&T has duly made good on the promise with launch of the R3 Series, consisting of the System 7000 R3 and the 3B2/1000 R3, both available in September. The System 7000 R3 includes three models at from \$145,000 to \$329,000. There are two 3B2/1000 R3s, at from \$49,900 and \$74,900. There is also a new high-availability model of the R2 series, the System 7700 for phone companies that previously took the 3B/20D. This system offers duplicated equipment and "nearly 100%" protection from system failures for critical operations such as financial management systems and hotel reservation systems as well.

LACK OF FUNDS HALTS X-TERMINAL PRODUCTION AT GRAPHON...

Graphon has gone out of the terminals-making business and is reorganising itself, albeit on a smaller scale, as a technology source, selling rights to its ASCII-come-X-terminal technology to as many OEMs as are willing to buy. So far it's licensed Qume and Tatung Science & Technology with others to come further down the road, according to president Walt Keller. Graphon's reorganisation was forced by a failure to attract the venture capital it needed to pursue its course of commercialising X-terminals. It needed \$4.5 and was only successful in getting \$2.5m. Keller attributed the venture capitalists' reluctance to invest to the unglamorous nature of Graphon's chapter which he described as essentially creating the next generation text terminal geared to a market different from NCD's or Visual's. Graphon has perforce trimmed its sails, laying off 25 people over the last month. There are now about 10 left including 4 engineers and a handful of customer service reps still plugging away supporting an installed base of some 10,000 machines, Keller said. As a manufacturer it might have been a \$10m firm, as a technology supplier it's probably more like a \$1m firm without counting the royalties, Keller said. The Qume and Tatung deals, which were clinched before Graphon ceased manufacturing, could result in products by Comdex, Keller added.

...AS PICK PULLS OUT OF HARDWARE

Pick Systems, in one of the periodic flip-flops that has marked the 20 years of its existence, has again gone out of the hardware business: it's turned over PickTel, the unit it set up to distribute Pick on AT&T gear, to two of its former managers, Bill Grover, its president, and Gil Figueroa, former executive vice president of Pick Systems itself, to run independently of Pick. Pick Blue, once claimed on paper to be IBM's largest reseller of RTs, now only exists on paper, according to Pick vice president Steve Kruse, its 120 dealers turned over to other IBM-independent RT resellers such as Dickens Data and Ultimate. Kruse attributed the decision to refocus on software in part to the clash of cultures between box shifting and programming. Kruse says Pick won't cut any more exclusive licensing deals or provide source code to its resellers any more in an attempt to make its business more horizontal and far-flung.

IBM DULY CONTESTS AT&T's TMAC VICTORY

As anticipated (UX No 343), IBM's Federal Sector Division has duly filed its protest seeking to overturn the US Treasury Department's \$1,400m Treasury Multiuser Acquisition Contract (TMAC), awarded to AT&T, who's bid came in at more than half a billion dollars above IBM's. IBM told the General Services Administration Board of Contract Appeals that its bid "offered the best value to government and taxpayers", and that sixty percent of IBM's sub-contracts were to go to "small and disadvantaged firms" - one of them the ailing Arix Corp. The bid involved some 200 different hardware and software components from 43 different vendors. IBM also said that the technical evaluation of TMAC was inconsistent with the request for proposals, with evaluators assigning technical scores only where proposals exceeded the requirements detailed on the RFP, a practice that distorted the differences between the two proposals.

MIPS OPTS FOR TEKTRONIX TEKXPRESS

MIPS Computer Systems Inc has chosen Wilsonville, Oregon-based Tektronix Inc as its OEM supplier of X-terminals, taking colour, greyscale and monochrome models of the TekXpress family. It also wants PXN thermal wax colour printers with XPrint utility.

UNIFACE MD RESIGNS AMID GOSSIP OF MARKET SHARE DECLINE

Ed Humphries, managing director of applications generation language company Uniface UK Ltd has resigned, and a formal announcement concerning the restructuring of the company will be made "in due course". The news comes amid industry gossip that the company is losing market share - it has certainly had to share its favoured status with Sybase Inc as the database company moved from its position of selling on Uniface product under the name Fast-build and instead created its own Open Systems Software programme, which also involves the rival US company Unify Corp. Sybase's Keith Dixon confirmed that the company had not sold on a lot of Uniface product recently, partly because it was building up its relationship with Unify, although Sybase's intention was to split application development sales between the two. Meanwhile Uniface has been experiencing aggressive, successful competition from Cognos Inc with its Powerhouse product, and Computer Power Pty Ltd with the Today generator from Down Under. A much publicised transaction processing system using UniFace, planned by the London-based Performing Right Society had to be re-focused recently when consultants Data Logic ran preliminary benchmarks that showed the UniFace product could not cope with the processing load. The software was eventually written using C.

SIEMENS-NIXDORF "HAVE STILL NOT MESHED"

Siemens-Nixdorf Informationssysteme AG has thought better of its plan to throw its 8890 IBMulator users to the wolves of the open systems world by trying to persuade them to migrate to Unix - at which point many might well say "yes, OK, but we'll go to competitive tender". It is now hoping to persuade what is still a significant base to move instead to Siemens' proprietary BS2000 mainframe operating system and has two migration products for the 7.000 C40, H60 and H90 models, the VM/2000-E operating environment - first on the C40, early next year for the H60 and H90, with a pilot Ni-DOS/TCP teleprocessing monitor to be ready by the end of this year. There may have been political logic in putting Siemens Data Systems and Nixdorf Computer AG together, but there was no industrial logic, because the two companies had comprehensive and hard-to-harmonise product lines in the only part of their businesses that was showing rapid growth - Unix systems, and each had a very different corporate culture: Siemens AG now acknowledges as much, saying that despite a 4% increase in orders at the nine month mark, "the two companies have not really meshed together", and that the firm continues to be a problem.

MICROSOFT SELLS 1m COPIES OF MS-DOS 5 IN 30 DAYS

Delivering yet a further symbolic kick in the shins to IBM Corp and its championing of the OS/2 operating system, Microsoft Corp's move to offer MS-DOS through retail stores for the first time with the 5.0 release, has resulted in phenomenal sales of over 1m in just one month in the US, according to the Wall Street Journal. OS/2 by contrast has sold just 800,000 copies since its launch four years ago. Demand is so strong that many stores have sold out, and Microsoft says it will take two weeks to replenish supplies. One factor is the fact that the \$100 product upgrade is being discounted to as little as \$40 in some stores.

INTERACTIVE DOES SunOS PORTS FOR SPARC BUILDERS

At last week's Sun Expo show in San Jose, California, SunOS distributor Interactive Systems Corp announced that it will be doing versions of Sun's operating system and SunView graphical software for Sparc-builders Fujitsu Microelectronics, Tera Microsystems and Weitek Corp. Fujitsu's advanced microprocessor division will make the software available to OEMs using its 33MHz and 40MHz Sparc chip set. Tera will offer the port for its low power consumption microCore chip set, which it claims incorporates all the functions required for building a Sparc workstation with the performance of a Sparcstation 2. Interactive and Weitek have also developed Interactive's Pix'elerate to run on the chip-maker's W8720 graphics accelerator, which is designed to provide graphics performance comparable to Sun's proprietary GX graphics solution: it's out in the third quarter.

NOVELL AIMS FOR MULTI-O/S VERSIONS OF NETWARE

Novell Inc's reasons for becoming the largest investor in Unix System Laboratories are becoming ever more apparent as reports circulate around the industry of the company's plans to base its future strategy on Unix networking. The company has recently restructured to create a new business unit to concentrate on Unix and wide area networking, under the control of Novell executive Kanwal Rehi. And details of a new plan to develop a single version of NetWare to run under Unix, DOS and OS/2 are indicative of the company's determination to move further towards "open" environments. While Novell's Portable NetWare plans are now well advanced, new releases of NetWare will be working towards providing a single set of source code, according to US press reports. The new implementation, using C++ and object-oriented techniques, will run in native mode, as opposed to the emulation approach taken by Portable NetWare, and will therefore offer faster performance. It will also mean an easier upgrade path for DOS and OS/2 customers. Meanwhile, Novell reached a definitive agreement to acquire Digital Research Inc a few weeks back, obviating the need for Novell customers to buy anything from Microsoft. It said the agreement was in response to customer demand for tightly coupling network operating system software in with desktop and host computer operating systems.

ORACLE ADDED TO NCR's TOP END INTEGRATION EFFORT

NCR Corp is pushing ahead with its development plans for the Top End transaction processing monitor, and after last week's agreement with Informix Corp, it has now announced the integration of Top End with the Oracle database. A combination of Oracle and Top End sees transactions completed via a single point of coordination, say the two companies, ensuring data integrity and high-speed completion. The Oracle RDBMS acts as a resource manager to control database information, with Top End providing communications and transaction control for complex transactions generated by applications. Communications will eventually take place via X/Open's XA interface, but it's early days yet, and meanwhile NCR has implemented something called the XA "vener", until full XA compliance from both products is completed. Aside from Informix and Oracle, Top End is being integrated with the Teradata database, while NCR has also been working with Sybase for some time, and has started negotiations with Ingres Corp. An NCR spokesman said that communications and interoperability between Top End and other TP monitors - presumably AT&T's Tuxedo in particular - was a goal of both X/Open and NCR, but he would not comment on speculation that a Top End interface for Tuxedo is on the cards, a particularly urgent requirement given NCR's inheritance of some 2,000 Tuxedo users (UX No 343).

UNIX INTERNATIONAL OPENS BUSINESS SUPPORT CENTRE IN TOKYO

Unix International Inc opened what it is calling the world's first official porting centre last week. Based in expanded offices of Unix International in an area 15 minutes from the central business district of Tokyo, the Unix Business Support Centre offers the opportunity for independent software vendors to test-run or demonstrate their software in a multivendor environment with a total of 12 machines from 13 hardware vendors, linked in a local network so that converting an application from one machine to another is facilitated. In announcing the opening of the Centre, Yumio Imamura, managing director of Unix International Asia-Pacific, said that this was the latest step in a campaign which began in May 1990, with the aim of increasing the number of applications running under System V.4. As well as free use of the environment, the Centre provides technical information and support from vendors in converting to System V.4 and will act as marketing catalyst to the promotion of Unix business in Japan. The Centre will be made available to Unix International members, software companies recommended by members, and other companies and organisations recognised by Unix International - defined to mean groups such as a fledgling user group to be called the Unix Business Association, currently being formed. There are few restrictions on use of the Centre, although it is primarily for testing in a new environment rather than intended for the actual carrying out of conversion work itself. Maximum use of the Centre will normally be for two days at a time.

CRAY RESEARCH REJECTS IDEA OF A PARALLEL PROCESSING PARTNER

Cray Research Inc has decided that although it will have to play catch-up, massively parallel supercomputing is too important to its future for it to rely on any partner to give it a leg up into the business. There had been informed speculation that it might do some kind of strategic deal with Bolt, Beranek & Newman Inc on the Cambridge company's massively parallel Motorola Inc 88000 machines. Cray now says that although it may buy software, or one or more machines from Bolt, Beranek, its machines will essentially be all its own work. It plans to have a first generation development system ready in 1993: it will use microprocessors - presumably off the shelf - and will be designed to work closely with the Y-MP family. It is being designed to deliver 100 GFLOPS, and Cray is targeting successive models in 1995 and 1997 that will take the line into the TeraFLOPS performance range.

AICORP TAKES KBMS TO UNIX

AICorp Inc of Waltham, Massachusetts took the opportunity of the American Association of Artificial Intelligence trade show in Anaheim, California to demonstrate the first Unix version of its KBMS Knowledge Base Management System. Shown running on a Sun Sparcstation, the product should be commercially available later this year. To prove how important the Unix market is to the company AICorp has formed a Unix Development Council, a steering committee comprised of prominent users of the company's KBMS product, to assist the firm in designing and testing KBMS for the Unix environment. The committee will focus on KBMS for Sun Sparcstation, the IBM RS/6000, DEC's and Hewlett-Packard's implementations of Unix as well as other System V environments - initial members of the committee include representatives from General Electric and Barclays Bank. Meanwhile, a Microsoft Windows 3.0 version of the software was launched: shipping in November, it costs \$8,500.

TELESOFT TAKES PLUNGE WITH RISCADA DEVELOPMENT SYSTEM FOR SPARC

San Diego-based TeleSoft Inc has announced RISCAda, an Ada development environment that operates on high-performance RISC workstations. Available later this year, it includes a compiler that uses TeleGen2 Ada Optimising Compiler Technology, and a set of graphical user interface-based tools for Ada program development. The first member of the RISCAda family is RISCAda/Sparc for workstations and servers from Sun Microsystems Inc. RISCAda/Sparc compiles typical applications to unoptimised code at over 2,450 lines per minute and generates optimised code at over 1,650 lines per minute on a Sparcstation 1. TeleSoft's EZ-Ada is claimed to save development time while making Ada development simpler since it includes graphical menus in which a developer can specify Ada tools and options to be invoked. Once the developer picks the desired options, the appropriate command is automatically invoked. EZ-Ada integrates with TeleSoft's real-time cross compilation tools, including the recently announced Triad System which includes a facility for automatic programming. Programmers can use EZ-Ada to select a Triad System real-time support package, function and appropriate parameters. EZ-Ada then generates corresponding source code for the Ada application to use these services.

TERA COMPUTER WINS \$7m US FUNDING FOR ITS 64-BIT PARALLEL PROCESSOR

Two-year-old Seattle, Washington parallel supercomputer start-up Tera Computer Co has won more than kind looks from the US Department of Defense Advanced Research Projects Agency. The Agency is translating its interest into hard cash, putting up \$7.5m to help fund the development of the company's first machine. Tera has a new approach to massively parallel processing and hopes to have a prototype delivering 300 GFLOPS ready during 1993 (UX No 240). Tera expects complete development of the prototype system to cost about \$30m: it is to be a 64-bit, shared-memory parallel computer with a family of models incorporating up to 256 processors. Each processor will have a peak performance in excess of 1 GIPS and 1 GFLOPS. Tera claims that its shared-memory architecture will make it easier to develop software for parallel processing.

OPUS HITS OUT, BUT STORY IS

BACKED BY LEADING CALIFORNIA DAILY

Thomas Lacey, vice president of marketing at Opus Systems Inc, Irvine, California, has written to Unigram.X complaining that last week's piece about the firm's direction in the Sparc-compatible marketplace - "Opus re-defines Sparc strategy as president goes in coup" - (UX No 343) "gravely misrepresented Opus' position in the Sparc market in several instances." Lacey denies that his firm is "backpedalling" on its commitment to move Sparc compatibles and says "we continue to both ship our 5120 Personal Mainframe Sparc workstations and fully support our installed base of more than 2,000 customers." He states that the price of its personal computer Sparcard add-in board "has not changed since its introduction," and furthermore, claims that former president Mark Johnston left Opus "on good terms." However a completely separate piece, published on the morning of July 18 - after Unigram.X had been put together in London - in the California daily San Jose Mercury News, re-iterated concern that all was not as rosy as it might be at Opus, with a news story entitled "Opus backs off battle with Sun, casting doubt on Sparc market." It reported that Opus had "given up its efforts" and that "the strategy shift - which resulted in the departure of the company's president - calls into question the viability of Sun's vision of a Sparc marketplace." Confirming what Unigram.X reported that week, that Opus had changed its strategy after pressure from its venture capital backers - and that this was at least in part a reason for Johnston's departure - the former president was quoted as saying "Opus changed course because the venture capitalists who had just contributed to an \$8.5m financing round wanted to see a quicker return on their money than would have been possible" (with his strategy). Lacey admits that there has been "a refinement in our plans - a shift to focus even more effort on our value-added solutions," but says that it is unfortunate that the move "was interpreted as a major upheaval in corporate strategy and worse yet, a failure. The fact is that the Sparc market, like any young, dynamic and growing market, changes. Companies who succeed in such a market are those who refine and adapt to changes in the marketplace while retaining their commitment to supply solutions and to support their customers. Opus is in the Sparc market to stay, and we intend to grow and flourish with the market and with our customers."

USL SENDS OUT CHALLENGE TO BREAK SECURE UNIX V.4 ES

Unix System Labs is putting out a challenge to systems vendors and major corporations to test out its new secure version of Unix System V.4. Release 4.1 Enhanced Security is not the usual "add-on" approach to security, claimed USL, but fully integrated security built into the operating system itself. The challenge, available initially to limited beta site vendors and end-users, will eventually be available to all Unix V.4 source code customers, and will allow the participants early hands-on experience with computer security technology, said USL. The release is a central part of Unix International's Corporate Hub strategy (UX Nos 317, 331), which encompasses open, distributed transaction processing, standards-based networking, and other data processing and management capabilities wanted by corporate MIS organisations. Participants will be given dial-up logins on an AT&T 3B2 computer running the new release and challenged to break the security on the system by reading or writing information to a secure file, executing programs or changing read/write permissions. SVR4.1 ES source code is generally available to industry vendors, but only for users of the 3B2. Intel 386/486 versions and others will be announced "at a later date".

INTERGRAPH APPOINTS HEADMAN AT DAZIX, SAYS UNIFIED CAD/CAM SOFTWARE

WILL RUN UNDER MOTIF ON SUNS...

Intergraph Corp has - after an executive search - appointed its own vice president of product development and manufacturing, Dr. John Thorington, to head-up Dazix, the electronics design automation operation formed from its acquisition of the assets of Daisy Systems Corp at the end of last year for \$14m. Daisy filed for Chapter 11 bankruptcy in May last year, after its \$200m acquisition of Cadnetix Corp didn't work out. Andy Smith, managing director of Dazix in the UK, says "this is the last purchase in the chain. Dazix is not up for sale - \$14m is a steal." Dazix is in the process of rationalising and integrating the products it has inherited from Daisy, Cadnetix and Intergraph. It supplies CAD/CAM software solutions on Sun Microsystems Inc platforms, and although it is also porting its applications to Intergraph's RISC computers, it does not expect the Clipper systems to make up more than 10% of its business in future. Indeed Intergraph has already signed up for \$150m of Sun systems in a three-year deal (UX No 321). Dazix, which claims an installed base of 13,000, will be offering the new IPX and ELC workstations Sun announced last week (UX No 343). However, in line with parent Intergraph's Open Software Foundation membership card, it is porting applications to run under the Motif graphical user interface, which it will offer on the Sun boxes in preference to Open Look by the end of the year. As far as conceptual design software goes, Dazix has subcontracted UK firm Cosoft, Addlestone, Surrey - in which Intergraph has a stake - to merge its ACE product with Intergraph's own Design Engineer and Cadnetix's CED. The resulting product, ACE+, will be out later this quarter. New layout and router software will also feature around this time. A new digital and analogue simulation software environment will be similarly forged from a number of existing products. Dubbed Foresight, it'll be out in the first quarter of next year, and the work is again being done by a firm - although this time in the US - that Intergraph has a stake in. A unified design layout product, Berlin, is scheduled for the second quarter of next year.

...AS CADENCE AND SIEMENS FORM EUROPEAN EDA VENTURE

Meanwhile, Dazix CAD/CAM competitor Cadence Systems Inc, San Jose, California, has teamed with Siemens Nixdorf Informationssysteme AG: the two are to combine their respective European electronic design automation operations in a new venture and sell joint solutions. The resulting outfit, Cadence Europe GmbH, Munich, will be jointly-owned, though Cadence will have a one-share majority. Its products will be based upon Cadence's Design Framework II.

HP HAS SUN SNMP AGENT FOR OPENVIEW

Hewlett-Packard Co has announced HP OpenView Sun SNMP Agent for Sun Microsystems Inc's Sparc environment. HP claims the SNMP - simple network management protocol - software, will help Sun users overcome "many of the headaches Sun users experience in managing complex multivendor networks." Sun does not currently offer a vanilla SNMP agent to connect Sparc systems to SNMP networking environments - it uses remote procedure call proxies to satisfy SNMP requests. The agent is aimed at HP's 4,000 OpenView sites which may want to integrate Sun machines into their networks. Prices start at \$400.

NEW MACHINES, US BASE FROM PHILIPS

Of those parts of Philips Information Systems division that are not going over to DEC, see front page, it looks like the Smart Card operation will move into Philips' Security business, whilst informed thinking has the Vienna-based Dictation Systems operation landing on the Personal Information Products - PIP - division's plate, the personal computer and CD-ROM side of the company. Indeed Philips, which claims its personal computer business is the eleventh largest in the world now - and shifting some 400,000 units per year - is aiming to break into the top five of the market by 1994. The effort begins early next year with a new multi-media box set to come in the retail end of its range, followed by a planned series of notebook computers which will be built at a manufacturing plant currently under construction in Taiwan. PIP's Netherlands-based headquarters will get a US West coast base in the Autumn, together with new sales and technical teams.

unigram X

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Motorola Computer Systems has rationalised its international marketing division: regional management operations in the UK, France and Germany have been transferred to its international marketing headquarters in Brussels. Headed-up by John De Witte, it is responsible for Europe and the Asia/Pacific regions. Former UK European marketing manager, Dave Tanner, who was based in Maidenhead, Berkshire, has left the company.

We were casting about for a name for the IBM/Apple joint venture. Something that would crystallise the combining of their cultures. And it's so obvious it practically jumps up and bites you. They're the Big Mac of course.

RDI last week asked for, and got, a week's extension on the hearing that will decide whether that temporary injunction it's operating under now becomes permanent (UX No 343): the California federal courts slapped a temporary restraining order on them barring them from marketing Companion, the technology that gives RDI's Sparc laptop Britelite its Mackintosh compatibility, because of a copyright infringement/trade secrets lawsuit brought by Xcelerated, Companion's alleged developers. The new hearing date is July 29th.

This technobabble is getting difficult to wade through: The thing IBM and Apple plan to create is not so much an operating system as it is an "environment". Apparently that means that their object-oriented software wouldn't be a full operating system that could run independent of an underlying operating system like AIX. Instead it would sit on top of the actual operating system and be the primary user interface in the process. Is all that perfectly clear now?

Tatung Science & Technology has upped its Sparc clone to 25MHz, made it SCD 1.1 compliant and changed its family name to Compstation. The new S-Bus unit sells for \$8,000 in a basic configuration that includes a diskless 25MHz model with 8MB RAM and a 19" colour monitor reportedly yielding 15.8 MIPS and 1.75 MFLOPS of floating point performance with 10.25 SPECmarks.

Graphical Software Technology, Hermosa Beach, California, has introduced a toolkit for building graphical user interfaces for Unix applications. Xtra XWidgets supports X-Windows, OSF/Motif and Open Look, but is claimed to be able to enable interfaces to go beyond boxes and text options, with an object-oriented library of pie charts, bar graphs, icons and hypertext: prices start at \$800.

According to reports, the Open Software Foundation will finally begin shipping the basic components of its Distributed Computing Environment on September 17: DEC, IBM, Groupe Bull SA, Hewlett-Packard and Stratus Computer are expected to announce the availability of DCE on their operating systems that day.

In a series of briefings last week in the US, IBM explained that it sees the Power PC chip family having three tiers targeting: notebooks and entry-level desktop machines, mid-range desktop and a high end consisting of servers and mid-range workstations; furthermore, IBM plans to launch a standards group to promote the chip.

Microsoft has recruited Apollo co-founder and NCS designer Paul Leach as its director of future systems.

Group Bull SA has won a contract worth the equivalent of \$13m to supply a systems integration package to the Australian Government Insurance Office: Bull will provide local area networks for 130 branches of the Sydney-based insurer.

A meeting between Unix International, the Open Software Foundation, the Network Management Forum and the Object Management Group last week led to an agreement to collaborate on defining standards for object technology: the Object Management Group is much farther down the road to defining a standard for an object model than anyone else so it seems likely that this will ultimately prove to be the model adopted for a single standard Managed Object Design that each consortium will use in its implementation of network and system management environments; meanwhile negotiations between the four continue.

Bull and Timeslice, a London-based value added reseller, have won a £1.1m order from lawyers, Hammond Suddards, for a Unix-based legal accounting system that both ICL and IBM tendered for: the system comprises four dual DPX/2 340 Unix machines and Timeslice's Lawman accounting and time recording software, the Actionman debt collection and marketing database plus Word Perfect; the system will be linked across two sites comprising 164 terminals and up to 40 printers.

P&O Containers Ltd says that it is in the process of European user acceptance testing for its Amdahl Unix-based inter-modal movements and costing system: the system runs on a 5880 mainframe under UTS 2.1; it runs in real-time seven days a week, and transaction volumes are expected to be between 2,000 and 4,000 an hour in business hours.

Reading between the lines, analysts estimate that compared with a year ago, IBM Corp's mainframe sales were down 30% in the second quarter, and PS/2 sales were down 20%.

Hewlett-Packard Co says it has enhanced the compilers for the HP Apollo 9000 Series 700 RISC workstations and servers to the point where it can claim SPECmark ratings for the Model 720 of 59.5 from the original 55.5, and of 76.8 from 72.2 for the Models 730 and 750: it says the increase in performance widens the price-performance leadership gap in between its machines and those from IBM Corp, Sun Microsystems Inc and Digital Equipment Corp; the compiler updates are being shipped to new and existing Series 700 customers free of charge, it says.

Belmont, California neighbours nCube Inc and Oracle Corp say that they have achieved performance of 1,073 transactions per second on the Transaction Processing Performance Council Benchmark B when running Parallel Server Oracle 6.2 release on a 64-processor nCube 2 to give a cost per transaction of under \$2,500; the machine had an additional 48 input-output processors controlling 205 disk drives and 56 of the processors each ran Oracle Parallel Server; Oracle founder and chief Larry Ellison is an investor in nCube.

DEC is to pay book value for the Philips Electronics NV Information Systems assets it has agreed to acquire: that is expected to be about \$300m.

Sun Microsystems Inc has gone to Seagate Technology Inc for 424Mb 3.5" disk drives, taking the ST1480 for its desktop computers: the drive has 14mS average seek time, data transfer rates of up to 25M-bits per second and embedded SCSI-2 or AT interface; no value was given for the OEM agreement.

Sun Microsystems Inc has decided to go to RSA Data Security Inc for its encryption products: its SunSoft unit has signed to license the privately-held Redwood City, California company's technology, which adds a digital signature to each message that can be read only by the sender and the recipient; the US government does not like the system and is backing an alternative one from the National Security Agency, but critics say Uncle Sam doesn't like the RSA system because it's too hard to crack, making it very hard for government agencies to snoop.

AT&T Istel Ltd has sold its first Processmarc stock control and sales order processing system on a Unix machine: the system, valued at £258,000, will run on a Data General Corp AViiON machine; the customer is Grampian Pharmaceuticals.

The Apple/IBM alliance spurred Microsoft's Bill Gates to visit Sun president Scott McNealy on July 11th, according to Computer Systems News, where the possibilities of porting NT to Sparc architectures and Microsoft Windows applications to Open Look were apparently discussed - but where would such agreements leave the ACE Consortium?

France's Commission des Operations de Bourse regulator is recommending that legal action be taken against the corporate officers of the now-defunct SMT-Goupil SA after an investigation into the micromaker's figures for the past 30 months show that the company "artificially and heavily" inflated its sales figures by including non-existent orders from the Economics Ministry, the Bank of France and France Telecom: it says that the phantom sales totalled \$35m; the company was put into liquidation with debts of \$122.5m, after making a 1990 loss of over \$70m on turnover of \$145m - down 31% from the 1989 figure.

Dell Computer Corp is to appeal the ruling issued in the English High Court Chancery Division that it must further modify its advertisements that compare its computers with those of Compaq Computer Corp by making it clearer that the Compaq prices quoted are suggested prices and are widely discounted: Dell was also fined £250,000 and ordered to pay Compaq's costs ahead of a full trial of the issue; a similar lawsuit against Dell by Compaq is pending in the US courts.

A jolly publication called the New Hackers Dictionary from Massachusetts Institute of Technology University Press notes that Digital Equipment Corp's Ultrix Unix was for a long time dubbed Buglix, but saves the most savage epithets for Hewlett-Packard Co's HP-UX implementation: outsiders, it says, call it HP-SUX, while within the comp any, there are those that wish that David Packard had got his name in before William Hewlett so that the product's official name would have carried a more scatological ring.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram X

KBN

The weekly information newsletter for the UNIX ® community worldwide

London, August 5-9 1991

Number 345

SUN STARTS THE NEW TERM WITH OPEN LOOK GAMBIT...

To show its rivals that it is still serious about the Open Look graphical user interface - and confirming that it has now delegated long-term strategic projects to its newly-founded siblings - Sun Microsystems Inc's SunSoft Inc will lead its parent into the new term with a roll-out of the tightly-integrated software environment based around Open Look that it has recently been somewhat mysterious about, (UX No 341). On September 4th, during the Sun developers' conference in San Jose, California, SunSoft will unveil what it is calling "a new software environment for distributed computing." According to sources familiar with the event, Sun's software arm will describe a "single integrated system software solution," that pulls together SunOS, Open Network Computing, X.11 NeWS, Open Windows and Open Look into a seamless, tightly-bundled package: "similar to Apple Computer Inc's System 7 in concept," was how one spokesperson described it. The project is understood to have been on the burner for some time now, and although the Unix industry at large seems to be leaning towards the rival OSF/Motif interface as a tentative de facto standard, Open Look "is not dead yet", according to Peter Dawe of Unix connectivity specialist Unipalm Ltd, based in Cambridge, UK. He believes that with this "Open-Looked" version of Unix, where the interface is fully integrated into the operating system together with all the utilities - "you'll never need to type 'more' again". Dawe says that Sun VP Eric Schmidt gave the game away a couple of years ago when talking about the long-running battle between Open Look and Motif. "We won't pull the plug on a \$100m investment", Schmidt is reported to have said of Open Look. "It doesn't take that much to develop a graphical user interface", says Dawe "so there is obviously much more to come." Although initially intended for the Sparc RISC environment, SunSoft is also thought to be considering a wider industry play and may be preparing to licence the software on other platforms, notably Intel Corp's iAPX-86 architecture: Sun has already done its homework on Intel CISC, having had SunOS running on its now-defunct 386i workstation. Other Sun sources confirmed that it is now seriously looking at the possibility of getting Microsoft Windows onto the Sparc (UX No 344), in part as a means of diffusing the Unix GUI wars.

..MULTI-PROCESSORS JUST BEHIND

Following the San Jose bash, towards the end of the same month, Sun is finally expected to unveil its Galaxy multi-processors, based upon Texas Instruments' 40MHz, superscalar BiCMOS Viking Sparc implementation, which is being touted at anything up to 80 MIPS, (UX Nos 343, 316, 305). Details of the Viking, which according to Texas is not generally sampling yet, will be made public at the Hot Chips conference in Stamford between August 26 and 27. In fact it will be Sun, not Texas, that will be presenting Viking to the assembled Chippers. As far as its long-standing opposition to X-terminal technology goes, Sun now says that it will work with X-terminal vendors to supply the things as part of client/server solutions where customers demand it. Although Sun says it will not be doing its own X-terminal - it doesn't have the sales organisation or marketing channels, let alone the inclination to slug it out in that increasingly cut-throat market - it means that the firm should now be able to compete on some of the large X-terminal contracts it has previously missed out on because of its resistance to X-terminals.

ADVANCED RISC MACHINES SETS ARM600 FOR OCTOBER

Advanced RISC Machines Ltd, the UK, Cambridge-based chip design company set up at the end of last year to develop microprocessors based upon the Acorn RISC chip - backed by Apple Computer Inc and VLSI Technology Inc as well as Ing C Olivetti & Co SpA's 80%-owned Acorn Computer plc - is preparing to unveil its first new processor, the ARM600, on October 2nd. The UK launch - US introductions will follow later - brings together all partners in the new venture, together with firms currently using the Acorn RISC that are thought to be working on desktop, laptop, notebook, board- and embedded-level products based upon the ARM600 and its successors. Active Book Company Ltd, Sanyo Electric Co, Radius Inc and Philips Communications are thought likely to figure amongst them. The ARM600 will not be physically compatible with any of the things that Apple is planning following its alliance with IBM, though future ARM-based Apple products - most likely starting with a notebook - are said to be complimentary in a marketing sense.

APPLE LICENSES DORE

- BUT FROM KUBOTA...

Apple Computer Inc is to license the Dore 3D three-dimensional Dynamic Object Rendering Environment for the Macintosh - but it has licensed it not from the developer Stardent Computer Inc, but from Kubota Pacific Computer Inc, the Santa Clara, California subsidiary of Kubota Co of Japan, the company that has been bankrupting Stardent, and seems to be progressively taking over its business. Terms of the agreement were not disclosed; the Dynamic Object Rendering Environment is a high level software library designed to enable programmers to develop complex, fully featured three-dimensional graphics applications, offering real-time interactions and photorealistic rendering. Kubota Pacific says it makes available complete source code as well as specifications for the applications and internal interfaces, which enable developers to plug in different renderers, devices and primitives. As well as Stardent kit, Dore now supports Sun Microsystems Inc, Silicon Graphics Inc and IBM Corp workstations, and also supports X-Window displays. The firm has also just announced a new version of the environment: Dore 5.0 is out next month and costs \$5,000.

...SEEN AS A COUP FOR THE ALLIANCE WITH IBM

Observers are hailing the deal struck by Apple as a tremendous coup for the IBM Corp-Apple alliance. Steve Blank, marketing vice-president at Super Mac Technologies told *Microbytes Daily* that Dore on "the RS/6000 would eat everyone's lunch," adding that "Apple has literally acquired the world's best three-dimensional graphics library. If Apple management can figure out that 3D is important, they will end up putting Silicon Graphics out of business." He noted that it was not confined to graphics and that with the libraries, a developer could write a three-dimensional spreadsheet that doesn't have to resort to linking. The new version 5.0 of the Dore library has been opened up, so that programmers can plug in different renderers, devices and primitives. The routines of the library reduce the programming time taken to incorporate primitives, texture mapping, lighting, and other graphics functionality to an application. The open architecture means that an application can be written for several machines, choosing the most suitable renderer for each.

HEWLETT-PACKARD ADDS WORKSTATION, MULTI-USER DISK LINES

One of the ways in which computer manufacturers are trying to fill the hole in their margins left by the rush to open systems is to charge outrageous prices for disk drives and other peripherals and hope that inertia will prevent most users from shopping around for plug-compatible alternatives or do-it-yourself integrations. IBM leads the way with the disks for the AS/400 and the RS/6000, and Hewlett-Packard Co is right in there with two new families of high-performance SCSI-2 mass-storage systems: one for HP Apollo workstations and the other for its multi-user systems. The new products offer a base configuration of a disk or digital audio tape drive and the enclosure has room for additional disks, DDS format tapes, CD-ROMs and erasable optical disks where supported. Three new models have been introduced for workstation systems, housed in rack-mount and floor-standing enclosures, with base configuration capacities of 677Mb and 1,355Mb. Eight new or recently introduced models are available for multi-user systems and the company says they are the first SCSI-2 multi-device, mass-storage systems with power-fail-recovery capabilities it has offered to its multi-user customers. They come in rack or floor versions with a choice of initial capacity of 422Mb, 677Mb, 1,300Mb and 1,355Mb. The new ones are the HP Series 6000 Models 670SE, 1350SE and 1350S. The new ones for the workstations are the Models 670SE, 1350SE, and 1350S with base configuration of one disk drive, power supply and space for additional mass storage for the HP Apollo 9000 Series 400 and 700 workstations and the HP 9000 Series 300 workstation. Models 670SX and 1350SX, shipping this month, are designed for the HP 9000 Series 700s and feature a 10Mbyte-per-second differential SCSI-2 interface. They can grow to over 4Gb per cabinet and up to 38Gb on the 9000 Model 750. The HP Series 6000 Models 420F, 420R, 670F, 670R, 1350F, 1350R, 1300D F and 1300D R make up the family for the new HP 3000 900 and HP 9000 800 business systems and servers. The Series 6000 Model 670SE is \$5,175, the 1350SE and 1350S, \$8,175; disk upgrade kits for them are \$4,875 to \$7,875 and tape upgrade is \$4,700, CD-ROM, \$1,250, erasable optical disk, \$5,400. The multi-user ones go from the 420F at \$4,075 to the 1350R at \$9,575. Disk upgrade kits are \$4,000 to \$9,300; tape, \$4,800, CD-ROM, \$1,400; there's no erasable optical disk.

TEAMWORK CAN REVERSE ENGINEER FORTRAN

Beaverton, Oregon-based Cadre Technologies Inc has introduced TeamworkFortran Rev, a tool for reverse engineering Fortran programs. It graphically reveals the structure of existing software, and through integration with Cadre's Teamwork family of computer-aided software engineering products, it is claimed to ease the transition from traditional engineering environments into computer-aided ones. It automatically generates Teamwork Structured Design charts from Fortran source files, and these charts can be displayed graphically in Teamwork/SD, incorporated into documentation or printed directly. Teamwork/Fortran Rev supports most industry-standard dialects of Fortran, the language extension implemented on Sun Microsystems Inc, Digital Equipment Corp, Hewlett-Packard Co Apollo and IBM Corp workstations and several mainframe and Cray Research Inc extensions. The tool has pre-processor support to assist with uncommon dialects and a published open interface between its Fortran language parser and structure chart generator for users that need to reverse engineer custom or proprietary languages; the entry price for Teamwork/Fortran Rev is \$9,700, and it is available on Sun, DEC VMS, DEC Ultrix, HP-UX, Apollo Domain and IBM AIX machines. For a limited time, Cadre will reverse engineer the first 100,000 lines of Fortran code for Sun users, free.

SYBASE CLAIMS IMPROVED PERFORMANCE FOR SQL SERVER 4.8

Emeryville, California-based Sybase Inc, in the headlines recently for the wholesale restructuring of its European operations (UX No 342), has announced availability of Sybase SQL Server, Release 4.8, with support for symmetric multiprocessor systems. SQL Server is a client-server relational database management system for on-line applications, and in Release 4.8, the database server architecture has been extended to the Sybase Virtual Server Architecture. The company says that 4.8's operational control features enable database administrators to predetermine processor utilisation. Currently, it is in production release on Digital Equipment Corp VAX/VMS, Pyramid Technology Corp and Sequent Computer Systems Inc machines. SQL Server for uniprocessor systems is based on an multi-threaded, single-process, database server architecture. This provides a multi-tasking kernel that performs many of the tasks normally handled by an operating system, such as accepting user requests and managing database tasks and resources. It relies on the operating system for network communication and disk input-output, and Sybase says that this results in lower operating system overhead and more efficient memory usage.

Virtual Server Architecture

The server architecture has been extended to the Virtual Server Architecture designed for multiprocessor systems. The Virtual Server Architecture creates a multi-threaded database process per central processing unit, but the processes appear as a single process, or virtual server, to client applications. The architecture accepts user requests then manages database tasks and resources that involve multiple processors, without interference from the operating system. Sybase claims that more effective memory use enables SQL Server to run applications with large numbers of users without a degradation in performance. Precise Operational Control enables administrators to specify a maximum number of processors to be used by the database server, and this enables applications or programs to run on other processors without interference by the database. Release 4.8 costs from \$24,000 to \$192,000, depending on the hardware and number of CPUs. Customers currently on Sybase's maintenance program will receive Release 4.8 at no additional cost. Sybase says that SQL Server on a two-processor VAX 9000 model 420 has been benchmarked at 261 transactions per second in an audited TPC Benchmark B test, claimed to be highest number of TPC-B transactions ever achieved by a single VAX computer.

NEW OPEN SYSTEMS VENTURE KICKS-OFF IN UK, US

Colin Calder, former general manager of information technology at the UK's Automobile Association has founded a new company which will focus on open systems products. Based in Farnborough, Hampshire, Enterprise Solutions Ltd's UK and European operation is headed-up by Peter Winder, formerly general manager of Sequent Computer Systems in the UK. A US base in California is being run by Kark Klessig, previously president of Quadratron Systems Inc. The company's first product is the X.400-based Enterprise Mail which currently runs under Microsoft Corp's proprietary Windows 3.0 graphical interface environment, though a character-based Unix version is said to be in the pipeline.

BIT GETS GREEN LIGHT TO SELL-ON R6000**AS MIPS TRIES TO RE-VAMP ITS ECL VENTURE**

In an effort to boost the fortunes of its troubled R6000 ECL RISC processor, MIPS Computer Systems Inc has given Bipolar Integrated Technology Inc - previously only a foundry for the part - the go-ahead to sell the chips on to other customers. Until now the R6000 CPU has only been available as a part of system-level products from MIPS. NEC is supposed to be making R6000 processors for the merchant market, but has made no announcement on availability. According to the Sebastopol, California-based **Microprocessor Report** newsletter, the R6000 has suffered delays because of production problems at BIT, and the transfer of the design to NEC has apparently been slowed by the differences between the NEC and BIT processes. It reports that BIT has now solved its production problems, has increased its capacity, and is now able to supply customers other than MIPS. BIT has already struck an agreement with Oki Electric Industry Co, which will serve as a wafer foundry for the Beaverton, Oregon-based chip-maker. BIT can develop derivatives of the R6000 as long as 50% of the logic is ECL - thought to be a necessary constraint to meet MIPS' promises to its CMOS semiconductor partners that it would not grant additional licences, (UX No 342). The newsletter's Michael Slater says the challenge is for BIT to keep the R6000 performance far enough ahead of the R4000 to justify its much higher price, system complexity and power consumption. With the imminent arrival of the R4000, the delay in volume availability of the R6000 has meant that its window of opportunity is closing rapidly. Slater argues that the window could be opened if BIT were able to increase the R6000's clock rate further than the current 60MHz. Although ECL processors may provide the highest uniprocessor performance, the technology seems doomed for niche application markets like high-end servers because CMOS CPUs have the advantage of higher levels of integration and huge price/performance advantages. BIT is the only US semiconductor vendor now pursuing ECL microprocessors. DEC has already cancelled its R6000 project (UX No 296), and troubled FPS Computing Inc is the only company that has announced a product based upon BIT's ECL version of the Sparc (UX No 325). Sun's own ECL sever project using that part was cancelled in favour of multi-processing BiCMOS systems, the so-called Galaxy machines (UX No 343). Data General Corp and Norsk Data A/S affiliate Dolphin Server Technology A/S have cancelled their efforts to develop an ECL version of the 88000 with Motorola Inc, (UX No 318), and Prime Computer Inc has backed out of its agreement to develop an ECL implementation of the 80486 with Intel Corp.

UP TO 5,000 TO GO AT AT&T COMPUTER SYSTEMS

Up to two thirds of the 7,500 people employed by AT&T Co's Computer Systems unit are likely to lose their jobs in the wake of the acquisition of NCR Corp. NCR has started interviewing among the 3,900 AT&T managers, and is expected to offer jobs to no more than 2,000; of the 3,000 other employees, NCR is not expected to take more than 600, and AT&T will reassign another 600, but most of the 1,000 employed at the Little Rock, Arkansas plant are likely to lose their jobs. The plant makes personal computers and servers, and only the latter line is being retained, making it likely that it will be transferred into an NCR factory. AT&T is to take a monster \$4,000m charge against its 1991 figures to cover the cost of the acquisition and resulting reorganisation, and for other planned restructurings. And NCR has created a new telecommunications division that will be responsible for selling products to the regional Bell operating companies as well as AT&T itself: the division is to be headed-up by William Patchett.

NOW DATA GENERAL CRASHES AViiON**SERVER ENTRY PRICE TO \$10,000**

Following the recent moves by Hewlett-Packard, Sun Microsystems, Silicon Graphics and Solbourne Computer to revitalise their low-end strategies, Westborough, Massachusetts-based Data General Corp crashed the same party last week, adding a new mid-range AViiON 4600 RISC server; the AViiON 530 RISC workstation; the AViiON 4100 entry-level RISC server for \$10,000, and the new high performance AViiON 5225/6225 RISC server to its Unix range. All come in single and dual processor configurations supported by the symmetric multiprocessing DG/UX 5.4. The AViiON 4600 comes in low-cost deskside packaging and starts at new \$20,000 with 32Mb memory, 332Mb disk and 525Mb QIC tape, using a 33MHz Motorola 88100 processor to deliver 39 to 78 MIPS. The AViiON 4600 running Informix-OnLine 4.0 is claimed to deliver TPC-B throughput of up to 58tps-B at \$2,450 per transaction per second. It is available in 45 days. The AViiON 530 workstation does up to 78 MIPS and has an improved input-output subsystem and graphics and is from \$13,500 with 16Mb memory and 32Kb cache, with graphics options such as 8- or 24-bit graphics and a 24-bit Z-buffer. It is available later this quarter. Price on the entry-level 4100 server plunges to \$10,000 from \$21,390 with 16Mb memory, 332Mb of disk and 150Mb QIC tape. 5225/6225 servers are from \$43,500 with 64Mb CPU, 1Gb SCSI disk and a 525Mb QIC tape, and support up to 414 AIM II users, and are claimed to perform 35% better than IBM Corp's high-end Powerserver 550. Data General also signed with Unix System Laboratories Inc to offer the Tuxedo System Transaction Manager 4.2 and workstation extension on AViiONs from December.

ORACLE, NCR TO PUT ORACLE PARALLEL SERVER ON NCR 3600

NCR Corp and Oracle Corp have moved their agreement on to include joint development to implement the Oracle Parallel Server relational data base, Version 6.2, on the NCR System 3600 and System 3700 computers, which are derived from NCR's relationship with Teradata Corp. With the addition of the Oracle Parallel Server implementation for the System 3600, Oracle will be the first database capable of exploiting fully all levels of NCR's new unified product line. The two also plan to address a weakness of Unix by developing advanced system administration capabilities, with a single system view of multiple processors working together. The NCR Top End transaction management system will be integrated with Oracle Parallel Server RDBMS. NCR claims that the System 3600, set for first installations in fourth quarter, offers four times the power of the largest conventional mainframes at only one-tenth of the price per MIPS.

BEVVY OF NEW CHIPS SET FOR MICROPROCESSOR FORUM

The Microprocessor Forum in San Francisco, November 6-7, will see the debut of a new, highly integrated "PC-on-a-chip," according to the organisers. Two other companies - neither in the microprocessor business at present - will describe new 80386-compatible CPUs. Texas Instruments will reveal details of its Viking Sparc chip, which is to be used in Sun Microsystems Inc's forthcoming Galaxy multi-processors, see front page (UX No 343), whilst AMD, Intel and Fujitsu will unveil new members of their embedded RISC families. Advanced RISC Machines Ltd - ARM - the Apple Computer Inc/Acorn Computers plc/VLSI Technology Inc venture set up last year to develop technology based upon the Acorn's RISC processor (UX No 311), will describe its ARM600 CPU, see front page.

DOCTOR DESIGN CHIP SET FOR X VDUs

Doctor Design Inc, San Diego has two graphics-accelerator chips for use in X-terminals with Advanced Micro Devices Inc Am29000 and Am29005 RISCs. They replace over 75 integrated circuits, as well as 150 resistors and capacitors, enabling substantial price reductions - mono ones should cost under \$1,000, colour under \$2,000. The 4029 does mono resolutions of up to 1,600 by 1,280, colour up to 1,024 by 1,024. The 4029A graphic ASIC adds colour resolutions to 1,280 by 1,024. Evaluation in third, volume fourth quarter, no prices.

SOVIET COMPUTER MARKET: BUOYANT DESPITE UPHEAVALS

by our Moscow correspondent

A record showing at last month's Comtek '91 computer show in Moscow proved that despite political upheaval and economic instability, the market for computer systems is relatively buoyant in the Soviet Union. Every western exhibitor said lack of hard currency remains the main brake on sales in the USSR. But more software companies appear to be prepared to sell for non-convertible Russian Roubles in a bid to build market share, while hardware suppliers are benefiting from an increasing number of established distributors setting up in the USSR. Doubling the size of the inaugural event in 1990, 110 companies from 22 countries took stands. 1991 saw first time appearances by Intel Corp, DEC and Siemens-Nixdorf, all taking prominent stands.

Despite currency problems and economic instability, demand seems to be fuelled by the continued growth in the number of small businesses. Mikhail Krasnov, Director General of CAT, a US-Soviet joint venture including the US distributor Merisel, says the biggest customers remain the state organisations which have best access to hard currency. Demand has noticeably matured in the last six months, he says: "people are looking for service, quality peripherals and above all, brand names."

Lotus Development announced a Rouble price for Russian 1-2-3 this month and says it has already sold 1,000 copies. At the show it said Soviets will be able to buy Russian 1-2-3 for 5,000 Roubles - \$200 - through its distributor VNIPI StatInform - the state committee for statistics. VNIPI has established a network of 61 dealers in 31 Soviet cities with Azerbaidzhan and Armenia the only republics yet to get their Lotus dealer. Even the eastern Siberian city of Yakutsk, which has 200,000 inhabitants and very limited numbers of personal computers has its Lotus dealer who sold 50 copies of 1-2-3 in the last quarter (I know because I met him). Unlike utilities or database packages, pirated copies of spreadsheets are not usually sold with personal computers in the USSR. Until recently they were irrelevant because no-one needed to know how much their operation cost, or if it was making any profit. Now Soviet enterprises have been made budget holders, managers have been suddenly forced to get their sums right.

Intel Corp announced its first distribution agreements in the Soviet Union. The microprocessor company signed up JV Dialogue and CAT, both US-Soviet joint ventures. It says there will be a full-time Intel representative in Moscow later this year. The company aims to help the Soviets produce personal computers locally, Director of Strategic Projects, Dimitri Rotow, says.

Siemens-Nixdorf, Europe's largest computer manufacturer, says it is now beginning to reap the benefits of its purchase of big chunks of the East German computer conglomerate Kombinat Robotron last year. East Europe divisional manager Gunter Lukas says CH Robotron engineers have been key in securing several large systems orders in the Soviet Union due to be publicised later in the summer.

The Russian language edition of PC Magazine was launched in Moscow last month at the International Computer Forum. The magazine's German president Alexander Kahn says the Russian language was being polluted under the influence of western media and it was important that such a huge market had a publication in its own language. Editor-in-chief Yuri Kuzinin says there are approximately 1m computer professionals in the Soviet Union and the magazine will have an initial circulation of 98,000. The cover price will be four roubles eight kopeks (that's expensive).

Anyone starting a newspaper or magazine in the Soviet Union faces one huge obstacle - the printers. Such is the shortage of paper, modern machinery and goodwill that publication delays of over two months are not uncommon. In Kiev, personal computer users have come up with an alternative. The information registration research institute of the Ukraine Academy of Sciences has set up an electronic newspaper. Broadcasting from the Republic's television network, you need a personal computer and an adaptor card to receive it. Called VSE VSEM (Everything for Everyone), it is aimed at engineers and scientists. It covers history, politics, technology and bizznizz (Russian pronunciation).

Inzhenernaya Gazeta reports that special divisions at newspaper offices are being created to process the information for the electronic newspaper. It fails to mention how often it appears so don't hold your breath waiting for scoops. Last month the weekly **Moscow News** also became available in electronic form. In co-operation with SovInfolink, the newspaper will be available on-line a week after it hits the streets. Thereafter it can be used as a database for interested (hard currency-paying) customers.

Soviet computer imports rose by 177% between 1989 and 1990, says the USSR State Committee for Statistics: the committee estimates 439.6m roubles of computer equipment was imported in 1990 (conversion is pretty meaningless but divide by 25 for US dollar value); exports fell to 63.1% of the 1989 value.

Hewlett-Packard Co is said to be looking for a head of representation for its Moscow office: president of the International Computer Club, Levan Amdilyan, says he was recently contacted by a Moscow-based head-hunter hired by the US company to find a suitable candidate; Hewlett-Packard is very well established in the USSR so the shake-up could have been prompted by the virtual cessation of big state orders - with buyers no longer knocking on the company's door, maybe it thought a bit more local market know-how was called for.

A Moscow-based official of a UK computer outfit returned from a factory last month where, he reported, the Workers Committee had voted themselves television sets instead of a local area network to be supplied by the UK firm.

Motorola Inc plans to open a representative office in Moscow and in several republican capitals according to **Kommersant** newspaper.

At the end of May, the Supreme Soviet adopted the final version of the "All Union Fundamentals of Civil Legislation," the framework for all commercial law in the Soviet Union. Article Four of this document deals with copyright on computer programs. The legislation lays down general principles to which future laws must conform. It is the first major step towards a software copyright law but it does not in itself give authors enforceable protection against pirates. On the drafting committee was Moscow State University Professor of Law Irina Savelyeva. She says the Fundamentals contain significant flaws. Software users (as opposed to owners) have the right to make copies of a program but it is not stated under what conditions this applies. There is also no mention of penalties for unauthorised copying, other than the pirate must pay royalties to the author. Ms Savelyeva expects the Fundamentals to be followed by a Unionwide copyright law which will precede more detailed legislation at Republican level. "It is in the interests of both the republics and of Western software companies that there is a unified law," she says.

The US systems house Krystaltech Inc has bought worldwide distribution rights for Virastop, a Soviet anti-virus program which its author, Sregey Alekseyev, claims can defeat all known viruses. Virastop was produced by the rather strangely named software company the Soviet Market Research Centre.

DEC'S CDD/REPOSITORY DOESN'T SHIP TILL NOVEMBER; ULTRIX VERSION INCOMPATIBLE

Although launched last month, Digital Equipment Corp's CDD/Repository will not be shipping until November for the VMS version, and users will have to wait till February for the Ultrix version. Electronic News reports that one of the main reasons for the delay of the Ultrix version is that DEC's CASE business unit is unfamiliar with the Ultrix/SQL database to be used for storing data - as a result the Ultrix software has needed more testing than the VMS code, which is an update of the existing CDD/Plus data dictionary. Even when it does ship, the Ultrix version of CDD/Repository will not have support for front-end analysis and design tools. The two versions of CDD/Repository are not compatible and are likely to remain incompatible for another two years, so users will have to choose either the VMS or the Ultrix version.

IBM OFFERS ENHANCED PS/2, RS/6000 SPEECH PROCESSING

IBM Corp has announced CallPath DirectTalk, a speech processing system claimed to combine in a single product many of the functions commonly found in separate voice response and messaging products. IBM DirectTalk products run on PS/2s and RS/6000s, and they can be installed and give callers access to information without the need to modify existing applications. They will be marketed by IBM and jointly with Rolm Co, now part-owned by Siemens AG. The DirectTalk products give callers access to spoken information from a standard push-button telephone. They can answer phone calls and ask callers, by means of a pre-recorded message, to indicate the kind of information they want by pressing buttons on the keypad, and the information is supplied by playing back recorded answers or by speech synthesis. The new DirectTalk/2 and DirectTalk/6000 enable applications to connect to information in databases on System/390 and AS/400 mainframes as well as PS/2 and RS/6000; a single PS/2 version can handle four to 16 concurrent calls. The RS/6000 version handles from 12 to 72 concurrent calls and IBM is also promising a speech recognition feature on it - one day. DirectTalk also works with the NetView network management system. DirectTalk/2 is \$23,450 to \$49,200 depending on number of lines, next month; DirectTalk/6000, \$41,000 to \$149,360, October.

NOW ICL BUYS 50% OF BELL ATLANTIC EURO COMPUTER MAINTENANCE FIRM

Indicating that ICL Plc controls its own destiny rather more under Fujitsu Ltd's hegemony than ever it did as part of STC Plc, the company has moved to redress the absurd decision by STC to sell its Computer Field Maintenance business instead of putting it under ICL's wing. ICL has acquired a 50% stake in Bell Atlantic Corp's European computer maintenance business, which started out as part of Cable & Wireless Plc before being bought and expanded by Bell Northern Research and finally being acquired by Bell Atlantic to complement its big Sorbus business in North America. The new Bell Atlantic Customer Services International will be headquartered in London and will have operating units in the UK, France, Germany and Italy providing services in those countries as well as in Switzerland and Austria. It will have more than 950 employees providing services for large and mid-range computer systems, workstations and microsystems for IBM Corp, Digital Equipment Corp, Data General Corp and other major manufacturers. It is currently doing about \$85m a year and intends to quadruple that figure by 1994. Financial terms were not disclosed; ICL is keeping its own maintenance arm separate.

MIPS SETS SALARY CUTS FOR ALL, SOME JOBS TO GO...

In the wake of a loss of \$597,000 for the second quarter, MIPS Computer Systems Inc is instituting pay cuts and is offering voluntary redundancy terms to employees - the costs of which will ensure a loss this quarter too. The company says the restructuring is in part because of the Advanced Computer Environments consortium effort, which will affect MIPS' future systems and software plans. MIPS will also evaluate assets affected by the ACE strategy; the restructuring is hoped to reduce its 780-strong workforce 5% to 10%. Salaries will be cut 10% to 20% for top executives, 5% for everyone else.

...AS SUN SEEKS TO CUT WORKFORCE AT MILPITAS PLANT

Also making voluntary redundancy offers is Sun Microsystems Inc, which is also moving some workers out of Silicon Valley while adding employees elsewhere to improve efficiency. The company reveals that it has offered voluntary redundancy packages and transfers to workers at its Milpitas manufacturing plant for the past eight months, and says a "slow trickle" has resulted. Published reports estimated the number at 750 to 1,000 transferring or leaving. Sun said the changes won't necessarily save money and are not a reaction to business conditions. Sun has factories in Westford, Massachusetts and Linlithgow, Scotland, and is seeking a new site in Asia. It plans to add to its 12,200 workforce next year, and it is offering to retrain some of the 2,700 at the Milpitas plant for work at other locations.

OS/2 IS NOW DECEASED AS FAR AS MICROSOFT IS CONCERNED

The war between yesterday's allies, IBM Corp and Microsoft Corp, looks set to accelerate as more reports come in that Microsoft regards OS/2 as dead. Senior executives last week confirmed the decision to scrap OS/2 Version 3.0, and the company is concentrating on getting existing OS/2 users to migrate to NT, New Technology. It is also casting doubt on IBM's ability to provide Windows compatibility in OS/2 2.0, saying it can't be done without Microsoft's cooperation. Microsoft in the UK is telling a very similar story, with Windows 3.1 to ship this year, a 32-bit Windows interface also this year, and New Technology itself to ship next year. So, has Microsoft stopped development of OS/2 3.0? IBM has not confirmed that OS/2 3.0 will be available as a product, claims Microsoft, and while it is under contract to develop Version 3.0, Microsoft is now packaging NT without an OS/2 subsystem, and its development efforts are committed to getting existing OS/2 users into NT and Windows. It now describes NT as an operating system, Windows as an operating environment, and appears to be in the process of merging the two: they will span the gamut of computers from pen-driven to servers, including RISC-based workstations - with Sun Microsystems Inc's Sparc apparently having as high a priority as the Advanced Computing Environment's MIPS Computer Systems Inc R-series RISC-based architecture. The company claims that Windows 3 has an installed base of 4m, MS-DOS has 70m, Macintosh has 5m, and OS/2 has a meagre 600,000 (another source said 800,000 last week but Microsoft should know). By next year, Windows should hit 7.8m, and with numbers like that, Microsoft says MS-DOS and Windows are the core of its strategy now.

unigram X

The Weekly information newsletter for the UNIX @ community worldwide

Talk on the street has it that **Sequent Computer Systems Inc** may be a target for takeover since the share prices fell drastically after Sequent reported a second quarter loss of \$19.8m against a \$5.7m profit last time: one of the companies mentioned as a possible candidate is **AST Research Inc**, a \$700m company against Sequent's \$250m.

Illinois-based **Sentinel Computer Services Inc**, which markets **IBM Corp**, **Digital Equipment Corp** and **Wang Laboratories Inc** products and offers services on them, has reached an agreement with **Sun Microsystems Inc** to become a value added reseller of Sun computer systems: it says software has been developed by Sentinel enabling Wang users to integrate Sun's systems into their networks; Sentinel likes the Sun kit so much that it is in the process of migrating all of its own in-house computer operations to a Sun Sparcserver 490.

Canon Inc says its **Canon Sales Inc** unit will more than double imports and sales of US computers and other high technology equipment by 1995, when it expects its imports - mainly of **Apple Computer Inc** and **NeXT Inc** computers - to reach \$1,500m.

French graphical user interface builder **Non Standard Logics** has opened a US subsidiary in Santa Barbara, California: it's headed-up by Gerard Brevier.

Solbourne Computer Inc is hunting for a site for its Pacific rim headquarters: it has already appointed Carl Herrmann to run the operation.

Pyramid Technology Corp has opened a German subsidiary in Munich: it's being run by Bernhard Wobker who was formerly vice president of open system at Nixdorf Computer AG.

Control Data Corp has introduced **Silicon Graphics'** new Indigo personal RISC workstation as the Cyber 910-200: with a new release of its ICEM CAD/CAM software a bundled solution is \$16,200

GEC-Marconi Software Systems is to market and support **Sun Microsystems'** Ada development environment on the Mountain View, California-based firm's Sparc workstations in Europe: GEC-Marconi will also be doing the same for a range of other CASE tools.

ICL is claiming top spot in the supply of commercial Unix systems in the UK for last year following a report by **Inteco**, which gives ICL 18% of the \$15,000-\$500,000 UK Unix system marketplace: **NCR** took 14%, **Unisys** 10% and **Bull** 5% - "other" suppliers accounted for a whopping 53%.

And a new report on the Unix market in Western Europe from London-based **Input** claims the Unix system software market will be worth \$2.8bn by 1996, up from \$700m now: Germany has a 24% share of that market, UK sales are responsible for 22%, France accounts for 21%, Italy 9% and the rest of Europe 24%.

Momentum Software Corp, Englewood, New Jersey, has announced version 2.2 of its XIPC software for designing distributed applications - the new release includes support for asynchronous operations and triggers, a tool that enables programs to monitor inter-process activities and react to specified situations: XIPC now also supports **Santa Cruz Operation Inc Unix**, **OS/2** and **VMS** in addition to **AT&T Co Unix**, **Interactive Systems Corp Unix**, **SunOS** and **AIX**, it's out now and costs from \$2,000 to \$12,000 depending on the operating system.

Groupe Bull SA has been awarded a \$46m contract from the Polish government to develop a Unix-based tax information system. The contract calls for Bull to supply 376 DPX/2 Unix machines, 4,700 Zenith Data Systems personal computers, over 2,000 terminals and printers and to provide extensive support services. The new Polish contract follows an initial \$26m pact placed with Bull.

Data General Corp has been awarded a \$1.2m contract by the Spanish Asturias Health and Social Services Board; the company is to supply an AViiON 6220 and 4020, three AViiON 100 workstations, an MV3500 and a fibre optic-local area network.

Sparckit supplier **LSI Logic**, Milpitas, California, has two new graphics controller chips for use with Sparc-compatible workstations or Sbus-based graphics cards: the L64825 Sbus video frame buffer and L64855 Sbus graphics controller can support multiple colour and monochrome monitor types, they cost \$45 and \$66 respectively and are sampling now.

IBM Corp says The Integrated Reasoning Shell Release 2 for OS/2 is now available and that Release 1 for the RS/6000 and Release 2 for System/370 follow on July 26. TIRS 2.0 enables OS/2-based TIRS applications to run cooperatively on AS/400s.

Connectivite Corp, Tarrytown, New York, has a new development system for writing Macintosh front-ends to existing mainframe applications. Both is based upon the firm's existing object-oriented Masquerade software and means that applications written for IBM's CICS, TSO and CMS environments don't have to be re-written to take advantage of the Mac interface. Using Both, multiple host screens can be consolidated into one GUI window and client/server functionality is in-built. Prices go from \$1,500.

And **Unipalm Ltd**, Cambridge, received its first copy of **Cayman Systems'** XGator Macintosh Windows under X product (UX No 343) last week, and plans to show it in the UK at the forthcoming Sun User Show, which is taking place in Birmingham's NEC between September 10th-12th - contact EMAP on 071 404 4844 for further details.

Swiss firm **UPT Performance Technology AG** has taken over **Alliant Computer Systems Corp's** Zurich subsidiary: UPT will handle Alliant's business in Switzerland, Austria and the former East Germany

In the UK, **Informix Software** says it has re-couped over £250,000 for unlicensed Unix software sold by resellers: the money is being recovered by **FAST**, the Federation Against Software Theft.

The **Uniplex** office automation suite will be running on the systems **AT&T** and **Pyramid** are supplying to the US Internal Revenue Service under the \$1.4bn TMAC contract recently awarded to **AT&T**, (UX No 343).

Richardson, Texas-headquartered **Convex Computer Corp** says it has the first commercially available visual debugger capable of analysing highly optimised code at the source level: the CXdb development tool, the result of 11 years' research and development, can debug optimised Fortran and C, using a window interface on graphics terminals running CXwindows and ASCII terminals running Maryland Windows, at the system instruction level, with full access to the system state including scalar, vector and communications registers; it's available this month for £3,500.

And **Convex**, which currently uses proprietary processor technology, is said to be trawling for a RISC processor to use in its multi-processor development project codenamed Medusa, according to US press reports: sightings of Convex officials at the recent ACE Consortium launch suggest it is leaning towards the **Mips R4000**.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram X

CPW

The weekly information newsletter for the UNIX ® community worldwide

London, August 12-16 1991

Number 346

AT LAST! USERS TO TAKE CONTROL OF X/OPEN

In a move that promises to redound through the industry, X/Open is preparing to turn itself inside out in a major reorganisation that will effectively change it from a vendor organisation to a user organisation. Restructured, X/Open will seek to become the single vehicle for all user requirements, embracing or allying itself with all the other user groups that have come into existence recently and fashioning step-by-step guides for Open Systems procurement, co-existence and migration that business and government users worldwide would follow. If successful, the new X/Open chartered to hasten the actualisation of Open Systems, would be in position to dictate to the vendors, amassing great power for itself. The notion of regrouping has been kicking around for over a year, but X/Open management only got the go ahead from its twenty-one owners a few weeks ago. These owners, who double as X/Open's board, are exclusively hardware vendors or vendor-driven consortia, and include Fujitsu, Hitachi, NEC, Okidata, Sun, Siemens-Nixdorf, ICL, Olivetti, NCR, Nokia, the Open Software Foundation, Philips, Prime and Unix International. When the idea was first bandied about, a number of these firms did not see the need - or heed the writing on the wall - but recent events have forced their hand. The rationalisations the vendors have undergone, in light of falling sales and the deepening anger and frustration of users over the failure of the vendors to implement truly open systems, have driven X/Open's sponsors to the reorganisation decision, according to X/Open chief Geoff Morris. It was a decision arrived at despite vendor apprehension that they will be forced to make radical changes in their individual corporate strategies, he added. X/Open has much to do yet to implement the new structure. This week it expects to issue a statement of direction. It will then have to touch base with each of the dozen or so user groups, such as the User Alliance for Open Systems and Corporation for Open Systems, to negotiate levels of cooperation or takeover.

Vendor power to be curtailed

Inside X/Open, the power of the vendors, who have been making its technical and marketing decisions through a series of sub-committees, will have to be curtailed and a stronger decision-making role created for X/Open's User Council, which will effectively become the tail that wags the dog. X/Open currently has 46 members on its User Council, including such firms as DuPont, Kodak, Arco and Amoco, and will launch a recruiting drive to expand that base. The resources that X/Open has been expending on its branding programme, which has claimed the bulk of its investment, will be redirected or enhanced (ironically by the vendors) and spent on its on-going Xtra research project. Xtra, possibly fortified by user other user groups are doing, will form the basis of the highly detailed Open Systems specification and delivery timetable it will create and demand from the vendors. That's in addition to the services that users have demanded since the first Xtra meeting in Montreal in 1989, such as the procurement, migration and co-existence guides. The specification could become a reality within six to nine months. It was waylaid, as Morris delicately put it, "by the value judgements of the vendors" running X/Open, presumably out of collective fear of its impact. In fact, the co-existence guide, while not yet in circulation, is reportedly close to being ready. The litmus test for X/Open is of course how it orchestrates the flip-flop and whether it can persuade users that the vendors have actually taken a backseat and that this move is not simply a way for the vendors to control them. With its European roots, UK base and dubious distinction as the first Unix consortium, X/Open will have to raise its profile significantly in the US to succeed, giving its American operation and staff co-equal status at least with Europe.

NEW AIX RELEASE TO ACCOMPANY "RS/5000"s

IBM Corp is expected to accompany the new low-end RS/6000s - some are still calling them RS/5000s - this Autumn with a new release of the AIX Unix operating system that will enable external SCSI disk drives to the SCSI-2 controller, making it possible to create fault-tolerant disk arrays cheaply. It is also expected to enhance its implementation of Sun Microsystems Inc's Network File System to improve interoperability with alien machines. On the hardware front, Computer Systems News hears IBM will come out with a diskless model offering about the same performance as the bottom-end RS/6000 at about \$5,000, and also a model with a disk for a little more. Such machines are vital for IBM because many of the biggest orders for workstations have been for a dozen or 20 high-price high-end servers and scores of very low cost desktop machines. Costs will be cut by IBM utilising a single or two-chip version of its RIOS processor, which currently comes as an expensive six-chip set - the integration is a stepping stone towards the desktop packaging for the chip currently being worked on between IBM, Motorola and Apple. In June, IBM Japan demonstrated a new thin-film multi-chip module that squeezed the processor into a 4.5 square inch package, one twelfth the size of the current 56 square inch circuit board, which should allow clock speeds of 100MHz or more - but how soon this technology will show up in products, and how much more it costs are still unanswered questions.

ORACLE BLOWS HARD ON NEW PRODUCT COURSE

After being bailed out to the tune of \$200m by Nippon Steel Corp, turning in a \$12m loss last time around and suffering a rash of executive departures, (UX Nos 337, 342), Oracle Corp is about to set sail on a course where it hopes to find the fresh trade winds that'll keep it ahead of database competitors like Sybase Inc and Informix Software Inc. Like its £1m UK project, the two-ton Wings of Oracle, Admirals Cup racing yacht - which has encountered a similarly unfortunate series of squalls down in the Solent during the Isle of Wight Cowes week sailing regatta - Oracle much needs some better wind to blow its sails. Beginning this December, the firm will embark on a product overhaul and an internal development strategy that'll continue for most of next year. The emphasis will be on integrating its database and software engineering tools. First over the starting line will be Book Viewer, a new product that'll have a range of applications in on-line document management and the like. It'll be closely followed by a new release of its text retrieval product, developed using the Toolkit II graphical applications software, expected early in 1992. The ability to make its range of products portable across a range of graphical user interface environments is a cornerstone of the new strategy, according to Oracle UK's Andy Osborne. US trade paper Computer Systems News says a major revision of the Oracle Graphics environment is planned for next March, with the long-awaited version 7.0 of the Oracle database engine due in May. The PL/SQL transaction processing procedural language is due for a re-vamp next May, the paper believes, with an upgrade to the SQL*Forms forms generator based on Toolkit II and supporting multimedia to follow in August. Furthermore, a common code base in Toolkit II and the connectivity features already present in its CASE software, is expected to tie together Oracle's product range in a more integrated fashion. Although no-one at Oracle would confirm or deny ~~exact~~ dates - it's claimed some haven't been set yet anyway - Osborne agreed that the directions outlined are "broadly correct." In addition to its end-user schedule, Oracle is also marking a shift in the way it does internal development work on new products. Previously, inconsistencies have resulted from the use of a variety of development tools across its different product divisions. In turn these have made it difficult to deliver debugged and consistent products to customers, who then struggle to put together their own database applications. Initially, Oracle plans to delay key product upgrades where necessary in an effort to overcome this reputation: an upgrade of Oracle Financials due later this year is now not expected until the middle of 1992, for example. However in future, the firm is to standardise on the use of its own CASE tools for internal development purposes, which it hopes will lead to both greater integration and harmonization of its software. "Our CASE tools are now mature enough to be used internally," claims Osborne. Oracle is also expected to carry out more work with its customers in an effort to ensure it delivers products they want to use.

NEURALWARE SETS SPARC, PC NEURAL NETWORK DEVELOPMENT WORKSTATIONS...

NeuralWare Inc, Pittsburgh, Pennsylvania, has introduced two neural network development workstations in Sparc and personal computer configurations. Both have been designed to run its NeuralWorks Professional II/Plus software, which is bundled with the SuperStations. They're targeted at neural network application developers in process control, financial modeling and risk management, especially within the defence, oil and gas industries. The SuperStation/Sparc is essentially a Sparcstation 2 sourced from Sun Microsystems Inc with Sky Computers Inc's 40MHz Intel i860 Skybolt board added-in. With 32Mb RAM, 414Mb disk, floppy drive, SCSI, Ethernet, serial and S-Bus slots, the 28.5 MIPS machine is claimed to outperform IBM's equivalent RS/6000 model by four times. The SuperStation/PC is a 33MHz Intel 80486 box with 8Mb RAM and 200Mb disk: it also includes a 40MHz Intel i860 board, which itself comes with 16Mb RAM. The SuperStations are due in September: the Sparc machine is priced at \$60,000, the PC version costs \$30,000. Initially they are only available in the US, though NeuralWare distributes its software products through London-based Scientific Computers Ltd in the UK. NeuralWare President Sean Riley says the firm is currently in negotiations with Sun and its other hardware suppliers about distributing the machines in Europe where it is prohibited from doing so by Sun and others at the moment. The firm has also released a version of its software for DEC/Ultrix 4.0: it is priced at \$4,000.

...AS ADAPTIVE READIES CNAPS FOR END OF YEAR

Meanwhile, Adaptive Solutions Inc, Beaverton, Oregon, says the planned fourth quarter introduction of its CNAPS neurocomputer system based upon a Connected Network of Adaptive ProcessorS, CNAPS, will go ahead, despite the fact that Inova Microelectronics Inc, the firm fabricating the N64000 CNAPS chip has gone bust (UX No 325). Adaptive says that the four Inova individuals responsible for the N64000 project are now on its payroll, and that it is currently negotiating with the same Silicon Valley foundry that Inova was working with. The CNAPS launch will be late in the quarter, rather than at the beginning as originally planned.

MYRIAD LAUNCHES i860/XP AT BOARD - CLAIMS 100 MFLOPS

Cambridge, UK-based Myriad Solutions, makers of i860-based accelerator cards for PCs, has launched what it claims to be the first single processor applications accelerator board to achieve 100MFLOPs. The Dash!860/50 board uses the new 64-bit, 50MHz Intel i860XP RISC processor (UX No 337), with 8Mb DRAM as standard (expandable to 32Mb), custom memory manager, and shared memory for fast data transfer. Like its slower relative, the Dash!860/25 which uses the 25MHz i860, the AT board supports C, C++ Fortran and Pascal compilers, math, signal, image processing and graphics libraries (including Dore, NeuralWare and Owl), and can be accessed by DOS-based applications software, including Microsoft Windows 3.0 and Desqview. Myriad turns out to be the supplier of boards for Boulder, Colorado-based Set Technology Corp's 486-i860 imaging workstation (UX No 324), and Myriad has a similar product itself, the Dash!25, packaged as an integrated workstation. As an add-in board, the Dash!860/25 costs from £3,500. The company's next move is either to port full Unix onto the i860 or to port X-Windows, so that it can run applications written for 'pure' i860 workstations such as Samsung and Oki. Myriad says the i860 is particularly good at numerically intensive applications such as CAD, ECAD, visualisation, engineering simulation and image processing. The company also has a deal with Neuralware of Pittsburgh - see above - whose products are distributed as a package in the UK through Scientific Computer. Myriad and Set are also amongst those companies looking to license the Fusix i860 software environment developed by Du Pont Pixel (UX No 336).

MIT DELIVERS X11R5 TO X CONSORTIUM

X Consortium members are now in possession of the latest release of the X-Windows system from the Massachusetts Institute of Technology. X11 Release 5 includes PEX, the PHIGS extension to X, which provides a standard way of supporting three-dimensional graphics, scalable fonts technology, increased internationalisation support and a device-independent colour system developed by a European standards body, the Commission Internationale De L'Eclairage. X11 release 5 goes on general release from September 5th: it's available in the UK from IXI Ltd, Cambridge, and costs £375 including documentation.

SIEMENS-NIXDORF TO CUT 3,000 MORE, CLOSE BERLIN...

Siemens-Nixdorf Informationssysteme AG has decided that rather more than 1,000 of its 51,000 employees are surplus to requirements and it said last week it would cut another 3,000 jobs and close the 600-strong Nixdorf plant in Berlin - no tax breaks there any more. It looks to save \$200m by the end of next year.

...UK CONTRACT "TOO LATE"

Too late to save the jobs of the 3,000 Germans, SNI also announced that it has won a "multi-million pound" contract from the UK Ministry of Agriculture, Fisheries & Food for a Unix-based office automation system for the Ministry's 25 headquarters divisions. The system will consist of personal computers linked to Targon Unix machines running Cliq office software from Quadratron Ltd and Ingres Corp relational database; the company hopes the system will spread to all 220 offices, linked by the Ministry's X25 packet net.

JUDGE WALKER GETS SERIOUS WITH RDI IN BRITE LITE CASE

The US federal court has turned the temporary restraining order restricting RDI from selling, advertising or even demonstrating the Mac part of its Sparc laptop Brite Lite (UX No 343), into a more serious preliminary injunction. The ruling was made by Judge Vaughn Walker who is also hearing the Apple/Microsoft/HP case and was based on his finding that the plaintiff, Xcelerated Systems, will likely succeed in winning the copyright infringement/trad secrets suit it's brought against RDI. Xcelerated claims to own the software that made Brite Lite Mac-compatible and has charged RDI with marketing it without a licence after negotiations between them broke down. RDI allegedly altered the program by removing Xcelerated's copyright notice and disabled its security access code mechanism to make unauthorised copying possible. RDI offered its Mac technology, which it called Companion, to any Sparc vendor for resale. Under the restraining order, RDI has to turn over all copies of the program to Xcelerated. Xcelerated president David McMillen said these apparently totalled 82 copies according to records his lawyer has acquired. Xcelerated's product, which it calls Liken, is still unfinished. RDI had to buy Apple machines and scavenge their ROMs to use in Brite Lite for it to work. Xcelerated hopes to have a software-only solution ready by the end of the year and wants to move to other platforms besides Sparc. McMillen said interest in his technology has heightened in the wake of the IBM/Apple alliance and he has had inquiries from some of the companies in the ACE camp. He reckons his Sparc market at a fifth of the installed base.

SOLBOURNE ADDS SERIES 700 SERVERS, MULTI-CHANNEL BOARD

Longmont, Colorado-based Solbourne Computer Inc has wasted no time in following up its announcements of late last month (UX No 343) with two further additions to its line of multiprocessing Sparc servers and an innovation in the Sparc world. The Series 700 Deskside Departmental Server is a mid-range server in a rack-mounted system, and there is a new Multi-Channel Accelerator Board claimed to be the first multi-channel input-output architecture available in the Sparc market and to enhance the input-output capabilities of Solbourne's multiprocessors. It says SCSI drives are vital for database applications, while IPI drives are well-suited for design automation and the Series 700 can accommodate up to 10 internal SCSI drives, up to four internal IPI drives, or a combination; overall the Series 700 can take up to 32 IPI disks. It comes in two base systems - the 33MHz 5/700 and the 40MHz 5E/700, each with one to four processors and 16Mb, 32Mb or 128Mb memory modules for a maximum of 256Mb in the 5/700, 640Mb in the 5E/700; the slower one is pitched as a file and network server, the 5E/700 as a compute server. The seven Kbus system slots accommodate either memory or processors and there is one VME slot. The 5/701-16 is rated at 18 SPECmarks, and 27 MIPS with one CPU, 101 MIPS with four. The 5E/702-16 is rated at 31 MIPS to 114 MIPS, and 22.4 SPECmarks. Prices start at \$21,900 for a 16Mb single processor 33MHz model, \$28,900 for the 40MHz version. The Multi-Channel Accelerator Board for 5E/900s and the new 700s supports on a single board a 25M-byte-per-second VMEbus, Ethernet interface, and a 5M-byte-per-second SCSI port. It also enables Solbourne's Kbus computers to link with more than one network at a time, and it sells for \$5,900. In the UK, Solbourne introduced the desktop S4000DX Sparc workstations the US saw last month with pricing starting from £5,700. Simon Goodfellow of Solbourne said that Sun UK had left a gap in its product line around the £8,000 to £10,000 price point, which Solbourne was setting out to fill.

UNISYS BEATS IBM TO SVR4 K-MART CONTRACT

In the US, IBM Corp has lost out on its fevered pursuit of K-Mart's business, despite the fact that it was prepared to compromise all its principles by putting Unix SVR4 on the PS/2 for the first time, to enable it to bid on the contract (UX No 336). The award, consisting of an order for 1,500 Intel 80486-based, U6000/65 multi-processor boxes and accessories went to Unisys Corp - Troy, Michigan-based K-Mart Corp's traditional supplier. The other 800 of K-Mart's 2,300 or so stores are already equipped with Unisys U6000 Series machines and the new order completes the K-Mart Information Network II. The value of the award was not disclosed. IBM initially offered PS/2s jerry-rigged into multi-processors using AOX boards, a solution that fell short of K-Mart's multi-processing expectations. Unisys' U6000/65s are capable of supporting up to five 50MHz 80486s running Unix SVR4 with multi-processing extensions developed by the MultiProcessor Consortium. IBM went to UHC Inc for the SVR4 port. The increasing number of major end-user contracts reportedly being drafted specifying Unix SVR4 is expected to force IBM into other SVR4 bids. Whether it will continue to do so only grudgingly, or whether it educates its sales staff to the world outside of AIX, remains to be seen.

SUN TO REVEAL DISTRIBUTED OBJECT-ORIENTED PLATFORM AT SAN JOSE DEVELOPER CONFERENCE

In addition to the integrated software environment based around Open Look that it will reveal at its developers conference in San Jose in September (UX No 345), Sun Microsystems Inc is expected to detail the first fruits of its collaboration with Hewlett-Packard Co on a distributed object management environment for applications running across networked systems from different suppliers and on a variety of operating systems (UX No 323). Although end-user technology is thought to be some two or three years down the road, the initial roll-out is being aimed squarely at the collective heads of the Advanced Computing Environment consortium and at the Apple-IBM axis. Sun reckons that five years out, the desktop business will hinge on software, and argues that the likes of Apple and IBM, Microsoft and Intel in ACE, and itself and HP have teamed-up in anticipation of this future battleground.

BT PUSHES OUT THE BOAT WITH THREE LAUNCHES FOR DEC, IBM AND HP

DEC is the latest beneficiary from British Telecom's giant BoAT office automation in BT project (UX No 287, 296), to reveal itself, and has won a contract to provide a system for staff in BT's new London zone, as bounded by the M25 motorway ring. The project, one of three initial launch installations now underway at BT, will connect up senior managers working at the Business and Personal Communications Division, using DEC 5000/5100 systems running Uniplex, Pathworks for Ultrix, Message Router and Quantec's QED Office as the PC mail agent. Initially for 100 users, the DEC installation is likely to support up to 2,000 users in the future. DEC's project takes its place beside two further launch installations carried out by IBM and Hewlett-Packard - but according to Graham Oliver, BT's BoAT programme manager, other Unix suppliers will also be used.

Harmonisation

There are two strands to BoAT: the first is to utilise and integrate the existing office automation system, which runs on IBM mainframes, Unix systems and VAXes; while the second strand aims to add around 30,000 users over the next three years. For this it plans to concentrate on Unix-based servers, and is using its three initial suppliers to make sure that everything is right. According to Oliver, IBM, DEC and HP are working closely with each other on the project. "Making open systems your philosophy is challenging", said Oliver, "but the three suppliers have been very co-operative with us and each other." The aim is to have the same software portfolio on each box, and while Uniplex and Oracle (which looks like being the preferred database) is available on all three, other components, such as HP's Open Mail, are having to be ported to the other platforms. The fact that all three are Open Software Foundation members is a "coincidence", according to Oliver: BT are specifying X/Open's XPG3 compliance for the software environment to help porting activities between the various systems. "One of the challenges we face is to harmonise the existing Unix machines - but we won't concentrate everything on three suppliers." Character and graphics-based PCs will also be included in the scheme on a client/server basis, allowing the continued use of DOS word processing packages linked up to Unix hosts. Despite talk of cut-backs in the scheme last year when the project, initially codenamed COAST, was renamed, Oliver claims that the complete system, incorporating BT's international and UK operations, could eventually connect up 50,000 or more users. Networking is based partly on BT's company-wide private InterMail X.400 network provided by BT's TimeNet division, and eventual migration to full OSI is an objective.

AFE MAKES ITS FIRST SPARC MOVES IN THE US

AFE, the British company that declared it had Sparc intentions at the end of last year (UX No 316), is about to make its move. In the US, it has just hired John Shepard as president of Virginia-based AFE Computers Inc. Shepard previously managed Du-Pont Pixel's benchmark originated Mac Blitz and BRISC sales force (see below). Shepard expects to sell AFE's 25MHz IPC clone through an independent representative organisation to dealers, VARs and system integrators already handling AutoCad, RasterOps and Sony News. They in turn will target the scientific/engineering end-user community. Doubtless they will trip over Sun occasionally, but not all that often. Shepard said that AFE in the UK, which will supply components for US assembly to another of its subsidiaries, AFE Technologies, got its first working 25MHz chipset from LSI last month, and expects to get enough of them to meet its US sales target of 125 by the end of the year. AFE's boxes, still unchristened but deliverable later this month, will have 12Mb memory on board and bundle a 21-inch screen together with Interactive-supplied SunOS, SunView, Open Look, X Windows and Visix Looking Glass for a list price of \$10,000. AFE's screen and RAM size exceed Sun's 19" and 8Mb for \$2,000 less. In addition, AFE will be unbundling its colour frame buffer and selling that together with a 21-inch monitor for a cost-effective \$3,000. Around Comdex time it expects to release a SparcStation 2 clone. In the UK, AFE is based in Sutton Coldfield, West Midlands.

HEWLETT-PACKARD ADDS FAULT-TOLERANT 68040 MODEL - IN EUROPE TOO...

Hewlett-Packard Co last week introduced a new model in its Sequoia Systems Inc-designed fault-tolerant Unix computer designed for the telecommunications industry and cut the price on the existing HP 9000 Model 1240 fault-tolerant computer by 40%. It is also now marketing the machines in Europe as well as the US. The new HP 9000 Model 1245 is claimed to be up to three times faster than the Model 1240, at the original US list price of the Model 1240. Running the HP-FX operating system, the Model 1245 is compatible with the full line of HP 9000 workstations and business systems and servers. Oracle Corp's new Parallel Server Relational Database Management Systems, designed for high data throughput in large transaction processing applications, are scheduled to be offered on the new system. New versions of other databases expected to be available on the Model 1245 include those from Informix Software Inc, Ingres Corp and Unify Corp. The Model 1245 system scored up to 603 jobs per minute using the AIM Technology Inc benchmark for measuring a computer's Unix operating system performance. Higher performance is achieved through the use of Motorola Inc's 68040 microprocessor rather than the 68030 in the 1240, which rates at 20 MIPS per processor at up to 32 processors - and an expanded cache size - 256Kb to 1Mb. Current users of the 1240 include several regional Bell operating companies, including US West Inc. The company's recently introduced C and C++ compilers and debuggers are now available on the Series 1200 systems so that applications for the fault-tolerant machines can be developed on the much cheaper HP Apollo 9000 Series 700 workstations. Tuxedo System/T from Independence Technologies Inc is also now up on the HP 9000 Series 1200 systems. The HP 9000 Model 1245 begins at \$400,000 with shipments in November; the 1240 is now from \$300,000.

...SEQUOIA LAUNCHES IT AS THE SERIES 400, READIES NEW LOW- AND HIGH-END

Sequoia meanwhile introduced the machine as its Series 400. In addition to its relationship with HP, it has a web of other partnerships including those with Ultimate Corp, Samsung Electronics, Computer Consoles Inc and Sumitomo Electric Industries. A low-end, \$150,000, fault-tolerant box developed by Sequoia and Samsung - the Series 40 - is reportedly due by the end of the year, and by late 1993 Sequoia is expected to launch an attack on the top-end of the market, currently dominated by the likes of Stratus Computer and Tandem Computers, with the Series 1000. It will be based upon HP's Precision Architecture RISC chip - though it is claimed that customers will be able to buy the machine configured with the MIPS or Sparc RISC architectures if preferred: the Series 1000 will go to a reported 500 MIPS and beyond. Just before the announcement of the Series 400, Sequoia's chief operating officer, Michael Bruce, resigned his post.

BLUEBIRD SOFTWARE CALLS IN AN ADMINISTRATIVE RECEIVER

IBM UK Ltd's biggest AS/400 agent, which is also an RS/6000 reseller, Rickmansworth, Hertfordshire-based Bluebird Software Plc last week decided it had no alternative but to call in an administrative receiver after efforts to re-finance the company, which involved 3i Plc and IBM itself, failed. The function of an administrative receiver is to take over the running of the company and to attempt to salvage as much of it as possible as a going concern, finding a buyer for the whole or for separate parts of the business.

UNIVERSAL'S RS/36 RUNS SYSTEM 36 CODE ON RS/6000

California Software Products International Inc has competition - and IBM Corp is going to hate it, although rather more in Rochester, Minnesota than in Austin, Texas. The competitor is the Newport Beach, California-based Universal Software Inc subsidiary of Acom Computer Systems Inc, and the product is Open RS/36, a complete IBM System/36 emulation environment for the RS/6000. Biggest attraction of the product - apart from the fact that even on a Model 320, it's claimed to be 4.5 to 12 times faster than a B24 System/36 - is that it offers load member compatibility with the System/36 so that once libraries and data files are transferred - on quarter inch tape or direct via twinaxial cable to the Micro Channel Adaptor on the RS/6000 - they run unchanged, and applications can be carried across without recompilation. Open RS/36 includes a System 36 look-alike environment so that users do not have to learn AIX administrator functions, and the ability to run object code unchanged solves the problems of users that don't have source code for their applications - or whose RPG II programs have embedded assembler subroutines or non-IBM RPG extensions, or have Cobol programs. Open RS/36 transfers the RPG II and Cobol compilers, and DFU, SDA and SEU development tools to the RS/6000 and adds source-level debugging capabilities, including the facility to step through RPG and Cobol source programs while displaying and modifying variable contents and indicator status on the RS/6000. MAAPICS and DMAS programs with custom add-ons can be transferred without the need for re-writing, and files remain in EBCDIC but can be also be accessed by alien programs by using a C subroutine that translates them to ASCII on the fly. An RPG to C translator-compiler is planned for October. It's due next month, the first licence costs \$400 per user with a minimum charge of \$4,000; for the second to the fifth licences the charge is \$300 per user with a minimum of \$3,000. The transfer facility is \$4,000, and RPG extensions are \$500 each; the company is looking for distributors.

COMMODORE: "HASN'T DROPPED UNIX EFFORT"
Commodore Business Machines Inc, West Chester, Pennsylvania, denies unconditionally the rumour recently posted on the net claiming that it has dropped its Unix development. Being baseless, it says, it can't explain how the allegation got started. Like most companies lately, it's pulled in its horns a bit, but that has only cost it one Unix developer, and it is now about to come up with its next SVR4 iteration. After months of waiting, Commodore finally unveiled its Motorola 68030-based, Unix V.4 Amiga 3000 box at the Uniforum show earlier this year (UX No 319). However, progress since then has been slow. Although the Unix box is being sold into academic, and some commercial sites in the US, there has been no European introduction. There are understood to be a handful of users in France and Germany - where some of the Unix development was done - however a full European debut is unlikely because Commodore is not able to support the machine this side of the Atlantic.

ENCORE'S 1,000-MIPS GIGAMAX 88000 BOX SET FOR OCTOBER...

Encore Computer Corp is still hard at work on its GigaMax multiprocessor, which it is developing under contract from the US Defense Advanced Research Projects Agency. Work on the machine was begun when Encore still majored on the National Semiconductor Corp NS32000 family of microprocessors, but like Encore's current line it now uses the Motorola 88000 RISC, although it will not be compatible with Encore's commercial product line. It is aiming for performance of 1,000 MIPS and is now due out in October.

...ALPHA MICRO ADOPTS MOTOROLA'S 88000 DELTAS IN \$4.2m PACT...

Winning a fillip for its battle to maintain the credibility of the 88000 RISC in face of its agreement in principle to make the IBM Corp Power PC RISC, Motorola Inc has won a three-year OEM agreement for its 88000-based models of the Delta family of Unix computers from Santa Ana, California-based Alpha Microsystems Inc under a contract valued at \$4.2m. The systems will initially offer Unix System V.3 with V.4 available in early 1992. The RISC-based systems will be available in both uni- and multi-processor configurations and they will be supported by "an extensive catalogue of development tools, databases, local- and wide-area networking facilities, as well as "industry-standard" application packages for word processing, spreadsheets and office automation". Alpha Micro says that its dealers now have over 500 applications, and it looks for these to be converted for the 88000 machines under Unix. Alpha Micro says it provides dealers with applications conversion tools such as Portable Alpha Basic to facilitate the migration of applications to the new RISC systems and plans are also under way to provide Unix V.3 and V.4 implementations of the Metropolis database supplied by Alpha Base Systems Inc of Los Angeles, which is one of the company's largest dealers and software developers. Metropolis includes a suite of development tools said to be used by many of Alpha Micro's AMOS dealers in developing applications. Alpha Micro has also decided to contract out manufacture of its iAPX-86 machines and has gone to Fremont, California-based Micronics Computers Inc with a three-year OEM contract for its 80386 and 80486 system boards and related products for the Series 90. Estimated value is \$4m.

...AS NCD PUTS THE 88K IN X-TERMS...

If Motorola Inc's 88000 RISC processor is destined to take more of a back seat in the CPU arena following the firm's alignment with the Apple-IBM axis, its profile in other application areas remains high. Network Computing Devices, Mountain View, California, has come out with a 19" colour X-Windows terminal built around a 20MHz version of the part - its first RISC-based offering. With a resolution of 1280 x 1024, the NCD19c comes in at \$6,400 with 6Mb RAM. NCD now has 19", 17" and 14" colour terminals; 15", 16" and 19" monochrome products.

...BUT BOLT, BERANEK SHUTS DOWN PARALLEL PROCESSOR EFFORT

However in a setback for Motorola's 88000 RISC, Bolt, Beranek & Newman Inc has thrown in the towel on its highly regarded, but deeply unprofitable parallel processor effort and has abandoned its development of the next generation machine and closed down its BBN Advanced Computers Inc unit. It says all but a handful of the 50 employees will be offered work in other parts of the company and that it will continue to seek research and development contracts in parallel processing. It will still seek to license its software and seek consultancy contracts. Annual sales of the Butterfly and T-2000 never exceeded \$10m to \$12m, giving the company only a small share of the parallel processing market that International Data Corp estimates to be worth a modest \$154m all told.

TATUNG CUTS PRICES ON ITS

SPARC-BASED COMPSTATION MACHINES

Building clones of Sun Microsystems Inc's Sparcstations has proved anything but a quick route to riches, and San Jose-based Tatung Science & Technology Inc is taking drastic measures to get its just-launched family of Sparc Compsstations moving. It now charges \$5,290 for a 20MHz 8Mb diskless model; \$5,990 with 19" colour monitor and 207Mb hard disk, and \$6,990 for the same configuration with a 25MHz processor, (UX No 344). The hard disk models include X.desktop from IXI Ltd and either Motif or Open Look user interface. X-cellerator boards are also offered at a special promotional price. The new prices will last at least until year-end, when they are more likely to have to be cut again than they are to go up to the previous level. Tatung says the cuts are the result of aggressive pricing by Sun Microsystems and Silicon Graphics.

USL EXTENDS TUXEDO WITH CLIENT/SERVER EXTENSIONS...

Tuxedo/Enterprise Transaction Processing (ETP), the extensions that let Tuxedo integrate proprietary mainframe-based TP applications as well as personal computers and workstations into a standards-based distributed OLTP network, are now available, according to Unix System Labs (USL). Shown at Unix Expo last October and again at UniForum in January, the pieces released are Tuxedo/Host, a gateway between Unix systems running the transaction manager and mainframes running MVS/CICS, and Tuxedo/WS, which allows PCs and workstations running under DOS, Windows 3.0, SVR4 or OS/2 to serve as fully functional clients in distributed TP architectures.

...AS UI ENDORSES TUXEDO - DETAILS \$30M INDUSTRY INVESTMENT

Meanwhile, Unix International - UI - has taken Tuxedo to its bosom, endorsing it as the transaction monitor reference implementation for Corporate Hub, its proposed OLTP environment. UI is adopting Tuxedo, it says, because of the broad-based industry support it's garnered. But the Corporate Hub framework also includes standard application programming interfaces (APIs) that should allow other API-compliant transaction monitors to be implemented under its scheme. UI has identified the transaction monitor, commercial file system, capacity planning, fault management and symmetrical multi-processing as core technologies of Corporate Hub. Other critical technologies are systems management, security and OSI networking. UI is going to pit Tuxedo against the Transarc technology the Open Software Foundation is backing in its DCE Distributed Computing Environment, pressing what it believes is a technological lead of some 18 months gained from actual availability over Transarc's vapourware, plus its derivative economic advantages. UI president Peter Cunningham estimates the current investment going into Tuxedo itself and Tuxedo-based applications at \$30m a year. Those investments are being made by USL for base development (\$4.5m), by around 20 independent software vendors developing applications (\$3m) - a figure Cunningham claims is ramping up - and by 24 OEMs (\$22.5m) including such names such as Bull and DEC, closely associated with the other side. Cunningham says there are now four or five commercial applications available under Tuxedo, separate from the 40-50 non-commercial applications the RBOCs (Regional Bell Operating Companies) use. UI is hoping that population will grow to 100 by the end of the year.

ACUCOBOL HAS ENHANCED, FULLY REWRITTEN ACUCOBOL-85 2.0

San Diego-based Acucobol Inc, one of the lesser-known "leaders" in portable Cobol compilers, has Version 2.0 of its Acucobol-85 out. A full rewrite of the V1.5.5 release, it is claimed to add 86 significant new features and performance enhancements to the ANSI-85 Cobol compiler, including the Vision indexed file system, which enables files to be moved between machines without conversions, making them as portable as code files, and Vision can be replaced with another file system - Btrieve, C-ISAM or MINISAM. Support for relational databases will be added soon. The terminal manager now offers hot keys that can be defined to run with an associated program, and shadows and titles for windowing. A C interface enables users to call Cobol routines from C and vice versa. Acucobol-85 V2.0 is available for IBM Corp AIX, Data General Corp AOS, Apple Computer Inc A/UX, MS-DOS, OS/2, AT&T Co Unix, Santa Cruz Operation Inc Unix, Xenix and Digital Equipment Corp VMS operating systems; no prices.

...AS LIANT SOFTWARE MERGES ALL ITS FOUR COMPANIES INTO ONE ENTITY

Framingham, Massachusetts-based Liant Software Corp is doing away with the nonsense of operating as four separate companies, each with its own name, and has decided to merge Language Processors Inc, Ryan-McFarland Corp, Oakland Group Inc and Template Graphics Software Inc into a single company that will trade as Liant Software Corp. The company is majoring on the Unix software market, and its language portfolio includes C-scape, LPI-C, LPI-C++, LPI-Cobol, LPI-Fortran, LPI-PL/I, Figaro+, RM/Cobol-85, plus RM/Co*, CodeWatch, RM/Companion, RM/Panels, RM/plusDB. They run on Intel 80386 and 80486, Sun Microsystems Inc Sparc and Sun-3, Motorola 88000 and IBM RS/6000.

OREGON SOFTWARE ADDS VERSION OF ITS C++/C DEVELOPMENT ENVIRONMENT FOR DEC RISC SYSTEMS

Portland, Oregon-based Oregon Software Inc has a release of Oregon C++/C version 2.1 for Digital Equipment Corp's DECstation & DECsystem, Oregon's first port to a RISC environment. Oregon C++/C for DEC includes an optimising compiler that generates fast, compact code from C++ source. It says this enables faster compilation, direct debugging, and faster program development. The Oregon C++/C compiler also includes an interactive source-level debugger, input-output streams and complex libraries, and user documentation. Offering three compilers in one, Oregon C++/C is switch-selectable for ANSI C, K&R C, and C++. In addition to the new DEC support, Oregon C++/C is available for 14 other environments, including Sparc, 680X0, DEC VAX and iAPX-86 processor families from the 80386 up. Single unit licence fees start at \$1,800; the products are to ship within 20 days of ordering. Quantity discounts and OEM contract pricing are available.

POLAROID AND APUNIX TEAM ON DIGITAL FILM FOR SUNs

Meanwhile, Polaroid Corp and Apunix Computer Services have announced a digital film recording solution for Sun Sparcstations. Polaroid's Digital Palette CI-5000 computer film recorder has been integrated with a SCSI device driver, NeWSprint driver and raster file filter developed by Apunix that enable the CI-5000 to work with Sun's RISC workstations under Open Look. High quality output for imaging and engineering applications and all sorts of graphic visuals and presentation formats can be produced. Apunix will market the package to Sun workstation users, prices start at \$6,000.

NEWS ROUNDUP

The User Alliance for Open Systems finally has a leader for its model business case working group, Charles Gardner, IT infrastructure director for Eastman Kodak. The group's first meeting is in Rochester, New York on Tuesday, August 20. If you have something to contribute, preferably fax him at (0101) 716 724 4347 or if you must call (0101) 716 724 2265. Meanwhile, the organisation's next plenary meeting is set for November 20-21 in Reston, Virginia. It'll be part of a week long conference beginning November 18 that includes an "Industry Power Panel" where seven of the industry's top CEOs share their views.

A new controversy has been whipped up around the US Defence Advanced Research Projects Agency's approach to fostering parallel processor research and development. The Wall Street Journal reports that the Agency actively backs Intel Corp, Thinking Machines Corp - and Tera Computer Co, which is a long way from shipping its first machine - at the expense of N-Cube Corp, Maspar Computer Corp, Active Memory Technology Ltd, Meiko Scientific Ltd and Bolt, Beranek & Newman Inc, which, perhaps significantly, has just thrown in the towel on the business - see page five. Critics complain that research institutes get their machines subsidised - or even free - if they choose from one of the favoured vendors, and the procurement process is expedited. If they want a machine from one of the other companies, they're on their own. The favouritism seems to show up in the massively parallel market share estimates made by International Data Corp. The Framingham, Massachusetts research outfit values the whole market for 1990 at \$153m and reckons Thinking Machines Corp had 39.2%, Intel Corp 19.2%, Meiko Scientific Ltd 13.1%, Bolt, Beranek & Newman Inc 8.5%, N-Cube Corp 7.8%, Active Memory Technology Ltd, 6.5% and Maspar Computer Corp 4.6%, leaving a mere 0.7% for all others.

One of our Deep Throats tells us Motorola Inc has quietly split its MPU interests in two, forming a high performance division to house the 68000 and a RISC division to shepherd the 88000 and IBM's PowerChip. Reportedly Mips co-founder and erstwhile hardware development director Les Crudele, recently returned to Motorola (UX No 336), is heading up the RISC division. The boy is certainly getting an education. He also had a major role on designing the architecture that became the 68000, 68010 and 68020.

San Jose Unix multiprocessor builder Arix Corp, ravaged by the phasing out of its OEM contract with Unisys Corp and bemoaning the failure of its partner, IBM Corp, to win the big US Treasury contract, is having to cut its workforce by 24%, handing out pink slips to 44 employees. The company expects to report a fiscal fourth quarter loss worse than the third quarter's \$4m.

Chantal Systems has formed a strategic alliance with Epson America to create a RAID subsystem for Epson's 486 EISA boxes for availability next month. Chantal will supply its Paragon software for mirroring, duplexing, striping, spanning and RAID 5 configurations optimising Epson's fault tolerance and performance.

Young Minds has a new Rock Ridge version of Makedisc, the CD-ROM formatter supporting ISO 9660 and X/Open XCDR standards: Binaries for multiple hardware platforms can now go on the same CD-ROM. Rock Ridge specifications are the proposed standard solution for handling Posix while remaining compliant with existing CD-ROM standards. A utility is provided to support Unix style names on CD-ROMs for platforms lacking Rock Ridge drivers. Price is \$7,000; support another \$950 a year.

NOVELL APPROACHES COROLLARY ON MULTIPROCESSING NETWARE

Symmetric multiprocessing is almost as tricky to implement as is fault-tolerance, so the same names keep cropping up. Now Novell Inc is reportedly in early talks with Irvine, California-based Corollary Inc about applying the latter's skills to the development of a multiprocessing version of Novell NetWare.

...AS COROLLARY READIES C-BUS II SPEC

And Corollary Inc will release a specification for its next-generation C-bus II symmetric multi-processing bus architecture on September 1st: chip and board-level implementations of C-bus II for OEMs will follow. C-bus II supports symmetric input/output and interrupts in addition to existing C-bus functions and can be configured for use with up to 16 50MHz 80486 CPUs. EISA, ISA and MCA buses can be used as companion input/output topologies. The C-bus II specification is available to everyone - there is a one-time fee of \$500 for manufacturers which opt to use the architecture in their products.

FPS COMPUTING CUTS 100, 25%, AND EXECUTIVE PAY

FPS Computing Inc, Beaverton, Oregon - the company's legal name is still Floating Point Systems Inc - is not finding life any easier even with its new Sparc-based minisupercomputers going out the door. The company is still knocking on doors to try to find new sources of capital but in the mean time has had to lay off 100 people, a quarter of its workforce, and cut the salaries of executives by an unspecified but "significant" amount. All other employees' salaries are frozen. Electronic News has been going back through the records and finds that the company has now racked up five consecutive years of losses, and that they now add up to over \$100m. FPS was hit by delays in getting the ECL Sparc-based machines ready for shipping and by the fact that it has so far only managed to find customers for about 10 of the machines.

IBM, CONVINCED OF THE NEED FOR PEN-UNIX, DEMONSTRATES PEN EXTENSIONS TO X-WINDOWS

IBM Corp, convinced that there is a demand for Unix on pen-based computers, has been demonstrating pen extensions to the X-Window System at the recent Pen Computing '91 conference in San Francisco, Microbytes Daily reports. Using an integrated display tablet and a P70 computer running a "shrunk" version of AIX, the prototype featured an X/Motif application with pen-based widgets. A modified X-Window server detects whether the stylus is in a "pen-aware window." If so, the event is passed to the client process, where the input is either sent to a handwriting "recogniser" or saved as a bitmap image. If the stylus is not in a pen-aware window, the server processes events as mouse clicks. According to Doris Chow of IBM's Application and System Software, the company has been in discussion with the X Consortium about possible distribution of IBM's pen extensions to X developers and users. Currently, the pen work is a research project and Ms Chow wouldn't comment on possible products that might result from the research. When Ms Chow was asked why conference attendees might have laughed at the idea of pen computing on Unix, she said that Unix's memory requirements are probably the issue - she points out that the modified version of AIX uses less than 2Mb.

BIG GUNS TO FIRE OFF AT UNIX SOLUTIONS

Already bursting with 35 conference sessions, 10 of them corporate user case histories, plus 12 tutorials equally balanced between rivals Open Software Foundation and Unix Systems Laboratories - the fledgling Unix Open Solutions trade show and conference, September 4-6 in San Jose, has pulled off another coup. It has persuaded the masterminds of the "Deal of The Decade" - AT&T, Pyramid and Computer Sciences and friends - to weigh in with their analysis of the big deal and its strategic importance to the industry. Ed Scott, the Pyramid executive vice-president who drove the deal, will lead the panel presentation on Wednesday afternoon, September 5th. It will be open to all attendees and exhibitors on a first come, first served basis. Heavy attendance is expected. In addition to Pyramid's Scott, the panel will include senior executives from AT&T, Computer Sciences and the Internal Revenue Service. The timing of the sale meshed neatly with Open Solutions director Ronald Scott's (no relation to Pyramid's Scott) desire to organise a panel representation on the government's increasingly important role in establishing de facto standards. "No doubt a lot of companies and industry associations are asking: 'What are the implications of the deal on my organisation?'" said Scott. "We hope the special briefing and the follow-on question and answer period will provide some early guidance." If nothing else, it is the icing on the cake for the one-year-old show, which has attracted both SCO's Doug Michels and Sun's Scott McNealy as keynote speakers, not to mention attendees who are real end users, not the technical types who turn up at other Unix and open systems events.

MT XINU ADDS SCSI SUPPORT, COLOUR X-WINDOWS SERVER FOR VGA TO ITS MACH ENVIRONMENT

Berkeley, California-based software house Mt Xinu Inc has added SCSI support and a colour X-Window server for VGA displays to its Mach386 implementation of Carnegie Mellon University's Unix-derived Mach operating system for Intel 80386-based AT-bus computer systems. The binary system, launched in January, is targeted at commercial developers, academic researchers, and users with 80386-based machines that learned Berkeley Unix at university. The software runs on AT-bus IBM-compatible personal computers. Mt Xinu also offers source versions of Mach for users needing access to source code. And users with colour VGA displays can develop or work with Unix-based colour graphics applications. The new X server uses the extended eight-bit modes of super VGA cards, and the VGA colour look-up table to display 256 of 262,000 possible colours at a time. This enables applications to be run which use smooth shading or closely-spaced colours. The Mach operating system, which has been adopted by the Open Software Foundation, was designed as a foundation for more modern and extensible Unix-based software systems. Besides the 4.3 BSD interface, Mt Xinu Mach386 includes the TCP/IP networking from Berkeley's Tahoe Release, NFS, the X-Window System V.11 R.4, and GNU utilities from the Free Software Foundation.

unigram X

The Weekly information newsletter for the UNIX © community worldwide

LEAN AND HUNGRY SUN TOPS THE \$3,000m MARK

All is seemingly very healthy at Sun Microsystems Inc, which has just reported net profits for the year to June 30 up a staggering 71% at \$190m on revenues that rose 31% to \$3,221m. Half the company's revenues are generated outside the US, with a rough 30/20 split between Europe and the Pacific Rim. The UK turned over £140m. The operating margin hit 10.7% in the fourth quarter, and revenue per employee increased by 20% to \$258,000 in the year, a measure which Sun rates as demonstrating its "lean and hungry structure". Research and development spend for the year dropped to 11% from 12%. Sun boasts some \$834m in cash, which it will be putting towards its expansion programme; the company wants to see indirect sales channels growing - these accounted for 42% of revenues at the end of 1991, up from 32% at the beginning of the year - as well as the continuation of its campaign to penetrate Eastern Europe. New subsidiaries have been established in Finland and Belgium in 1991 and new distributors appointed in Denmark and Norway. The company's Scottish factory in Linlithgow, near Edinburgh, which turns out Sun's highest shipping desktop systems, has increased its staff numbers to 350 from 180 over the year. Sun prides itself on its healthy spread over different market sectors - leading the worldwide market for workstations and servers with 38% and 380,000 installations, according to Dataquest/IDC figures, the company is also making moves on the high-end personal computer market, persuading customers that, even for administration staff, that little bit extra efficiency justifies spending £3,000 (with discount) on one of Sun's entry-level workstations. Sun shipped 49,000 units in the fourth quarter, with the SparcStation 2 accounting for the largest portion. The commercial, technical and government/research markets each account for one third of Sun's sales, the commercial market representing the best potential for future growth, said UK and Nordic vice president Bill Passmore. The energy and utilities market, and the finance sector have proved strong areas for Sun, and Passmore predicts that the health sector, currently at an embryonic stage, will be a source of future growth.

Opinions are divided over the launch date for the new IBM "RS/6000s" (see front page): latest US press reports favour mid-September, but other sources are more specific in citing October 22nd as the red letter day.

Intel Corp's mysterious iWarp chip research project, which caused a stir a few years back amongst the Transputer community - it's said to be designed along much the same lines - may at last be being prepared for a commercial launch, according to *Parallelgram*: Intel apparently showed interest in exhibiting at the UK's Transputer Applications '91 Show (to be held in Glasgow's Moat House Hotel, August 28-30), but has since pulled out.

Paris-based *Sogeti Group's Gemini Consulting* subsidiary has taken an undisclosed minority stake in Mountain View, California-based *ParcPlace Systems Inc* and the two are to work together on enhancing *ParcPlace's Objectworks/Smalltalk* object oriented technology for *Gemini's* client base: initially the technology will be interfaced to corporate information sources such as databases, including older heirarchical systems such as *IMS*, as well as relational databases like *Oracle*, *DB2* and *Sybase*.

The latest release 9.0 of Northampton, Massachusetts-based *VI Corp's DataViews* graphical user interface toolkit integrates *Motif* and *Open Look* widgets as input objects, and allows users to import photographic images or bit-maps into their interface designs: no prices given. And *VI Corp's DV-TekBase* bridge now allows users to access data in its *TekBase* database from *DataViews*.

Unix Systems Laboratories completed its board last week naming *Larry Sonsini* as the independent director unaffiliated with *AT&T* promised when *AT&T* loosened its grip on *USL* and sold off 20% of its shares a few months ago: *Sonsini* is chairman of the executive committee of *Wilson Sonsini Goodrich and Rosati*, a Silicon Valley law firm of 200 attorney. *Sonsini* specialises in corporate law, securities, merger and acquisitions with a sub-speciality in start-ups. He was named for his strategic advice and contacts in the Valley. *Unix International* president *Peter Cunningham* was made an ex officio member of the board which includes six directors named by *AT&T* and three named by the new co-owners.

Apple Computer Inc was the prime mover in forging the alliance between the alliance with *IBM*, according to *Apple* chairman *John Sculley*: chief financial officer, *Joe Graziano* added that there will likely be "tens" of contracts signed with *IBM* rather than a single one - separate contracts will be signed for each of the various pieces of technology in the agreement.

Sony Corp finally confirmed what has been widely known for many months, that it will manufacture a portable computer for *Apple Computer Inc*, but declined to give any details at all on the machine. *Sony* reportedly already supplies about 70% of the content of *Apple's* *Macintosh* computers.

Sculley told the *Wall Street Journal* that he and *Michael Spindler* started looking for a partner early last year and visited the top executives of all the major computer companies: high on *Sculley's* list of priorities was the need to differentiate *Apple* computers from *Microsoft Corp's* *Windows 3.0*, hence the object-oriented *Pink* development - but, again showing perspicacity seldom found in computer company chiefs, he didn't believe that *Apple* could successfully introduce a major new operating system on its own, saying it needed another significant player backing it to make it a success.

IBM Corp has removed *Terry Lautenbach* from his position between the personal computer and workstation divisions and top management, and made him a member of the management committee in charge of mainframes, networking systems, programming systems and technology products: instead of reporting to *Lautenbach*, *James Cannavino*, running *Personal Systems*, and *Robert LaBant*, *Application Business Systems*, will report direct to *IBM* president *Jack Kuehler* in a move intended to speed decision making at the two units.

IBM Corp and *Lotus Development Corp* last week they will offer the 1-2-3 spreadsheet for the *RS/6000* under *AIX 3*, but pricing, marketing and availability will be announced at a later date, the companies said.

Unix software publisher *Qualix Group Inc*, *San Mateo, California*, has a new electronic mail package which is claimed to save time by automatically sorting, prioritising and forwarding messages, notifying users when they are received: developed by *Mountain View, California-based MindWork*, *Personal Postmaster* costs from \$100.

Even the great *Homer* sometimes nods: it seems we incorrectly identified the source of *IBM's* new graphics enhancements for the *RS/6000* as *Evans & Sutherland (UX No 344)*. Au contraire. It's *IBM's* own stuff. But we were right about it dumping *Silicon Graphics's* sub-system.

In reference to this week's front page story on *X/Open's* new charter, it's more than likely *X/Open* will find any number of user groups willing to be subsumed if the guarantees are right. It's a terrible lot of possibly redundant volunteer work that detracts from the users' essential mission.

Xtra, X/Open's user requirements conference, is being held between November 13-15 in *Washington DC*.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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19 23 1991

The weekly information newsletter for the UNIX ® community worldwide

London, August 19-23 1991

Number 347

IBM "FINALLY READY WITH OSF/1 UNIX FOR ES/9000"...

Next month IBM Corp is expected finally to bring out its first native 370 Unix, a version of the Open Software Foundation's OSF/1. According to those involved in the development project, the new environment will be commercially available in the middle of next year, after a customer test programme has been completed. With the inherent multi-processor support and the introduction of threads - where parts of applications can run simultaneously across the independent processors - OSF/1 for mainframes is expected to be a real improvement on the current AIX/370, not least since the current version still has to be guested under VM - Amdahl Corp has had a native 370 Unix for about five years now. It is still unclear whether a version of OSF/1 will be released for the RS/6000 (UX No 307), *Computerwoche* comments, or what sort of AIX connection will emerge for the Macintosh as a result of IBM's new alliance with Apple Computer Inc. The new Posix and X/Open Portability Guide 3-compliant operating system, according to developers at IBM's Kingston lab, is fully compatible with AIX/370. IBM has chosen the TCP/IP protocol as its means of communication, and OSF/Motif 1.1 will be the graphical interface. It has been designed to meet the low-level C-1 security rating from the US Orange Book of standards - later versions of the operating system are expected to get up to a B-1 rating. IBM will be offering optimising C and Fortran compilers, like those already available for MVS and VM. The new system, according to the Kingston Laboratories spokesman, will use an RS/6000 as a front end for TCP/IP and X25 communications, and IBM will offer the Foundation's Distributed Management Environment - see below.

...AS UK "PUTS BRAKES ON DIRECT RS/6000 SALES TO BUSINESS SECTOR"

IBM's delicate positioning problems between its proprietary AS/400 and "open" RS/6000 lines are continuing, according to a number of industry sources in the UK. Here, IBM's policy is to sell two-thirds of its RS/6000s indirect, through distributors and value-added resellers. The other third of direct sales go mostly to the big corporates, claims IBM. But it appears that IBM's direct sales force has been doing a little too well in taking the RS/6000 into traditional AS/400 territory, and IBM is having to apply the brakes. "The problem is, IBM is selling more RS/6000s than AS/400s", claimed one source, "and now the sales team has been told it can only sell the RS/6000 as a single-user workstation for applications such as CAD/CAM. If they do sell it as a multi-user business machine, they don't get any commission." Market research group IDC claims that IBM sold 15,000 RS/6000 units in 1990, mostly as technical workstations, but business applications are gradually becoming available. IBM recently struck a deal with Lotus Development Corp to port the Lotus 1-2-3 spreadsheet to the RS/6000 (UX No 346) - it will be available in the first half of 1992.

OMG SAYS OBJECT TECHNOLOGIES "WILL MERGE BY THE 26th"

Object Management Group chief Chris Stone told Unigram.X last week that he has every confidence the massive merger of technologies earmarked to become the OMG's Object Request Broker standard will be pulled off by the August 26 deadline OMG set in June (UX No 337), and that the thing will work. The two warring submissions, one from Hyperdesk/DEC and from Sun, Hewlett-Packard, NCR and Object Design, which threatened to tear OMG apart, are under the gun to merge lest OMG throw them both out, re-open its request for technology process and start all over again. The groups are meeting this week to finish the specification which will then be turned over to OMG. Its task force is to vote on its acceptability on September 10. It then goes to the technical committee for rubberstamp approval on September 11. Meanwhile, OMG is equally confident IBM and Apple will adopt its Object Model, ORB and Type Repositories in whatever it is they're up to in this joint venture with Metaphor/Patriot Partners. Folks involved in the Patriot/Pink combine will only say discussions are afoot as to what should be added or changed and how the product schedule will unfold.

CONVEX TO USE R4000 IN MINISUPERS?

The march of RISC technology continues, and US reports now confirm that Convex Computer Corp is said to be considering the 64-bit MIPS Computer Systems Inc R4000 RISC as the basis for the follow-on to its new C3400 mid-range machine as an alternative to developing the C3400 processor further (UX No 345). According to *Electronic News*, the Richardson, Texas-based minisupercomputer builder has two projects running in parallel, one a development of the C3400, the other, code-named Medusa, using up to 56 R4000 processors, and both now look likely to deliver about the same performance when they are ready to ship sometime in 1993. The company had been planning to wind up the 50Mhz clock on the C3400 to around 100MHz, but is said to have abandoned that idea, although other enhancements are in the works for the new machine. The RISC family would be a companion product line to the C-series and would not be binary-compatible, although it is expected to have a slot for a C3400 processor. The prime future of the C-series is seen to lie in future iterations of the top-end Gallium Arsenide C3800.

NOW AMDAHL WEIGHS OTHER RISCs FOR NEW MAINFRAME

It was thought earlier this year that Amdahl Corp's RISC development effort had been settled on the Sun Microsystems Inc Sparc design (UX No 310), for which its 44% shareholder Fujitsu Ltd is a licensee, and is said to be developing a high-end version of the RISC with Amdahl. But the Sunnyvale company told analysts last week that while the Sparc was its primary focus for a future RISC-based mainframe - designed to run its UTS implementation of Unix - it is still evaluating other RISC architectures, although it declined to be specific when asked whether the MIPS Computer Systems Inc R4000 or IBM Corp's Rios were among those under evaluation, saying only that it was looking at "several others" apart from Sparc.

SEPT 17 IS RED LETTER DAY FOR FOUNDATION'S DCE, DME

As well as announcing general availability of the basic elements of its Distributed Computing Environment on September 17 (UX No 344), on that day, the Open Software Foundation will also reveal the winning technologies in its search for a Distributed Management Environment, with roll-outs in New York, Tokyo and Paris. Evaluation of the DME submissions has been the responsibility of the OSF's European research and development operation in Munich. Whilst OSF officials remain tight-lipped about the progress - and number - of the last 27 submissions to its DME request left in the reckoning, it will likely be at least 12 months time before vendors begin to deliver DME-compatible products.

EUROPEAN ROUNDUP

Kalamazoo Plc's Kalamazoo Computer Group hopes to help **Sequent Computer Systems Inc** to fill in some of the big hole left by the dwindling of OEM sales to **Unisys Corp** by buying five **Sequent Unix** machines worth over £1m to develop a new Oracle-based on-line business application that is intended to be sold with the hardware as a turnkey system: **Sequent Symmetries** were chosen after **Kalamazoo** benchmarked them against **IBM Corp's RS/6000** and a machine from **NCR Corp** to establish which machines could support 400 terminals interacting with large databases; it is taking the 80486-based **S2000/200s** and **400s**.

The woes at **SGS-Thomson Microelectronics NV**, which has yet to turn a profit, have spilled over to its **Inmos International Plc** acquisition, also losing money. **Inmos** is to cut 300 jobs from its 950 workforce with 100 going following the closure of its assembly and test plant in **Newport**, the work transferring to **Malta**; 200 more go this month.

In the UK, **Bull HN Information Systems Ltd** has a £2.1m order from the **Derbyshire Constabulary**. Two **DPS 6000 model 632s** running 150 terminals will initially support the force's existing, but heavily overworked **Bull mainframe-based** command, control and crime information system. The force invited a sole bid from **Bull** on the grounds of urgency: the completed crime information service will go live by **January 1993**.

In the UK, **British Telecom** has signed up for **Peterborough Software's Unix-based Open Door** personnel and payroll system in a deal said to be worth £1.8m: it'll be interfaced with **BT's** existing Oracle-based management information system and will be introduced next year as a pilot scheme, going live during **1994**.

Oilfield Systems Ltd's **Quadrat**, **Winchester, Hants**, has an X-**Windows** server that allows large windows to be extended across multiple screens: the software runs on **Sun Microsystems Inc's Sparcstation 2** or **IPC workstations** under **Motif** or **Open Look** - no prices given.

Mike Harrison has resigned his job as managing director at **Poquet Computer Ltd**: he has been appointed managing director of **Oracle UK**, **Bracknell, Berkshire**.

3L Ltd, **Livingston, Scotland**, has released version 2.2 of its parallel C compiler for 16- and 32-bit transputers: it's priced at £600, upgrades from version 2.1 cost £110.

London-based **MEC Information Systems Ltd** is offering a new Unix spreadsheet - **Tactician** - which it says can import and export data to and from a range of other spreadsheets and databases: no prices given.

UK, Oxford-based **Nextage Systems Ltd**, is to market **Atlantix Corp's** **Axcess** integration package on **IBM's RS/6000 AIX** systems in the UK: **Axcess** allows transparent access to files, databases, applications and peripheral devices between **Unix, MS-DOS** and **OS/2 workstations** across **LAM Manager, Novell, NetBIOS** and **TCP/IP networks**.

In line with its policy of growing its value-added reseller channel by 20% a year over the next five years, **ICL** has appointed 10 new VARS: **Thompson Moore Associates, Manufacturing Control Systems, Medical Portfolio Trisoft plc, Timeslice, Norsk Data, Open Solutions plc, CFM Group, EASAMS** and **EPP Computer Services**.

Open Systems Marketing Ltd, **Windsor, Berkshire**, has signed up to distribute **Atlanta, Georgia-based MaxTech Inc's** **Double Vision** Unix systems management tool in the UK.

In the UK, **OS/2 Extended Edition** users can now participate on **DECnet**, local area transport and maintenance operational protocol networks with a new release of **Ki Research's KiNet** for **OS/2** which is being offered by London-based connectivity outfit **Communic8 Migration Software**: an **Ultronix** version of **KiNet** will be out in **November** - **Ultronix** has **DECnet** and **LAT** support, but only on **DEC** systems.

Inphase Software Ltd, **Sandhurst, Surrey**, is launching an **Open Look** version of its executive information system at the **Sun User '91 show** at **Birmingham's NEC** between **September 10-12**: **Inphase/EIS** supports a variety of other platforms - **Motif** and **Windows/3** versions will be previewed at the show.

Continental Europe is catching up with the US when it comes to developments in X-**Windows** technology, according to **Niall Mansfield**, chairman of the **European X User Group**, largely because state-owned or state assisted bodies in countries such as **Scandinavia** or **France** are pushing developments: accordingly, speakers from **France** and **Germany** will join the X pioneers from the US speaking at the group's annual conference and exhibition this year, to be held at **Queens College in Cambridge** between **October 1st and 2nd**.

Ferranti International has set up an open systems group to market the company's **OSI** and **OEMmed Unix** system products.

In the UK, managing director of **NCR Ltd**, **Rex Fleet**, is retiring at the end of the year, he will be replaced by **Patrick Mill**.

The UK's **Scientific Engineering Research Council, SERC**, has installed its eight-processor **Alliant Computer Systems fx/2800** system at **UMIST**, the **University of Manchester Institute for Science and Technology** department of mechanical engineering.

Solbourne Computer Europe, **Swindon, Wiltshire**, has begun supplying **500Mb, 3.5" SCSI** disk subsystems for its **S4000** and **Series5/500 Sparc-based** systems: they cost £2,750 in addition to basic prices for the machines.

The **Sema Group's** **CASE** arm, **Yard Software Systems**, says its **Lifespan** configuration management software now supports the **OSF/Motif** graphical user interface.

Unix International's UK marketing group has added **Oracle UK** and **Interactive Systems Corp** to its ranks: based in **London** the group now has a roll-call of 25.

Wyse Technology is now offering **Alpha Base Systems Inc's** database and office automation software on its **Series 5000i** and **7000i** Unix systems.

ICL Plc has appointed **Windsor, Berkshire-based Information Architects Ltd** as an associate in its **Software Partners Programme**; the company's key product, **Architech**, runs on **ICL mainframes** and supports the development of commercial applications for **VME, IDMS/X** and **TPMS** environments, and integrates with **ICL's** repository, the **Data Dictionary System**; the company is to release a Unix version in **September**.

Cupertino-based Tandem Computers Inc says that **Compta Equipamentos E Servicos De Informatica SA** has become **Tandem's** exclusive distributor in **Portugal**: the **Lisbon** company will market and support **Tandem's** transaction processing systems and its fault-tolerant Unix machines.

Hewlett-Packard says new compiler enhancements have pushed up the **SPECmark** performance of its **Series 700 Snake RISC** workstations: the model 720 is now rated at 59.5 **SPECmarks** - up from 55.5 - the 730 and 750 climb from 72.2 to 76.8.

Philips Electronics NV is said to be readying **CMOS** and **BiCMOS** cell-based derivatives of **Sun Microsystems Inc's** **Sparc RISC** chip for high-volume embedded applications: the chips, for the merchant market as well as **Philips' internal** use, are expected early next year.

CAE Groups' Barcelona-based Farc SA engineering consultancy is to distribute **AT&T Istel's** **Witness** simulation package in **Spain**.

Informix Corp will soon announce that it is to license and package lower **CASE** tools from **Edmonds, Washington-based FourGen Software Inc** - in particular **Informix** is interested in the screen painter and menu builder: **Informix** says that this deal in no way undermines its agreement with **Bournemouth-based Systematica Ltd** whose **Virtual Software Factory** it is using to build a "concept to code" **CASE** tool, as the **FourGen** products are for small development teams and do not require expensive workstations.

Ashton-Tate's latest release of **dbase IV** for **Sun** supports **OpenWindows**, including toolkits for designing **Open Look** applications.

WORKSTATIONS DOMINATE UK UNIX SALES, AS MULTI-USER SHARE DECLINES

In June, sales of Unix systems and software to UK computer dealers outstripped those of MS-DOS, claims a new report from Twickenham, Middlesex-based Wharton Information Systems. "DOS generated £106.3m, and Unix, when the full system is configured and priced, generated £152.7m." According to the report, "the two spectacular performers were Sun Microsystems Inc and ICL," which dominated sales of workstations and servers respectively. However, the growth of workstation business, which accounted for 67% of Unix sales - servers took 14% - is matched by the relative decline in sales of multi-user systems, which represented only 7% of systems sold in that period, with Altos Computer Systems taking top spot there. Personal computers accounted for 12% of Unix sales, with IBM Corp leading Compaq Computer Corp in shipments. AT&T's Unix System V is the dominant operating choice, with Sun's Sparc RISC chip the preferred processor. Interestingly, two years ago, only 4% of single-user personal computers sold by the dealers on Wharton's panel were shipped with Unix - the figure now is over 20%. Of Wharton's dealer panel, which is surveyed every month, half said they have reduced staffing levels, product ranges and promotional budgets and are heading for niche markets as fast as they can in response to the current UK recession. However, whilst the other half have frozen or reduced staff levels, they have increased both their product ranges and promotional budgets in pursuit of the box-shifting market.

ARCAID TEETERS ON THE EDGE

Unfortunately the rise and rise of the Unix workstation market seems to have bypassed Arcaid Design Systems, the Edinburgh-based computer-aided design Unix software outfit. It has ceased trading and may go into liquidation following a slump in sales that chairman Hunter Cairns attributes to the general economic downturn in the UK. A management buyout is currently being negotiated in an attempt to save the firm from total collapse. "Sales are absolutely flat," says Cairns, though he believes that the firm could survive by trading solely on its existing customer base if pushed. Although Arcaid's offices are unmanned at present, the firm's half-a-dozen employees are understood to be working from home. Arcaid last year launched an X-Windows version of its drawing-board software (UX No 304).

MAC-LIKE INTERFACE FOR PICK?

PickTel, the erstwhile Pick subsidiary now an independent entity, is hopeful of closing an exclusive deal that will put a third-party object-oriented Mac-like interface over Pick on Unix SVR4. Such a move, PickTel officers feel, would make Pick on Unix suitable for CASE work and popular with the Big Six firms like Peat Marwick McLintock and Anderson Consulting. PickTel has now washed its hands of reselling AT&T hardware and is simply focusing on the software it resells under licence from Pick: Pick on SVR4 for 386/486 boxes and other AT&T gear. It is currently in the process of porting to Pyramid Technology's new MIPS Computer Systems Inc RISC-based machines. PickTel expects to be delivering the interface, internally code-named I-sed, by the end of the year.

COMPAQ PREPARES NEW LOW-END

In an attempt to reverse the trend which saw the company turn in disappointing figures for the last quarter, (UX No 335), Compaq Computer Corp is said to be readying as many as a dozen new low-cost machines for release between now and the beginning of next year. Intel Corp 80386 and 80486 server systems will be amongst them - all are expected to come with upgradable CPU elements - though they'll include none of the technology which is specific to the SystemPro series, itself thought to be awaiting a four-processor upgrade due sometime next year.

MICROSOFT ADOPTS INSIGNIA'S PCSOFT MS-DOS EMULATION TECHNOLOGY

Insignia Solutions Ltd, High Wycombe, Buckinghamshire, has received a tremendous fillip for its SoftPC approach to emulating MS-DOS under Unix and other operating systems, winning none other than Microsoft Corp itself to its cause. The Redmond, Washington micro software giant has bought a licence to the software emulation of the Intel Corp iAPX-86 environment, which recreates in software what applications see on an IBM Corp AT Personal Computer. The licence gives Microsoft the right to incorporate Insignia's technology in future products, but specific terms of the agreement were not disclosed. Microsoft says it intends to use the technology to preserve customer investment in MS-DOS and Microsoft Windows applications in future system software products, on both higher iAPX-86 family machines and on other hardware. "With the recent inroads we have made into the Macintosh, Unix and Intel platforms, we believe this strategic relationship will broaden Insignia's influence in the MS-DOS marketplace," Insignia said. SoftPC is available as a packaged product for Sparc, NeXT and Apple Mac platforms: other Unix workstation vendors have OEM agreements with the firm. It is not available on IBM's RS/6000. The privately-held Insignia was formed in 1986 with backing from UK and Dutch venture capital firms. It employs 110 people for sales of \$8m last year and has US bases in Andover, Massachusetts and in Sunnyvale, California.

JSB SETS UP IN SCOTTS VALLEY

Thriving UK software house, JSB Computer Systems Ltd, Macclesfield, Cheshire, is getting enough stateside business for its Multiview family of Unix and MS-DOS windowing environments that it is taking itself off to Scotts Valley, California, where a US operation will be up and running shortly. JSB has poached the Santa Cruz Operation Inc's former director of product marketing, Carl Koppel, to head-up the unit, which is located on the opposite side of the street from the headquarters of hungry Borland International. Koppel will be joined by JSB's UK OEM sales manager, Nick Outeredge: JSB managing director Steve Jones says the operation will have a complement of nine by the end of its first year. Initially the operation will focus on working more closely with manufacturers competing in the channels on contracts. Then it'll turn its attention to the non-aligned systems integrators and setting up its own distribution network. JSB will roll out version 3.1 of its Multiview Desktop product at this week's SCO Forum in Santa Cruz, California.

HEWLETT-PACKARD PLAN FOR PRECISION ARCHITECTURE FAN CLUB PROGRESSES...

Hewlett-Packard Co's plans to build a rival to Sparc International, 88open and the other RISC supporters' clubs around its Precision Architecture design is making progress, and it is reported from Tokyo that as well as Hitachi Ltd, claiming to be building a Precision Architecture-based mainframe, Mitsubishi Electric Corp will be a prominent member, alongside Samsung Electronics Co of Seoul, South Korea. IBM Corp is expected to rally its own supporters' club around the Power PC once its agreements with Apple Computer Inc and Motorola Inc are in place.

...BOOSTS PERFORMANCE WITH NEW RELEASE OF X SOFTWARE

Hewlett-Packard Co has an upgrade to its X-station software that it claims improves performance by up to 25% and adds several new features to the HP 700/RX line. The company claims the new software enables the X-stations to deliver up to 90,000 Xstones of performance on mono systems, 86,000 Xstones on colour, and says this bests the price-performance of comparable Network Computing Devices Inc and Tektronix Inc X-stations. Additional features include terminal configuration upload, which saves installation time when adding HP 700/RX stations to a network; scalable-font support, Sun Microsystems Inc host boot tape, and support for VGA monitors; shipping now.

LaCAVA FIRMS-UP DEC'S UNIX PLANS

Speaking in UniForum's Communixations magazine, the international association of Unix systems users' monthly bulletin, DEC's vice president of Unix software and services, Dominic LaCava, has been giving a progress report on the firm's - sometimes confusing - Unix operating system strategy which now encompasses Ultrix, OSF/1, ACE Open Desktop, as well as OS/2 and VMS on the sidelines. Before the Advanced Computing Environment consortium was a twinkling in anyone's eyes, DEC had planned to merge its Ultrix Unix implementation with the Open Software Foundation's OSF/1 operating system by adding Ultrix binary compatibility to the Foundation's Mach-based system software. This is scheduled to happen with the release of Ultrix version 5 later in the year, as planned, says LaCava. Once the version of Open Desktop that Santa Cruz Operation is developing for ACE's MIPS Computer Systems Inc's RISC hardware platform is ready - DEC is supplying the OSF/1 element to SCO, and it'll include compatibility with SCO's existing Open Desktop and Xenix products, as well as Ultrix (UX No 330) - DEC will license that version back and ship it as its Unix offering. It won't deliver a separate Ultrix-OSF/1 product, though it will take time to add symmetric multi-processing and other features to it, says LaCava. As far as the rest of its operating system strategy goes, DEC will also support Microsoft Corp's OS/2 3.0, or New Technology, on Intel Corp's iAPX-86 and MIPS' ACE architecture. NT will have Posix compliance and incorporate some features of OSF/s Distributed Computing Environment, DCE. Likewise, DEC's proprietary VMS operating system will become Posix-compliant and include the OSF/Motif graphical user interface along with DCE. LaCava also expects future OSF technology developments to be incorporated into Open Desktop releases. LaCava says DEC will respond to the current crop of low-end, high-performance Unix systems coming on to the market by releasing its own low-end machines running Open Desktop. These are already under development, he says. At the high-end, its two year-old 5800 series will be superseded by symmetric multi-processing MIPS R4000 systems geared for on-line transaction processing. LaCava expects at least three generations of products to utilise that processor, taking those systems beyond the year 2000. DEC is expected to begin recruiting value-added resellers for its ACE platforms next month with a "Welcome to the World of ACE" roadshow that it plans to take around the US.

TERA CHIP SET TO SLASH COST OF DOING SPARC SYSTEMS

Santa Clara, California-based Tera Microsystems Inc claims that its chip set for building clones of Sun Microsystems Inc's Sparcstations will enable companies to bring colour machines to market for under \$5,000 (UX No 344). Called microCore, the set consists of four chips and is claimed to be the most highly integrated implementation of the Sparc support logic on the market, providing all the functionality for a full colour Sparc workstation apart from the processor - it says that the set enables the motherboard to be built with a total of 19 devices plus memory - and only two of the chips are required to make low-cost monochrome, diskless or portable Sparc workstations. Tera believes that the one millionth Sparc system will be shipped in 1993 and that in 1994 over a million Sparc systems will be shipped. Unlike the Sparc CPU makers like LSI Logic Corp and Fujitsu Ltd, which are concentrating on the integer processing unit, floating point unit and cache and memory management systems, Microbytes Daily notes, Tera intends to ignore the integer and floating point processing units and concentrate on the cache, memory management, graphics, input-output, glue logic, and memory control subsystems, leaving manufacturers to choose their own chip supplier. An entry level chip set consisting of a System Controller and an Input-Output Controller operating at 25MHz, enough to build a mono system with no SBus expansion, will cost \$400 when you buy 5,000-up. The full set at 33MHz is \$745 for 5,000-up.

SOFTWARE MOGULS HAS BACK-UP SYSTEM FOR COMPLEX NETWORKS...

A Minneapolis-based turnkey software house, Software Moguls Inc, is challenging network specialists Legato Systems Inc (see below) with a recently launched networked backup and extraction product that claims to be the first to deal with heterogenous networks. The product, SM-arch has a client-server architecture which allows it to run on various Unix platforms, such as the IBM RS/6000, Sun Sparcstations, Intel 386/486, and allows for backing-up DOS, Macintosh, VAX/VMS and other Unix-based clients using a Berkeley sockets approach. The company, which previously had a non-graphical backup product that worked over NFS, developed SM-arch in-house earlier this year: it runs under the OSF Motif or Open Look graphical user interfaces, or as a character-based applications for dumb terminals. Price is \$4,000 for the server, \$500 for the client (\$125 for PC client), but pricing is usually done by site licence. A number of installations are in place around the Minneapolis area. The product will be demonstrated at Unix Solutions in San Jose from September 4th-6th.

...AS LEGATO EXPANDS NETWORKER WITH MORE PORTS, PC AND MAC

Meanwhile, Legato Systems, whose Networker Unix backup product has been on the market for around a year, has added the IBM RS/6000 to its list of supported platforms, and has struck up a licensing deal with Intergraph Corp to make the product available on Intergraph Clipper and Sparc-based systems. The Intergraph deal is similar to Legato's existing deal with Sequent, where Legato turns over the source code to the OEM partner for porting - it has a further agreement with Silicon Graphics in the pipeline that is likely to be announced over the next few weeks. Legato insists that each port should be proved to work with all other ports. All should be available this Autumn. Current platforms that support the Networker product include Sparc, DEC VAX Ultrix and DECsystems, and PCs via TCP/IP. Support for Macintoshes is promised before the end of the year, when a PC-LAN version should also be announced. In the UK, Networker is available through Unipalm in Cambridge, and Legato also has representation in Sweden, Germany and France. Amdahl, Texas Instruments, 3M, Boeing and Memorex are amongst the large users of the product. Legato submitted its technology to the Open Software Foundation's Distributed Management Environment RFT, but OSF later decided not to include backup as part of the requirement at this stage. Legato established itself with the PrestoServe hardware and software package for boosting the performance of Sun's Network File System - that is now bundled in with high-end servers from Sun and DEC, with Sun shipping an S-bus version since June.

IXI HAS NEW VERSION OF DESKTERM

UK, Cambridge-based IXI Ltd has released version 1.2 of its Deskterm developers' kit, which it claims better supports developers who do not have access to - or do not want to change - application source code, but who do want to add a Motif graphical user interface onto their application. IXI has appointed Tecsys, StLaurent, Quebec; MultiUser Systems, Hollis, New Hampshire; and Bluestone Inc, Mount Laurel, New Jersey, to distribute Deskterm in North America. Deskterm allows developers to migrate existing applications to run in a windowing environment without the need for extensive knowledge of the X-Windows environment. Tecsys - a Canadian Uniplex distributor - is using Deskterm to put a Motif front-end on to its Informix-based wholesale distribution and financial applications: it's looking at other products to distribute too.

INGRAM ADDS SYSTEMS SALES DIVISION...

Santa Ana, California-based Ingram Micro D's vice president of technical and marketing strategy, Bruce Frederickson, was waxing lyrical back in June about a forthcoming shake-up in the US distribution market, (UX No 338), with the probable entry of the likes of Apple Computer Inc into the scheme of things. Now the firm is setting-up a Systems Sales division and will recruit value-added resellers and dealers to sell CISC and RISC workstations, multi-user systems and personal computers. Ingram hopes to sign up to five major vendors - the first within a month - and expects to generate at least \$50m in the first year for each product line the new division offers. Hewlett-Packard has been touted as an initial partner, though an agreement with one of the big three - Apple Computer Inc, Compaq Computer Corp and IBM Corp - is thought to be a prize that Ingram is eyeing with this latest strategic manoeuvre.

...SNAPS UP MIRAI IN UK

And Ingram Micro has acquired the UK company Mirai Networks Ltd for an undisclosed sum: this is the second acquisition by Ingram Micro of a UK microcomputer products distributor in just over four months; Mirai Networks specialises in computer networking hardware and software and will be merged into Ingram Micro (UK) as its technical products division; in March, Ingram Micro Inc acquired the Winprime Group and its distribution subsidiary Software Ltd and renamed the company Ingram Micro UK; Mirai's management and staff will be integrated into Ingram Micro UK and the company's principal officers will retain their positions; Mirai will continue to operate separately until December, and when integrated with Ingram will expand into Unix and computer aided design markets.

THE ONTOS DATABASE IS NOW ON THE RS/6000

IBM Business Partner, Burlington, Massachusetts-based Ontos Inc is now shipping Release 2.1 of its Ontos object database designed for the Unix client-server environment, and this is the first release for the RS/6000 - Ontos was previously being marketed only on the PS/2 for the IBM market. Key features of ONTOS Release 2.1 include open access to its internal data structures or "metaschema", flexible and optional transaction and concurrency control models, extensible storage management and an integrated object SQL - that is SQL with object extensions, which will eventually hook up object databases with relational technology.

CHORUS OF ALARM FROM RIVAL AGENTS ABOUT BLUEBIRD'S FUTURE TRADING POSITION

Touche Ross cannot confirm that it will approve a management buyout at Bluebird Software Plc, despite reports to the contrary in the UK press (UX No 346). Touche Ross is negotiating to sell the business, either broken up or in its entirety, but that decision depends on how attractive the various offers are. Rickmansworth, Hertfordshire-based Bluebird was an IBM AS/400 and RS/6000 agent, and other AS/400 agents are concerned that the company will re-emerge as an approved agent, as did Banford Computers, now known as Byford. Colin Wells, managing director of Manchester-based JBA International, believes that it would be wrong for IBM to grant agency status to a company with a shaky financial history. Wells says that it undervalues the agency programme, and since the new company will have to find the funds for relaunching, he suggests that the money ought to find its way to those suppliers and staff who are owed money. Ironically, IBM UK is a major debtee and shareholder, and its future relationship with Bluebird has still to be seen.

MOTOROLA DELIVERS ITS**MONSOON PARALLEL PROTOTYPE**

Motorola Inc wants to be at the forefront of the looming parallel processing revolution and it reported yesterday that it has delivered the first prototype of Monsoon, a general-purpose, dynamic dataflow computer to Massachusetts Institute of Technology in Cambridge, Massachusetts. Monsoon was constructed as a prototype to demonstrate practical scalability and programmability, the aim being that the same program should run on one or on hundreds or thousands of processors without any modification and with improved performance, and a key to this on the Monsoon is a new implicitly parallel programming language called Id. Monsoon consists of eight 64-bit processing elements and eight 32Mb memory elements interconnected by a fast packet network. Each processing element is capable of processing up to 10m dataflow tokens per second, while the memory elements can process 4.17m split-phase transactions per second. Four Delta Series Unix computers are used as the front-end computers. According to Professor Greg Papadopoulos, chief architect, Laboratory for Computer Science at the Institute, "with improved hardware, for example, 1995 solid state technology, Monsoon descendants with 1,000 processors should be able to reach performance levels of over one TIPS - Tera Instructions Per Second. The project is a joint research effort between MIT and Motorola Computer Group's Cambridge Research Centre and Advanced Technology Laboratory. The \$10m Motorola effort is jointly funded by the company, MIT and the US Defense Advanced Research Projects Agency. Other Monsoon collaborators include Los Alamos National Laboratory, Sandia National Laboratory, University of California at Berkeley, University of Glasgow and the State University of Rutgers.

UK, INDUSTRY PUMP £34m INTO FOUR-UNIVERSITY INITIATIVE TO ADVANCE PARALLEL PROCESSING

The UK Department of Trade & Industry, the Science & Engineering Research Council and some 40 commercial companies, including Motorola Inc and Oracle Corp, have together raised £34m in funding for a new four-year research programme into parallel computing. The research, to begin in the autumn - once the various projects have been approved - is to be focused largely on converting existing industrial applications, such as climate modelling applications for Cray Research Inc machines and Digital Equipment Corp VAX boxes, to parallel computing environments. The money - £9m direct from the Department, £4m from the Science and Engineering Council, and £21m from industry, is being distributed evenly between Edinburgh, London, Oxford and Southampton universities. Edinburgh University is the only one of the four that already uses parallel supercomputers - its research centre currently houses a 430-Transputer multiple-instruction-multiple-data machine from Bristol-based Meiko Scientific Ltd, another Meiko system based on 64 Intel 80860 nodes and 128 Transputers, and two single-instruction-multiple-data Distributed Array Processor machines from Active Memory Technology Ltd - so it will be using its share of the finances to expand its activities rather than build them up from scratch. Besides Meiko Scientific and Active Memory Technology, says research worker Greg Wilson, Edinburgh University has close ties with Intel Corp and Motorola, so it's a toss up as to which machines the centre will invest in next. The director of Edinburgh's research centre happens also to be the director of the European TeraFLOPS Initiative, but as yet Edinburgh has not received any EC funding. Most of the centre's backing comes from industrial partners, such as Shell Oil and the Meteorological Office.

unigram X

The Weekly information newsletter for the UNIX® community worldwide.

Sequent Computer Systems Inc's vice president of marketing, Neal Waddington, has resigned from his position, just a year after leaving Unisys Corp for the Beaverton, Oregon-based firm: it is not known whether his departure is a direct consequence of Sequent's recent decision to withdraw from the OEM market following a decline in orders from Unisys, (UX No 341).

Hewlett-Packard Co claims it is the first vendor to pass transport layer conformance tests for the US government's Open Systems Interconnection profile or GOSIP with its OSI Transport Services, OTS/9000 product: HP says it'll be ready with X.400 and file transfer, access and management - FTAM - OSI conformance by the end of the year.

Fujitsu's DS/90 system running the UXP/DS 4.0 Unixlike - Fujitsu's name for ICL's DRS6000 Sparc machines - has been branded XPG3 Base compliant.

Independent software vendors who pretty much run their businesses on their gut hunches report having the sensation that the small renewed interest the market started to show in OS/2 because of IBM's prodding have dampened by Microsoft's latest countermove (UX No 345): they reckon, however, that Microsoft won't be the beneficiary, and that Unix already is.

Teradata has pinched James Castle, chairman and CEO of **Infotron Systems**, the communications systems company, and one time executive vice president of **Memorex**, as its new president: Kenneth Simonds remains the firm's chairman and shares the CEOship with him.

Indicative, perhaps, of **Unisys'** current gloom, John Chen, vice president and general manager of its Unix Systems Group, a 12-year Unisys veteran, has bolted for **Pyramid** which has made him executive vice president, responsible for hardware and software engineering, manufacturing and corporate management information systems: he'll have to change his mindset from the Motorola 88000 to the MIPS chip. Chen headed the team building new 88000-based Convergent Technology lineage servers at Unisys, which saw the light only in Japan recently (UX No 242, 335, 344), but are now effectively dead.

Hot after **Unicorn** for allegedly infringing its patent, **VISystems** has now started legal proceedings against Unicorn OEM **NCR**, Unicorn user **Burlington Coat Factory** and Unicorn independent software vendor **Merchandise Management Systems**. **VISystems** is suing Unicorn charging that its Unix CICS program unfringes on patented technology used in its VIS/TP line (UX No 326). **NCR's** exposure stems from its recent agreement with Unicorn to develop an interface between UniKix and one of its products. **Burlington** is using UniKix to migrate an MMS application.

Data General Corp has won a three year, \$40m contract from the US National Security Agency for **AViiON** server systems complete with **DG/UX**.

This week at **SCO Forum**, **Computone** is expected to announce a non-exclusive licensing, manufacturing, distribution deal with Vancouver-based **Faximum Software** for its Fax for Unix software products. The US multiport concern appears to be following in the footsteps of competitor **Digiboard** which last year bought **PC Research** for a rumoured \$250,000 and turned its technology into the **DigiFax** line. Multiport firms are facing a declining market.

Steve Jobs might not have much experience for this sort of thing of late but that hasn't stopped **President Bush** from appointing him to the President's Export Council, the national advisory committee on international trade: Members serve at the pleasure of the President, with no fixed term of office and report to the president through the Secretary of Commerce.

NCR last week hired its second AT&T computer executive: **Richard Cundari**, AT&T's regional sales vice president, Northeast Division, within **NCR's** United States Group. He's responsible for all direct and indirect marketing and sales support activities in the eight-state region.

SunSoft has bought 300 licences to **Saber C++** and 100 licences to **Saber-C** programming environments for on-going and new development projects.

Apparently **Santa Cruz Operation Inc** was originally to have revealed details about the make-up of the Open Desktop environment it is putting together for the Advanced Computing Environment's MIPS Computer Systems Inc RISC-based platform at the SCO Forum bash in its West Coast, California home town this week.

Sybase Inc saw its shares priced at \$13.50 reach \$17.375 on their first day of trading - a good start, no doubt fuelled by continuing speculation that a bid may be made for the company: **Lotus** and **Apple** are both shareholders and **Lotus** has already tried to buy the database company out once and has been rebuffed; it is also rumoured that **Bill Gates** has a private stake in the company that he may increase.

Observers reckon **SunSoft Inc** is going to have to make some sort of statement about putting **SunOS** on the Intel Corp **iAPX-86** platform at its upcoming developers' conference on September 4th: however, they also have the feeling **Sun** may not have it sorted out yet.

Rumour has it that **Viking, Texas Instruments'** superscalar chip **Sun** is supposed to use in its **Galaxy** multi-processors, will go into beta test in October. Reportedly there are four beta sites: **Sun**, **ICL**, **Amdahl** and **Solbourne**. Real volumes, our source figures, would be due at the end of the second quarter.

Syntax Inc, Auburn, Washington, has implemented its **LMserver**, **LAN Manager** server for Unix, under the **Silicon Graphics Inc Irix** Unixlike.

ECCS Inc's AT&T-compatible storage products are now available for **Sun Microsystems Inc**, **NCR Corp** and other Unix systems: the firm is also now testing optical jukeboxes that can store up to 32Gb disk.

Snow Software, Clearwater, Florida, has introduced version 4.0 of its **Snow report writer**: for **MS-DOS**, **Novell LANs** - Unix versions will follow - it costs \$700.

Systems Union has ported version 3.5 of its **SunSystem** accounting package to **Hewlett-Packard's** 9000 series Unix systems.

Toronto, Ontario-based **KL Group Inc's** **XRT/graph** package for producing graphs under **Sun Microsystems Inc's** **XView** toolkit will be available for the **OSF/Motif** interface later this year.

The **NASA Johnson Space Center** has installed an **FX/2800** RISC-based supercomputer supplied by **Alliant Computer Systems Corp** of **Littleton, Massachusetts**: it will be used to provide real-time data retrieval during space shuttle missions; **NASA** will be able to access data from current and past Shuttle missions within minutes of request, a process that took several days formerly; the computer will support **NASA's** **Orbiter Data Reduction Complex**, the central repository for data generated during shuttle-missions; **Alliant** has integrated peripherals and networked the **FX/2800** as a file and archive supercomputer server, and it includes 84Gb of storage, a 300Gb **Sony WORM** disk, **StorageTek** magnetic tape drives, 12 **NCD X** terminals and a laser printer; running under **Unix**, the system supports up to 28 **Intel 80860** RISC processors, delivering 2.24 **GFLOPS** and 1,148 **VAX MIPS** performance.

Following completion of the acquisition of **Businessland Inc** by **JWP Inc**, the new **JWP Businessland Inc**, a combination of the **Businessland** operations with those of **JWP's** **Computer Systems Group**, will be headquartered in **Canton, Massachusetts**.

The "birthplace of the first commercial integrated circuit" has been named a registered historical landmark by the Office of Historical Preservation for the State of California: the site is the location of the development of the first integrated circuit in 1959 by the late **Dr Robert Noyce** at **Fairchild Semiconductor Corp**; it is the 1,000th for the state - which seems to make the things at least as common as blue plaques in **London** - and the second in **Silicon Valley**, the first being the garage in which **Bill Hewlett** and **David Packard** started out.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram X

The weekly information newsletter for the UNIX ® community worldwide

London, August 26-30 1991

Number 348

NO CHEAP TRICK FOR ACE AS COMPAQ DEMANDS HP'S VISUAL USER ENVIRONMENT FRONT-END

Compaq Computer Corp is moving heaven on earth trying to forestall any possibility that IXI Ltd's X.desktop will be the desktop manager used in the ACE Initiative's Unix operating system. Instead, it wants to adopt the Visual User Environment (VUE) from Hewlett-Packard, a company that is not aligned with ACE. Compaq's hard-lined stance, currently the subject of much backroom politicking, puts it at loggerheads with the Santa Cruz Operation Inc, the firm ACE entrusted with building its operating system and a strong proponent of IXI. Reportedly, the wrangling led SCO to postpone a rollout of the operating system, Open Desktop for ACE, with X.desktop included, last week at its big annual bash, SCO Forum, in California (UX No 347). Compaq would also appear to be going up against DEC, ACE's other formidable backer, the source of its base operating system, and a company believed to be considering X.desktop for a raft of even non-ACE products. Compaq, an ACE instigator and also the one ACE company with the most experience of the desktop market, fervently believes that the graphical user interface or environment and desktop manager - the screens the user sees first and has constant resource to - is the single most critical piece of systems software. Its perception looms larger because of the competitive intentions of its rivals, entities such as the IBM/Apple axis now threatening to put the ever popular Mac interface on their RISC boxes, not to speak of fellow ACE founder Microsoft Corp ready to give Unix a run for its money with its NT technology. Compaq has backed up its choice of VUE with usability studies of all the potential technologies, testing them out on Unix knowledgeable end-users, those only familiar with MS-DOS and Windows, and those who'd never used a computer before. VUE, according to Compaq, was significantly preferred. In an initial set of tests three months ago, HP flew in its engineers and one of its own fully configured, top-end HP 9000 Series 700 Snake workstations for the runoff, whilst IXI, a small company in the UK with a six-person presence in the US, was forced to ship in tapes which were then run on a Sun Microsystems Inc IPC Sparc platform. IXI, SCO and other ACEs are believed to have complained about the differences in machines, the proprietary-ness of HP's, and the available support, so another reportedly "independent" run-off was done on ARC-compliant boxes, DEC 5000s, a couple of weeks ago. This time around IXI submitted an advanced, object-oriented version of X.desktop 3.0 - the inclusion of object technology was apparently the major factor in Compaq's preference for VUE.

SCO says IXI X.desktop choice "is final"

Whilst Compaq is by all accounts sticking to its guns - it cast the lone vote against X.desktop at ACE's latest technical advisory committee meeting - SCO says the decision has now been made: "X.desktop will figure in the Open Desktop release for ACE's MIPS and Intel-based platforms - not VUE. The final choice - after consulting with ACE's committee - was ours," says SCO UK's system marketing manager, Mark Miller. Whilst he admits that there "may still be different viewpoints," amongst ACE members, "Compaq couldn't maintain its commitment to ACE if it choses VUE," he said. "It wouldn't get Open Desktop for its platform, because it's got X.desktop in it, and the two technologies are irreconcilable on a single platform." This rules out any possibility of a middle approach where SCO might have been pressured to offer a choice of either X.desktop or VUE to the ACE developers. The dilemma now facing Compaq is stark: it must lose face and run with the rest of the ACE crowd backing X.desktop, or defect from the initiative. This would leave ACE without its prime mover. What was intended to be a development initiative that would rival the achievement of the personal computer revolution would, given this scenario, become little more than a raft of defensive OEM agreements between those industry elements hostile to the Sun, HP and Apple/IBM/Motorola camps. Despite this life-threatening wound, ACE will this week reveal 20 new additions to its ranks, including Micronix, Everex and ICL's planned acquisition, Scandanavian outfit Nokia Data (UX No 336).

NEW VIKING SUPERSCALAR TO BE DETAILED AT HOT CHIPS

This week at the Hot Chips Symposium in Connecticut, Sun Microsystems is expected to make its rebuttal to the MIPS R4000 chip when it starts detailing SuperSparc, the silicon code-named Viking that it has been working on with Texas Instruments (UX No 316). Sun will describe the chip as a fully integrated single-chip superscalar Sparc Risc MPU, fully compatible with its predecessors and capable of outperforming the Sparcstation 1 by a factor of anywhere from five to 10 times running existing Sparc software compiled with existing compilers - that would put performance at from 60 MIPS upwards, though a figure of 80 MIPS has been most frequently mentioned. It will promise that future compilers will wring additional performance out of it. Pricing and precise availability dates are not expected to be announced. It will be touted as price/performance suitable for desktop to superserver configurations. Sun is expected to use it in its upcoming Galaxy multiprocessors, and apparently some Sparc cloners will be using the part in machines of their own. SuperSparc uses TI's 0.8 micron BiCMOS process, allowing it to squeeze 3.1 million transistors on the wafer. Reportedly it integrates integer, floating-point, memory management unit and multi-processing MBus on-chip with cache. It is meant to execute up to three instructions during the same clock cycle to produce a serious level of parallelism over serial execution. Unlike the MIPS R4000, which claims to be the first true 64-bit and 128-bit data paths on a 32-bit architecture, instead claiming that there is "no sense in paying for slower 64-bit arithmetic and pointers until they are truly needed". The development team claims superscalar techniques are preferable to the MIPS pipelining approach as a super-pipeline processor stalls frequently, since it cannot group and schedule instructions. They will also claim it is superior to the simple pipelining HP uses by being more cost-effective and longer lived because its peak performance is higher. The part allows for 64-bit double precision floating point. Meanwhile, sources expect first silicon samples of the MIPS R4000 processor to emerge from Siemens in Europe at the beginning of October - announcements are expected on the 1st or 2nd.

MOTOROLA "TO ADD IBM RIOS COMPATIBILITY" TO 88000

Motorola wants IBM's RISC PowerChip, the silicon it will be making for the IBM/Apple alliance, to be pin and bus compatible with its own RISC 88000 line, including the 88110, according to sources. A story in last week's Infoweek said that kind of design could save Apple time reworking Pink, originally conceptualised for the 88110, for the IBM chip. It would also revitalise the fortunes of the 88000 as a CPU.

SCO GRADUALLY TAKING OVER ACE KERNEL DEVELOPMENT

Whilst ACE battles for survival from its latest wound, see front page, at least the kernel-level development of its Unix operating system environment looks to be coming together, if rather slowly. According to SCO's UK systems marketing manager, Mark Miller, the bulk of the development work done by DEC on producing an OSF/1-Ultrix Unix implementation for the MIPS Computer Systems Inc RISC platform, which is the basis of ACE's Advanced RISC Computing platform - as well as DEC's own Unix workstation and server technology - is now being transferred to SCO, (UX No 330). The cocktail of OSF/1, Ultrix, SCO's AT&T V.3.2-derived Xenix and a version of the Open Desktop bundle of Unix system software will be implemented to run on the MIPS RISC part - it'll include some of MIPS' RiscOS Unix operating system technology too - as well as on the Intel Corp iAPX-86 chip-set, which ACE has also endorsed. Whilst DEC has completed much of the work on the MIPS version - and as reported last week, (UX No 347), will continue its work on developing symmetric multiprocessing extensions and other high-end features that it needs for its product line - the Intel implementation "will take a little longer," according to Miller. DEC will not release a separate product from that which SCO eventually delivers to the ACE developers, according to Dominic LaCava, DEC's vice president of Unix software and services. If the front-end of the environment is in any kind of doubt, other third-party technologies are guaranteed to figure in the ACE Unix operating system, including High Wycombe, Buckinghamshire-based Insignia Solutions Ltd's SoftPC MS-DOS under Unix emulation software - which last week won Microsoft to its cause (UX No 347) - and Locus Computing's PC Interface, already a component of Open Desktop. Work on the Intel kernel, networking and other system-level features of the ACE Unix operating system is being undertaken by SCO's development team in the UK in Watford, Hertfordshire. This will be integrated with the Open Desktop - currently being put together by SCO in the US - when the interface element is sewn-up. The completed environment "which will be an SCO product," according to Miller, is to be licensed back to DEC and offered to the rest of the ACE collective.

OSF PULLS DISTRIBUTED COMPUTING ENVIRONMENT DEMO FROM INTEROP SHOW

Where's the beef? Rival showcases for Open Network Computing and Distributed Computing Environment were scheduled for the US InterOp show in San Jose next month. No surprise there, that's their kind of venue - except the Open Software Foundation has turned into an eleventh-hour no-show muttering things like "not enough critical mass" - whatever that means. OSF pulling out - and the real reason behind it - has of course set tongues wagging about DCE's continued vapour level. The InterOp crowd's a savvy audience, the gossips say. Would DCE's slip show somehow? OSF chief David Tory, we understand, has been on something of a re-affirmation campaign, making personal telephone calls to DEC-converted OEMs asking for additional letters of support. Maybe it's because DCE supporters IBM, DEC and HP, OSF's biggest wheels, have all gone out and purchased the latest ONC upgrades for resupply to customers.

SOLFLOWER IS FIRST SPARC CLONER TO CHALLENGE SPARCSTATION 2

Solflower Computer, the four-year-old San Jose, California Sun follower, looks to be the first of the cloners out with a Sparcstation 2-compatible. The unit, dubbed the SFVME 400, adds value by incorporating a maximum of three 6U VME boards. Mother boards are coming direct from Sun for which Solflower president Kim Vu said he is paying between \$5,000 and \$10,000 depending on quantity. Solflower said the 400 would be configured as a fully loaded system complete with 28.5 MIPS Sparc 2 CPU, 208MB drive, SBus and 19-inch colour monitor listing at \$19,000. It will also be put out in OEM configurations without the Sparc 2 CPU or peripherals for \$5,000. First deliveries are set for September and Vu says he expects to sell between 5,000 and 10,000 units in the next two years. Some will go direct or to VARs but the majority he claims will be through hardware OEMs. Target markets include image acquisition, engineering, military and industrial environments. The Solflower design reportedly incorporates all the necessary logic to handle the differences between the basic SBus and VME operations. The widget is Solflower's first system, it previously being in the add-in board/Sbus to VME card business.

SPARC INTERNATIONAL LOSES MARKETING DIRECTOR TO AURUM

Sparc International - whose biggest enemy, when all is said and done, may turn out to be Sun itself - has just lost its marketing director Jime Hughes after a sojourn there of only four or five months. Sun's love/hate feelings for clones, insiders say, hasn't exactly made it easy for Sparc International to plow a straight furrow. Hughes has pushed on to commercial Unix house Aurum, as director of business development. Aurum has the integrated 4GL-based solution set for customer service, quality control, sales management and telemarketing. Aurum users include HP, Sun, Silicon Graphics and DHL. Hughes says of Aurum, "it's not a product that sells commercial Unix boxes, but you can sell commercial Unix boxes with this kind of product."

CERAM TO LAUNCH VIRTUAL MEMORY ACCELERATOR FOR SPARC

Fifteen-month-old start-up Ceram Inc, headquartered in Colorado Springs, is readying TurboSwap, a virtual memory accelerator card for Sparc machines it claims will improve application performance by a factor of anywhere from two to 30 times. The company says the device, which interfaces directly to the 25MHz S-Bus, accelerates paging and swapping operations, boosting performance by replacing slower disk swap partitions with access memory it estimates at about 10,000 times faster. Main memory can be expanded to a maximum of 320Mb in increments of 80Mb. The TS4000 40Mb TurboSwap is priced at \$1,745; the 80Mb TS8000 at \$3,395. First shipments are expected early in October, according to Ceram VP Bill Miller. The company, now 10 strong and staffed with alumni from NatSemi, Ramtron, NCR, Sun and Star, expects to sell some product direct to end-users and the rest through large VARs with their own applications. It is also hoping for an OEM arrangement with Sparc vendors such as Solbourne. Sun's own salesmen are apparently already talking to customers about it. Miller described TurboSwap, reportedly user installable and providing 20 years mean-time between failure, as suitable for CAD, financial, database and transaction processing applications and useable on disk-equipped or diskless workstations and network servers.

DEC LAUNCHES MASPAR'S PARALLEL MACHINES AS THE DECmpp 12000 FAMILY

Digital Equipment Corp yesterday became the first major computer manufacturer to enter the massively parallel processing business with the launch of the MasPar Computer Corp box in DEC colours as the DECmpp 12000. The company has configured the DECmpp 12000 as a line of eight field-upgradable models with from 1,024 to 16,384 processors, with peak performance in the full configuration claimed at 26,000 MIPS and 1.3 GFLOPS. The machines come with a colour DECstation 5000 as the front end, and Ultrix and DECnet software licences. The company also announced a new DECmpp Disk Array System that provides parallel access to large data files, made up of 720Mb disks that can be added four at a time for a maximum of 24 in a single cabinet and total storage of 11.2Gb. They offer a sustained input output rate of 9Mbytes per second. US prices range from \$250,000 to \$1.5m, from October.

STARDENT TO SPIN OFF APPLICATION VISUALISATION SYSTEM AS AVS INC

Despite the fact that controlling shareholder, Kubota Co, did the deal with Apple Computer Inc on Stardent Inc's Application Visualisation System, it is Stardent itself that is to spin off the software operation as a new company in Concord, Massachusetts, to be called AVS Inc. A key reason for the spin-off is that Stardent is not in a position to raise new money, something that should come easier to a free-standing AVS, which will start life with 11 major companies offering the Visualisation System. Stardent will continue to optimise its workstations to run the System. The new AVS will start life with 25 employees, and Stardent chief William Poduska as chairman. A president is sought.

OMG CALLS FOR NEW INTERFACE TECHNOLOGY

The Object Management Group is set to undertake its biggest task yet - the defining of interfaces for class libraries, covering areas such as windows and graphical languages where practically every company already claims to have an object-oriented product and where the likes of Borland International Inc and Microsoft Corp have a lot to win or lose. Originally this Request For Information was going to invite members to submit current technology, however at the Group's meeting in Denver last month it was decided that the Group would ask members to submit standard models to which class libraries can be upgraded - in other words submitters must go away and develop some new technology or in chairman Chris Stone's words, the goal posts have been shifted so that "nobody's got a big enough foot to get the ball through." The Request will probably be set at the Group's meeting in New Hampshire at the beginning of next month, and it is hoped that this new Object Services Task Force will also address the problem that there are, as yet, no standard multimedia object interfaces.

MITSUBISHI BUYS 6.7% STAKE IN TERA

The Japanese trading house giant Mitsubishi Corp has paid \$750,000 for a 6.7% stake in Tera Microsystems Inc, the Santa Clara, California company making building block chip sets for Sparcsystem builders (UX Nos 347, 344). Tera was established with venture capital from Hewlett-Packard Co and LSI Logic Corp. The agreement gives Mitsubishi exclusive rights to market the Tera chip sets in Japan and also the right to license a Japanese chip-maker to fabricate them.

METAPHOR "SQUEEZED OUT OF APPLE/IBM PINK DEVELOPMENT"

A self-professed knowledgeable source says Metaphor/Patriot Partners is being given no leverage in the Apple/IBM deal and that its technology won't feature in Pink's development. IBM had originally thought to develop both avenues at once. It was then keen on merging them, but largely due to money, decided to go with Pink alone. Apple is under orders from its chief to work with IBM or risk Apple's pulling the plug on Pink altogether, again because of money. But that apparently doesn't mean they have to have any truck with Patriot whose staff is being given only limited access to plans. IBM, in turn, reportedly solved its non-compete agreement with Metaphor by effectively buying back the contract when it bought the company for \$110m. Metaphor/Patriot officials, under a gag order, would not submit to direct questioning. Neither did they deny the story outright, choosing instead to pass along a cautionary word that what we heard wasn't complete, implying that their work - out of the picture in the short-term - would have an impact further on down the road. Later, they came back to say that on-going negotiations are changing things "moment to moment" and that new developments may have overtaken our talebearer. Another supposedly knowledgeable source, however, also believed Patriot impact would be longer term. That latter source also claimed there are a number of names in the hat and that Metaphor founder David Liddell is hardly a shoe-in to head the "Big Mac" joint venture.

UI SETS ATLAS LAUNCH DATE ONE DAY BEFORE OSF'S DME...

Unix International is going to try to pre-empt OSF's Distributed Management Environment announcement on September 17th by formally launching Atlas the day before, and attempting to put some meat on those bones (UX No 331) - like talking about what technologies actually exist now, what will be available in six to nine months, and providing a roadmap covering APIs and product direction through 1992 and 1993. Rumour has it that UI may also upstage OSF by going to Tivoli Systems for its systems management reference implementation - Tivoli, of course, is expected to feature in the OSF's DME selection as well. UI is playing catch-up with DME: on July 31 it sent out a letter to all of its members seeking implementation and integration partners for Unix System Labs and asking for them to submit any systems management technology they had. A response is due at the end of August.

...LATEST UI ROADMAP DUE EARLY NEXT YEAR

Look out for the latest edition of the Unix International Roadmap some time in January 1992, probably timed to coincide with the UniForum trade show in San Francisco. Unix International aims to put out a Roadmap every year - the original came out last January (UX No 266). One of the changes will be that dates for the reference implementation ports will not be based on availability for the now-defunct 3B2 line, but on ports for multiple platforms. The UI Roadmap is fought out between numerous technical committees set up by Unix International, and then put together by the Roadmap Committee, on which Unix System Laboratories participates. The Roadmap will focus down in more detail on development over the next two years.

CHEERS! NEWCOMER BIMILLENNIUM HAS HIQ GENERATOR FOR ENGINEERS

Heralding the product as a potential Lotus 1-2-3 for the scientific and engineering community, a new company called Bimillennium Inc has launched HiQ. Based in Los Gatos, California the company - whose chairman and largest private investor is James Martin - has a mission to take its maths/graph analysis engine, user interface and object-based fourth generation language to the engineering community. Ships soon for Apple Macs at £600 - Unix versions will follow.

IBM UK UNVEILS AP/6000

APPLICATION BUNDLE FOR RS/6000

Although IBM UK seems to have been applying the brakes on direct sales of its RS/6000 AIX box into the business sector - where it has been doing a little too well in what is meant to be AS/400 territory (UX No 347) - the demand for 'open systems' products by major commercial users and public sector operators is becoming unstoppable. Now having to compete with a bevy of system and software providers on vital blue chip accounts like Barclays Bank Plc and British Telecom plc over here, who are demanding open systems compliance, IBM's RS/6000 sales force - plus its 200 or so value-added resellers - are getting another carrot to dangle in front of corporate customers to entice them to the Big Blue flavour of open systems. The new offering is a bundled package of integrated office automation and imaging software applications from third parties - known collectively as AP/6000 - which IBM will sell, install and support across the RS/6000 range. Users will be able to "cherry-pick" applications from the suite, and pricing will be set in line with the individual suppliers' licensing fees. A well-configured system including a CPU but minus screen is expected to start at around £1,200 per-seat. Users will be supported from IBM's AIX support centre in Basingstoke, Hampshire. IBM originally touted the idea of AP/6000 to existing customers at the end of last year, announcing the first two products in the suite to value-added resellers back in June: Uniplex, the office automation suite from Hemel Hempstead, Hertfordshire-based UK firm Uniplex Ltd, and Coventry-based Simdell Ltd's Uniplex-based Manager office information software, which also includes an integrated version of New York-based BRS Information Technologies' BRS Search text retrieval system. IBM is currently negotiating for Wallingford, Oxfordshire-based Dorotech Ltd's software and hardware image processing package, DoroDoc; and with London firm Financial & Corporate Modelling Consultants plc for its Staffware procedure processing system. These are likely to be on board by the end of the month: an announcement of the completed suite is due by the end of the year. There are currently seven sites - including Barclays and British Telecom - running AP/6000.

Corporates

Amongst others that sign up, some are almost certain to be former, or potential, AS/400 users, though IBM UK AIX software and services manager, Rick Jones, says the raft of applications is aimed primarily at those corporates which have already made policy decision to go the open systems road, or who have multi-vendor installations and need both traditional IBM office automation products such as OfficeVision, plus packages that will run on newly acquired networks of open systems-orientated branch equipment. "If the guy wants an open systems solution, we want to be able to provide an equivalent solution to our proprietary offerings," Jones says. "Yes, there is debate and competition between product managers on the RS/6000 and AS/400 lines," he admits, "but we advise them to sell on the basis of 'horses for courses'." Price is also likely to play a significant part in AP/6000's potential for winning new business on the RS/6000. An integrated imaging and procedure management system was demonstrated by Dorotech and F&CMC at the IBM '91 show earlier this year running on the RS/6000: it came in at half the price of an equivalent ImagePlus solution running on an AS/400. A source close to the AP/6000 project - which was led by Peter Turner at the Basingstoke site - says IBM was spurred into action by the attitude of corporates which want to get into open systems, but are disinclined to get involved with the host of small firms offering a variety of open systems components and tools, preferring instead a fully integrated and supported product bundle from an established firm. Jones agreed that an IBM research study conducted amongst its current user base bore these feelings out. The same source - an existing IBM reseller - is "concerned about how AP/6000 is going to be sold," because some of the components "are very complex," however he admitted that such "one-stop shopping for AIX should do very well." Jones says AP/6000 will absorb changes in the various product components, and that IBM will release a new version of the bundle every six months or so. It'll only be available in the UK for the present, though the company is talking to the powers that be at its Paris headquarters about rolling the stuff out across Europe and other countries. "There is a keenness to do it," Jones says.

LSI LOGIC SET ANTICIPATES ACE

Milpitas, California-based LSI Logic Corp has upgraded its MipSET chip set for the MIPS Computer Systems Inc R3000A RISC to enable systems developers to build high-performance, low-cost computers intended to be fully compliant with the Advanced RISC Computing specification and to run the two Advanced Computing Environment-specified operating systems - Microsoft Corp's Windows NT and Santa Cruz Operation Inc's Open Desktop when they become available. The upgraded MipSET runs at 25MHz and is based on the LR3000A CPU and LR3010A Floating Point Accelerator with LSI Logic system chip set announced in 1990. The number of core logic chips has been reduced to six from eight, and the two processor chips are now incorporated in surface-mount packages. The chip set now supports both the LR3000 and the endian-switching LR3000A, and a new LR3208 Video Frame Controller has been added to the set. It drives a 1,024 by 768 by 8-bit terminal consistent with the ARC specification. The nine chip set - LR3000A CPU, LR3010A floating point unit, LR3201 reset-interrupt controller, LR3202A L-bus controller, LR3208 Video Frame Controller LR3203 DRAM controller, LR32D04 DRAM data buffer - two needed, and LR3205 block transfer buffer sells for \$495 when you buy 10,000-up.

PERFORMANCE SEMI'S NEW R3000 RISC CHIP TECHNOLOGY CUTS BOARD COSTS

Sunnyvale, California-based Performance Semiconductor has announced a new surface-mount plastic packaging technology for its PR3000 32-bit RISC processor chip set implementations of the MIPS Computer Systems Inc R3000, which reduces by 40% the prices of 25MHz and 33MHz products. These lower prices, says the company, establish new worldwide cost-performance records for all 32-bit processing with either complex instruction set or RISC technology. The new versions of the 25MHz and 33MHz products are scheduled to be in prototype this month. The PR3000A CPU and memory manager will be available in a 160-pin plastic surface-mount gull-wing configuration, and the PR3010A floating point unit will be available in an 84-pin surface-mount PLCC with J-bend lead configuration. The PR3100A write, read and parity buffer, which contains all the support logic required and establishes the system interface bus to main memory and input-output, will also be available next month, in the 160-pin plastic surface mount gullwing configuration. This three-chip set, when supported with 64Kb data cache and 64Kb instruction cache, it is claimed, yields 21 MIPS of sustained integer throughput at 25MHz, and 28 MIPS at 33MHz. On double precision Linpack performance it rates 4.1 MFLOPS at 25MHz and 5.4 MFLOPS at 33MHz. With the reductions, the PR3000A and PR3010A are fixed at \$150 for 25MHz and \$190 for 33MHz, in 1,000 units. The 1,000-unit price for the PR3100A is \$50 at 25MHz and \$62 at 33MHz. Most applications, says the company, have used Unix software previously, though as part of the Advanced Computing Environment, the OS/2 3.0 operating system is now in development - behind the times, fellahs, it ain't called that any more - to enable the use of MIPS R-series chip sets at the desktop to run application software written for MS-DOS.

XEROX PORTS XNS SERVICES TO UNIX

US reports says Xerox Corp is readying services based upon its Xerox Network Services, XNS, networking protocols for Intel Corp-based Unix systems. They will allow XNS users to run Xerox document collaboration, translation and preparation applications on 80386 and 80486-based servers running SCO Unix. Up until now the applications have only been available on Xerox's proprietary systems. Xerox is to replace lower-level XNS protocols with ISO standards. Applications running on Intel-based Unix XNS servers will host MS-DOS, OS/2 and proprietary Xerox workstations running Sun Microsystems Inc's SunOS. Versions for other platforms will follow.

SIGMA ENTERS X TERMINAL FRAY WITH LINE FOR OPEN DESKTOP

Fremont, California-based Sigma Designs Inc has plunged into the X-terminal business with launch of a full line of the X-Window System display stations designed to support Santa Cruz Operation Inc's Open Desktop 1.1. The displays are based on what the company calls Sigma Advanced Graphics Engine and are designed for use with 80386 and 80486 AT bus machines and the intelligence is claimed to enable the micro to run X-Window, client applications and Open Desktop faster and more efficiently. All the SAGE displays use the 60MHz Texas Instruments Inc TI34010 processor and run Sigma's X-Window Display Server software, based on X11.4 but designed to support 11.3 client applications. The line starts with the SAGE 1280 co-processor-based colour display adaptor; ColorMAX 1280, 96dpi, 19" 256 colour display system using the 1280; the Silver View GS, a 72 dpi, 21" 256 gray shades display system; and the L-View GSP, a 120 dpi, 19" four gray shades display. They're out now at from \$2,700 for the SAGE 1280 board with 2Mb to \$7,000 for the ColorMAX 1280 with 2Mb; the Silver View with 2Mb is \$3,300, the GSP is \$2,800, the server software \$300.

HARRIS ADACOM'S X WINDOW DISPLAY PROVIDES ACCESS TO 3270 APPLICATIONS

Harris Adacom Corp has announced an X-Window-based display that provides access to 3270 applications through the Open Software Foundation's Motif user interface. The Display Station System supports multiple terminal-to-host sessions and users can access 3270 applications and non-IBM hosts on an Ethernet local area network concurrently through a windowed environment. Developed as a technology exchange with Mountain View, California-based Network Computing Devices Inc, the 9800 is meant to be an alternative to IBM's 3290 display station. Intended for transaction processing, database or network management and technical support, the display comes in various configurations with an optional 3270 coaxial attachment available. Available now, the controllers cost between \$12,000 and \$20,000, the terminals \$2,200 to \$4,500.

CONVEX ADDS STRING OF GRAPHICS ENHANCEMENTS TO C3 SERIES

Richardson, Texas-based Convex Computer Corp has come out with new graphics products and enhancements to expand the supercomputing-based visualisation options available on its C3 Series. These options include PEX Interoperability, Convex AVS3, and CXterminal-19C. PEX is an extension to the X-Window System, a protocol for communicating three-dimensional graphics over networks of heterogeneous systems, and X-Window supports window management operations, input, and simple two-dimensional graphics. Formerly, X-Window did not provide direct support for three-dimensional graphics. PEX is said to solve the problem by providing three-dimensional, distributed graphics capability, and Convex will provide both C and Fortran Programmable Hierarchical Integrated Graphics Standard application program interfaces as a means of producing PEX-based applications. Also, Convex says that PEX reduces network overhead by providing a communications protocol that transmits only the changes made to a three-dimensional graphic, not the entire image. Convex AVS3, C PHIGS and Fortran PHIGS, each supported by PEX, will be up on Convex supercomputers in the first quarter of 1992. ConvexAVS3, the latest version of ConvexAVS, is said to have new data analysis capabilities and improved support for applications development. It provides an interactive environment for the use of advanced graphics and imaging techniques without graphics programming. ConvexAVS3 will be available in the first quarter of 1992. The CXterminal-19C is Convex's version of a high-resolution colour X terminal and is supplied by Tektronix Inc of Wilsonville, Oregon through a \$1m OEM contract it recently signed with Convex: the firm supplies monochrome X-terminals from Network Computing Devices. The CXterminal-19C has a 19" bit-mapped colour screen that supports a large number of windows of two full pages of text and graphics. It puts up 1,280 by 1,024 pixels and displays 16.7m colours 256 at a time, enabling multiple windows to use independent colour applications. The CXterminal-19C interfaces to any network host supporting X-Window applications, and it is available now for \$6,800. Tektronix says the contract with Convex is worth more than \$1m.

OCTOBER LAUNCH FOR APPLE NOTEBOOKS, NEW TOP END

It looks as if October 21 has been set by Apple for the launch of seven new machines: three notebook offerings, two high end desktop Apple Macs and two tower models. According to MacWeek, the high end machines all use the 25MHz 68040 Motorola chip with two 4Kb caches and a floating point unit built in. The new desktops have 4Mb of RAM and a 1.44Mb SuperDrive - one comes with an 80Mb hard disk drive and costs \$6,500, while the other boasts a 160Mb hard drive and will sell for \$7,000. The tower models also have 4Mb of RAM and a 1.44Mb SuperDrive and come in similar sizes - the 80Mb hard disk drive machine will sell for \$7,600, while the 160Mb version is likely to cost \$8,900. The three notebook models will range in price from \$2,000 to \$4,000. The entry level notebook is being made by Sony Corp, but the other two systems have more features and use Motorola's 68030 chip. However, the lightest model is expected to weigh in at around 4.5 lbs, which is heavier than many next generation MS-DOS notebooks are likely to be. There is also some scepticism about the wisdom of designing the Apple trackball device into the notebooks - this is a pointer akin to the mouse that has reportedly not made the transition to portable computing with grace. Some shortcomings are also likely to be found with the new high end models: for example, A/UX 2.0 will reportedly not run on the new Macs and will require a major upgrade, not expected for some time. Furthermore, there are some compatibility issues with existing applications such as - surprise - Microsoft's Mac suite. But, on the whole Mac managers have been impressed with the machines in test, citing features such as built-in Ethernet, on-board video expandable to 24-bit colour and the ability to change to server mode with a key switch.

RECORD NUMBER OF BIDDERS ON LATEST US AIR FORCE DESKTOP CONTRACT

Traditional government suppliers Zenith Data Systems, Electronic Data Systems and Sysorex Information Systems have each submitted bids for the US Air Force Desktop IV contract, thought to be one of the largest single procurements of small computers ever at around some 300,000 units. Zenith claims the largest installed base of computers in government, EDS supplies personal computers to the US Army under the Standard Multiuser Computer contract and Sysorex recently won the much-protested DMAC II microcomputer contract with the Treasury Department. Electronic News adds that Government Technology Services Inc - winner of the potential \$500m Navy desktop contract - IBM, DEC, Wang, Apple Federal Systems, Ogden ERC and CompuAdd have also submitted bids. Given the record number of bids, the paper says the Air Force will likely split the bid between two vendors: also it will be hoping to avoid the problems it ran in to when it appointed Unisys Corp as the sole supplier on the Desktop III bid, which was awarded a couple of years ago and is still experiencing delays. Unisys is not expected to bid on Desktop IV, nor is AT&T, which says its strengths lie in systems integration rather than pure commodity deals. Desktop IV calls for personal computers with 20Mb and 40Mb disk: 200Mb systems must run Posix-compliant Unix, Ada, SQL relational databases, S-Windows, GKS and CGM. They must all be able to connect to the government's existing Zenith, Unisys and AT&T installed base. The contract is expected to be awarded by the end of the year.

NEW SECURITY PACKAGE FOR UNIX

Security Dynamics Inc, Cambridge, Massachusetts, has some new security software for networked Unix systems. ACE/Server provides access control and security administration on Ethernet-TCP/IP networks. Available initially on Sun Microsystems Inc and DEC Unix platforms - other releases are planned before the end of the year. It supports MS-DOS personal computers and Apple Macintoshes, as well as Sun and DEC workstations, as clients. The password system is based upon an LCD-based user identification card - the SecureID Card - which changes the encryption process every 60 seconds, making systematic code-breaking difficult. Prices start at \$5,000 for a 16-client package - \$10,000 buys a 100-user set-up.

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Visix Software is expected to offer its products in a two-tier strategy from September with the addition of a new graphical user interface product called Professional: described by one source as "an order of magnitude better than existing products in terms of useability", Professional will be Visix's top-level product, with the current version sold as a base-level tool. Interactive Systems Corp is expected to bundle the product.

Empress Software Inc, Greenbelt, Maryland, claims it is the first relational database vendor to port to its software to Commodore Business Machines Inc's Amiga 3000UX Unix box which runs SVR4.

Systems integrator start-up, Cambridge Technology Partners, Cambridge, Massachusetts, (UX No 341), which is headed-up by former Concurrent Computer boss James Sims, will be targeting customers that need to tie in recent Unix system acquisitions with existing proprietary investments: the firm, initially focusing on accounts that have bought Hewlett-Packard Co, NCR Corp and Unisys Corp Unix machines, aims to become a \$25m a-year outfit by the end of the year.

IBM Corp is negotiating for state-owned Cobra Computadores Ltd - once a Ferranti International Plc joint venture - to market the RS/6000 Unix machines in Brazil, and Digital Equipment Corp is forming a joint venture with Elebra Computadores Ltda to manufacture its mid-range machines in Brazil.

Xinc Electronics announced the SparcPlug Lite, a 28 MIPS upgrade board for VME-based Sun systems, with a list price currently under \$10,000. The add-in lets Sun 3 or 4 VME chassis to upgrade to 28 MIPS with a Sparc CPU and three S-bus slots. Both VME and S-bus peripherals are supported. It will also support up to 128MB of SIMM RAM.

A US report says troubled Unisys Corp may after all bring out a commercial server system over there based upon the Motorola Inc 88000 RISC part - that's provided Motorola continues to support its RISC offering as a CPU following its tie-up with the Apple-IBM axis: if not, the report says, Unisys will likely only sell 88000-based systems, like those it has introduced in Japan, (UX No 335), into niche market areas.

A US federal judge has reversed an earlier decision in which he ruled that Hewlett-Packard Co and Microsoft Corp could not contest the issue of whether individual features of the Macintosh user interface are original: the two can now argue either that NewWave and Windows are protected under a 1985 licensing agreement or that the Mac interface cannot be copyrighted.

Fujitsu Ltd has formed Open Systems Solutions Inc in Emeryville, California as a wholly-owned subsidiary to develop Unix-related software: it will develop Unix software for small businesses and engineering applications: initial investment is put at \$2.3m

Sequent Computer Systems Inc, which saw sales soar 71% to \$249m last year, says it expects to recruit 250 software engineers at its new European development site in Sophia Antipolis, France over four years.

One source which ties to IBM has a notion he's been hard put to prove definitively, yet still has a hunch is true. If so, it's marvellously Machievellian. IBM has \$2 billion to spend over the next five years buying mainly non-controlling but voting interests in western - note western - hi-tech firms good at tools and enabling technologies, the things the lead to product differentiation. It has, he thinks, set up a "secret" training school for senior managers to teach them how to sit on the boards of those companies and maximise IBM's investments.

Those that heard IBM Corp talking so openly about including applications-specific processors optimised for things like database management included in multiprocessor mainframe complexes a few years back and are still waiting to see anything much appear will not take the prospect too seriously, but IBM is now thinking aloud about including application-specific processors in N-way multiprocessor complexes of the AS/400: it muses specifically about a System 36 processor and also mutters about RISC for things like floating point acceleration, but not excluding the possibility of an RS/6000 Unix processor too.

Munich-based software company and ICL software engineering partner, Softlab GmbH, has won its first order for its Maestro II application development software running on ICL's DRS 6000 Unix box: Yorkshire Electricity Plc has shelled out £450,000 for the software and is updating its existing Maestro environment so that it runs Softlab's Object Management System, Project Control and Configuration Management applications alongside ICL's Data Dictionary System and Quick build development methodology; ICL supplied 40 personal computers and one DRS 6000 machine for £250,000.

ModComp has set up a new Industrial Automation Services Division under general manager Michael Black.

Instruction Set's US president Gary Ambrosino has quit to join networking house Symbiotic in a similar capacity.

Interactive Systems Corp says it has "won six major contracts from the US federal government worth a total of \$2,000m" - gee, in a contract covering tens of thousands of machines, how much do you suppose each copy of Unix System V cost? - about \$500 perhaps? - so we must be talking about four thousand million Unix systems, right? Well no, actually: Interactive is simply a small subcontractor on the six pacts, and will get to see only a tiny proportion of the sums quoted.

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Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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The weekly information newsletter for the UNIX ® community worldwide

London, September 2-6 1991

Number 349

NEW US STANDARDS BODY "MAY THREATEN X/OPEN"

X/Open may have waited too long to amend its charter and try to turn itself into a user-led organisation (UX No 346). Its viability as the predominant open systems standards body is currently threatened by what are perceived to be designs by the National Institute of Standards and Technology (NIST), a US government agency, to establish itself as the centre for worldwide open systems requirements, working through the so-called Group of Ten, the latest in a series of end-user alliances. In a 24-page proposal currently circulating, NIST and the Group of Ten urge the creation of yet another supposedly neutral North American specifications body - this one invested with sweeping powers to define not only all open systems standards along with their conceptual framework but also the very products vendors are expected to produce. This all-embracing OSI-based Open Systems Environment, as they call it, to be hammered out jointly by vendors and users and aimed at accelerating the delivery of interoperable products from the vendors, would dictate solutions to such specific issues as all the features involved in networking services, data management, graphics, programming, user interfaces, data interchange and operating systems, down to, and including the kernel. The structure in which NIST is proposing to house such gargantuan activity is NIST's own OSI Implementors Workshops (OIW), which would be gradually broadened beyond its OSI protocols heritage, overhauled to give users a stronger position and rechristened the Open Systems Environment Implementors Workshop (OSEIW). Discussion of such a move, which would require heightened vendor participation, is apparently set for the OIW conference to be held next week on September 9-13. Such a scheme, if it ever comes to fruition, would naturally negate the importance of X/Open's Xtra process and diminish the organisation's sphere of influence.

SOS - Strategies for Open Systems

In fact, OSEIW would effectively usurp X/Open's new role entirely by also acting as go-between with other user groups and vendor consortia. The spectre of such an organisation getting even partly off the ground has touched-off fears of further fragmentation in the industry. The Group of Ten, also called the SOS companies after their initial specification, the Strategy for Open Systems, represent firms with massive information technology budgets - enough to conceivably force vendors to create OSEIW-compliant product lines even if other firms do not join OSEIW. The Group, which is believed by some to be a subset of still another NIST-created organisation, PDES Inc, is reportedly spearheaded by factions inside DuPont and General Motors, and includes Merck, American Airlines, Eastman Kodak, Unilever, 3M, Motorola, Northrup and McDonnell Douglas. The OSEIW proposal has also unleashed fears of sinister forces, including the government, at work manipulating the Group of Ten for their own ends. This theory is advanced by quarters that point to the fact that the initial SOS specification, circulated as a letter, asked vendors to adopt Open Software Foundation products such as Motif, DCE and DME as de facto standards and draw conclusions from the fact that the only hardware companies to be part of PDES Inc are IBM, DEC and Hewlett-Packard, all of them OSF founders. Such a bias is again repeated in the OSEIW proposal which suggests DCE and DME warrant "early and priority consideration". The Group of Ten however, may not characterise such influence as "sinister" considering that DuPont is on the OSF board and IBM and Digital are their strategic vendors. But it does present the industry with a serious possibility: the prospect of destroying the whole notion of standards and creating virtual monopolies by promulgating product specifications as standards. It also faces X/Open with a dilemma of its own, considering the SOS specification appears to be a derivative of NIST's own Application Portability Profile (APP), and gives only short shrift to X/Open's work, which might also become short-lived if the industry accepts the SOS framework as the definition open systems. Furthermore, Group of Ten organisers have elsewhere suggested that they might leverage off the User Alliance's requirement process to bootstrap the operation, ignoring X/Open completely. Industry organisations say they are currently attempting to understand exactly what NIST and the Group are attempting to achieve, whose agendas are whose, and how deep their commitments run. For instance, NIST, DuPont and GM are believed to have subscribed to the idea of expanding OIW and in fact to the whole proposal. In addition, the very massiveness of the proposal has created some credibility problems for its backers, especially since critical items such as transition, structure, administration, funding, supply-side support, time to market and public accountability are not well-explored and concern over duplicated efforts is only paid lip service.

SunOS BECOMES SOLARIS - INTEL PORT TO FOLLOW...

SunSoft, the new Sun Microsystems Inc subsidiary charged with selling the company's software to the outside world a la Microsoft, will be rechristening SunOS this week - presumably at its Discovery '91 conference in San Jose, California - to distance it and distinguish it from its ultimate source. The new name is going to be Solaris and what it embraces will be everything that comes with a Sparc machine including Sun's version of Unix - Open Network Computing, Open Windows, Open Look and the desktop applications that are thrown in. "The SunSoft mission includes the charter to incorporate other platforms," according to Bill Larson, vice president of sales and marketing at SunSoft, and an Intel port of SunOS is now thought to be imminent. The announcement that it will sell SunOS directly is likely to impact on companies such as Interactive Systems Corp, which distributes it, and LSI Logic, which bundles it with its SparcKits. To make matters worse for them, SunSoft is believed to have a plan to make what it sells as highly portable and configurable as it can. SunSoft aims to avoid problems like it had in the past when the cloners were thwarted in the market by not having the same software iteration as Sun. Interactive just got the current 4.1.1 to resell in the last few weeks.

...TEXAS SUPERSCALARS - AFTER CYPRESS MULTI-PROCESSORS

Sun is also now reported to be amongst those companies having problems developing symmetric multi-processing versions of its Unix machines. Although a multi-processing version of SunOS is likely to be announced this week, hardware products are not expected until later in the year and early next. After numerous reported problems with its M-Bus architecture, the first hardware roll-out - the Sparc 3, or Galaxy - is now touted as being a 60 MIPS, two or four-processor system based upon Cypress Semiconductor Sparcs, coming in between \$30,000-\$40,000. This won't worry the likes of HP, which is already well over the 70 MIPS mark with its Series 700 Snakes. However systems based upon Texas Instruments' super-scalar Viking Sparc (UX No 348), are expected to take Sun back to the top of the Unix workstation performance ladder.

OSF WILL CHOOSE FROM NINE FOR DME TECHNOLOGY

With the Open Software Foundation just days away from formally announcing the winners of its Distributed Management Environment RFT, the street has pegged Tivoli Systems as a shoo-in to provide some of the core technology what with its object-oriented framework, management request broker, object interaction and graphical display services and command line interface. But OSF won't be standing on one leg in its selection. A clutch of as many as seven companies and nine technologies are rumoured to have made it through the procedure which started out with 27 submissions. OSF is currently believed to be in contractual discussions with its picks and is fiercely guarding their identities. DCE technology is expected to be available in December.

BULL ADDS INTEL, MOTOROLA DPX/2 MODELS

Bull HN Information Systems has introduced new models in its Intel Corp and Motorola Inc-based DPX/2 Unix workstation lines, whilst cutting prices on existing machines. The Model 250 runs a 25MHz, Motorola 68040 part, is rated at 15 MIPS, comes with from 4Mb to 55Mb memory, 155Mb to 3Gb disk, supports up to 48 concurrent users and costs from \$10,500. It is not upgradeable to the high-end Model 360 multi-processor which uses the same chips because the cabinets are different. The Model 150 ETS uses a 33MHz Intel 80486 chip and runs Santa Cruz Operation Unix, as opposed to the Interactive Systems Corp-supplied Unix that earlier models have used. The EISA bus machine starts at \$14,000 with from 8Mb to 64Mb RAM and 338Mb to 2.4Gb disk. The Model 360 68040-based multi-processor is down \$15,500 to \$20,500, the 68030-based Models 320 and 340 are down from \$16,000 and \$20,000 to \$11,000 and \$13,000 respectively. The Model 210 uni-processor is cut from \$7,350 to \$6,200. The Intel and MIPS Computer Systems Inc-based DPX/2s stay as they were. With three separate, and incompatible architectures in the same system line, it could be that Bull is fattening one of its geese for slaughter.

PRIME TO LAY-OFF ANOTHER 900, PREPARES TO SPIN-OUT COMPUTERVISION?

And Prime Computer Inc, now in Framingham, Massachusetts, is expected to cut another 900 jobs - 11% of its workforce - mainly at its computer unit, whilst, **Electronic News** hears, readying plans to spin-off its Computervision CAD/CAM subsidiary into a separate company that would eventually be taken public. Prime has said for sometime that such a move was likely, and it is reckoned that the profitable CAD/CAM unit would have a much higher market value as a standalone company whilst Prime's computer business continues to lose money. The 900 redundancies - which follows 800 in the first half (UX No 334) - are planned to take effect by the end of the year, and will bring Prime's payroll down to 7,000.

MENTOR GRAPHICS CUTS WORKFORCE 15% AS IT RETURNS TO BASICS

Mentor Graphics Corp, Wilsonville, Oregon is drawing in its horns and has decided to concentrate on core businesses of integrated circuit design, electronic systems design, and concurrent engineering. The effect is to reduce its workforce worldwide by about 15% and expects to have to take a big one-time write-off - put at up to \$12m - with its third quarter figures. It is to reduce substantially development of computer-aided software engineering, mechanical design and documentation products, and will instead work in partnership with companies including Cadre Inc, IDE Inc, Hewlett-Packard Co, Structural Dynamics Research Corp, Aries Technology Inc, Parametric Technology Corp, Interleaf Inc and Frame Technology Corp. It will retain Hewlett-Packard to provide hardware service on the workstations that it buys OEM from the Cupertinoer. The company reported a loss of \$14.5m and the charge is expected to lead to a loss for the third quarter. Shares in Parametric Technology rose \$1.625 to \$34.75 on the news that Mentor would not after all be a competitor for its products, but a partner.

UNISYS "CLOSE TO PACT TO DIVEST DEFENCE ARM IN FLOTATION"

Unisys Corp seems about to shrink by another \$2,100m in annual sales and 17,000 employees: the company declines to comment, but according to the **Washington Post**, the company is negotiating with investment firm Carlyle Group Inc to sell its defense division via a public offering, raising at least \$500m and up to \$700m to reduce its debt mountain; at its current share price, the whole of Unisys is valued at only \$800m. Frank Carlucci, head of the Carlyle Group and former US Secretary of Defense, would become chairman of the new company. The defence division, headquartered in McLean, Virginia manufactures custom electronics for weapons and radar systems for the Pentagon, intelligence agencies and civilian firms.

EVERY SUN SYSTEM TO GET MULTIMEDIA

Sun's multimedia initiative, one area of the company not carved up into separate hardware and software entities in the reorganisation, just got the strategic go-ahead from Sun management. Under the direction of interactive media director Bob Pierceson, a veteran of both Silicon Graphics and Regis McKenna, the effort has been chartered to build networked multimedia capabilities into every complete Sun system that rolls off the line, starting late next year. Sun has in mind to create real-time communication between people and automate office functions by making its machines the basis of audio/visual teleconferencing and allowing document interchange and such things as shared white boards to exist. It will stick, however, to providing the horizontal software. The effort, dubbed Net Media, needs the real-time scheduling of Unix SVR4, which Sun is not yet shipping as its operating system. Sun also figures its most radical applications will require ISDN and a result may initially finds the overseas markets friendlier and more profitable.

CODAR READIES RUGGED SPARC 2

Codar Technology has a ruggedized version of the Sparcstation 2 in the works, due out in three to four months. The 28.5 MIPS unit includes a ruggedized 19-inch multisync monitor, ruggedized keyboard and trackball and ruggedized Tempest systems chassis. The rack-mountable 305M-S2 is designed and tested for a variety of mission critical military applications including ground-mobile, shipboard and airborne environments. It provides shock and vibration isolation for the CPU and up to two full-height or four half-high 5 1/4-inch removable SCSI peripherals or a total of 2GB internal storage. Mean time between failures is rated at 21,500 hours. The workstation features extensive built-in test capabilities via a proprietary systems monitoring board that reports temperature, voltage and power supply load status plus time, date and fault conditions on a 16 character front panel display. Mean time to repair is reportedly rated at 30 minutes or less. Options optical disk drives, mouse and power supplies for ground mobile applications. Codar is an eleven-year old systems ruggedized and Tempest systems supplier based in Longmont, Colorado.

SUN, HEWLETT-PACKARD STILL LEAD IN NEW QUARTERLY DATAQUEST WORKSTATION SURVEY

Dataquest reckons that there is now sufficient - and growing interest in the workstation market that it is publishing a Workstation Quarterly Shipments Report, detailing workstation shipments and revenue at the model-level for the top six vendors quarterly. The report finds that IBM Corp has joined Sun Microsystems Inc and Hewlett-Packard Co to make up the Big Three, and that shipments from the top six are up 40% over the first six months of 1990, and up 9% over the first quarter of 1991. Sun Microsystems was once again the market leader with over 97,000 units shipped in the first half of 1991. However, Hewlett-Packard displaced the Sun SLC in the second quarter and moved its HP 9000 model 425 into the number three position. As for lacklustre Digital Equipment Corp, things seem to be coming right for the company at last, with the DECstation family seeing a 40% rise in shipments among leading vendors in the second quarter compared with the first. The top five workstation models shipped in the second quarter of 1991 were the Sun Sparcstation 2, Sun Sparcstation IPC, Hewlett-Packard 9000-425, Sun Sparcstation SLC, and in fifth place the IBM RS/6000 Model 320H. You have to buy the report to find out any further details of the numbers.

MEIKO-PARSYS-TELMAT-INMOS EURO-PARALLEL PROJECT

Three small but ambitious parallel supercomputer builders are joining forces with Inmos International Plc to develop a standard European parallel supercomputer around the new T9000 Transputer from the SGS-Thomson Microelectronics NV subsidiary. The three, teaming under the European Community's Esprit research programme, are Meiko Scientific Ltd, Bristol, UK, Thorn EMI Plc buy-out Parsys Ltd, London, and Telmat Informatique SA, Soultz, France. They are calling the project GP MIMD - chosen so as to be equally unpronounceable in all European languages: it stands for General Purpose Multiple Instruction Multiple Data, which is potentially the most powerful but is also the most difficult to program of all. Underlining their commitment to the project, the three have agreed not to develop any new computers of their own around the T9000, although they are free to upgrade their existing machines to use it. The team will get the first iterations of the T9000, and the intention is to have the first machine ready by the second half of next year. Scalability is a key requirement for the machine, and on the software front, a new microkernel-based implementation of Unix is being developed to be integrated with the Applications Support Interface, which has already been specified to ensure that applications will be portable between machines built to the standard: the Interface will support Fortran, C and C++. The Unix system software component is thought to be the Unix V.3 - and soon V.4 - compatible Chorus/Mix microkernel from Paris-based Chorus Systemes SA, with additional Unix functionality, possibly from California-based Ready Systems VRTX32 real-time kernel. Inmos already has deals with both Chorus and Ready Systems to implement their Unix technology on its transputers (UX No 315). Compilers will be based on the Virtual Binary Interface developed under the Esprit Open Microprocessor Initiative, which has been adopted by the Open Software Foundation for its Architecture-Neutral Distribution Format. Although bold, industry insiders familiar with the project are sceptical that it will ever reach fruition, citing Inmos' long-standing pursuit of the embedded market, SGS Thomson's decision to axe 300 jobs at the firm last month, the absence of a secure operating system component to run on the planned multi-tasking supercomputer and the lack of a memory management unit in the T9000: that won't arrive until the next iteration of Inmos's transputer technology - code-named the E1 - which is planned for 1994. On top of that, the use of the Chorus Unix kernel "would bruise Meiko, bending its technology out of shape:" apparently because it already uses another approach called CS Tools and would need to re-work its technology to build something that could work with Chorus.

COMPUTER CONSOLES TO BUY ALL ITS COMPUTERS OEM FROM SUN

Computer Consoles Inc - the name now applies only to the side of the company selling computer systems for telephone companies - which is now owned by Northern Telecom Ltd and divorced from the owner of the commercial computer systems side of the business, owned by ICL Plc - has turned to Sun Microsystems Inc for the computers it built itself in its former incarnation. It signed a multi-year, multi-million dollar agreement with Sun under which it will integrate and resell Sparc-based computers as the basis for its telecommunications applications, which integrate database, call processing and audio subsystems for applications such as directory enquiries, toll and intercept services, and a variety of new speech processing services in the works. Computer Consoles originally used PDP-11s from Digital Equipment Corp before building its own Unix computers around the Motorola Inc 68000 microprocessor line.

MIPS DITCHES HOME RUN, PREPARES ACE SHOCKERS?

Following the cancellation of its Paragon ECL server and four-processor MX system projects, (UX No 341), Electronic News hears that MIPS Computer Systems Inc, Sunnyvale, California, has abandoned plans for future machines code-named the Next Generation Personal Computer and Home Run. The latter, it says, was to have been a Unix/MS-DOS machine built around MIPS' RISC and Intel Corp CISC parts. In their place, MIPS is said to be readying ACE-compliant desktops dubbed After Shock, Future Shock and R4000DT, built around its R4000 RISC and due around the middle of next year. Following MIPS' last quarter net loss and plans for staff reductions, US analysts are questioning MIPS's ability to keep its head above water until sales of these new machines kick-in to its revenue stream. The paper believes MIPS was prompted to bet the company's future on an ACE-compliant desktop business by stiff competition from the likes of Hewlett-Packard and IBM that has impacted its traditional server business. MIPS admits that new desktop business based upon the ACE machines is likely to challenge its traditional server base as the core element of its systems strategy over the next couple of years. However the shift in emphasis will bring it up squarely against the giants of the Unix workstation crowd, including Sun Microsystems Inc, Hewlett-Packard, Silicon Graphics and DEC, where competition will be much fiercer. Its current offerings go from an \$8,000 19 MIPS desktop to a \$200,000 55 MIPS server which run the firm's proprietary RiscOS Unixlike: this will be phased out as the ACE operating systems being developed by Santa Cruz Operation Inc and Microsoft Corp roll-out. The high-end of MIPS' server business has been plagued by problems with the ECL R6000 CPU supplied by its semiconductor partner Bipolar Integrated Technology. MIPS is due to announce new products during the first week of October based upon the R4000 part (UX No 348).

FUJITSU'S \$40m BUYS 44% OF IBM REFUGEE'S HAL FIRM

Campbell, California-based HaL Computer Systems Inc, the company formed by IBM Corp RS/6000 design team leader Andrew Heller to design its own - "much faster" - variant of the Sparc processor and build commercial Unix System V.4 machines with it, has caught the eye of Fujitsu Ltd, which has pumped in a massive \$40.2m for a 44% stake, agreeing not to raise it further. Fujitsu will also make the chips, make its patents available, build some of the machines, and market in the Far East. It gets access to the advanced systems technology that HaL, already a 140-employee company, plans to develop. HaL is thinking in terms of both workstations and high-end machines for applications such as airline reservations, and is working on the kinds of systems management and operations software now lacking in Unix.

ICL'S PLANNED ACQUISITION OF NOKIA PROMPTS SCO LINK-UP

ICL and the Santa Cruz Operation Inc are to hook-up next week in a new Unix alliance which comes on the back of ICL's planned acquisition of Finnish computer outfit Nokia Data Systems. Nokia has a long-term strategic alliance with SCO going back to September 1990 for its Unix products which run on the Intel Corp 80386 and 80486-based Alfaskop 10 systems. ICL is expected to join SCO's user alliance programme.

INTEL FINDS BUG IN 50MHz 80486, SUSPENDS SHIPS FOR A WEEK OR SO

Intel Corp has temporarily suspended shipments of the 50MHz version of the 80486 after finding that the parts, when clocked at the full speed, generate so much heat that the computer shuts down, the Associated Press reports. Intel says it has isolated the problem but told manufacturers to stop selling machines using the chip until it can get good parts out. It expects to resume deliveries of the chip in about a week.

RISCs, STILL BANNED, SEEM TO BE THE ONE ANOMALY IN NEW LIBERAL COCOM EXPORT RULES

by our Moscow correspondent

From September 1 a much reduced set of CoCom restrictions on high technology trade with the Soviet Union comes into effect. In a rare advance briefing, a US State Department ambassador outlined what this means for Western exporters of electronics, computers and telecommunications equipment.

US State Department ambassador Bradley Holmes announced last month that the relaxation of CoCom trade restrictions amounts to a 50% cut in existing export controls. This comes on top of the 33% cut agreed to in June 1990. He estimates that the new rules will reduce the number of export licence applications by 70%. The move represents a large reduction in the bans, bureaucracy and delay involved in selling high technology products to the Soviet Union. Last year CoCom - the Co-ordinating Committee for Multilateral Export Controls - agreed on a fundamental reworking of high-tech trade restrictions to Eastern Europe and the Soviet Union. A more favourable category was created for Poland, Hungary and Czechoslovakia, while relatively harsh restrictions continued to apply to the Soviet Union. The members of CoCom (NATO plus Japan and Australia minus Iceland) met in June this year to agree which items would remain on a much reduced "core list" of technology with potential dual uses - military applications. The status of the Soviet Union has significantly improved. The Paris-based organisation does not publicise its decisions and information is gradually filtered through to ministries of trade in Western countries. The philosophy behind the new rules is to decontrol all those items that are freely available to commercial users in the West. To a large extent this appears to have been achieved. Many mass produced microprocessors and memory chips have been decontrolled, making assembly operations on Soviet soil more practical. Effectively all personal computers are now exportable licence-free, and though the situation needs to be clarified, the same apparently applies to local area networks. Configurations of most minicomputers and mainframes are now exportable - many without licences. The previous bans on certain peripherals, network connectors and software have also been lifted. Says IBM World Trade communications director Robert Dunwell: "Basically there are now licensable configurations of everything we sell." In the militarily sensitive area of telecommunications, Holmes says the intention is to enable the Soviets to buy voice and data systems equivalent to those used in public networks in the West. Permitting microwave systems for use with high speed gateways will certainly help ease some of the congestion in data traffic in and out of the country. One group of products is subject to greater restrictions than before. Due to a change in the benchmark used to judge if computers are exportable, all RISC-based workstations will now need licences and all could be more difficult to export. The change is from PDR, Processing Data Rate to CTP, Composite Theoretical Performance. The new formula is far more lenient on personal computers, minis and mainframes but sends RISC ratings off the end of the scale. As co-ordinator and director of the International Communications and Information policy bureau at the US State Department, Holmes has been able to confirm officially the following changes to trade restrictions:

Microprocessors - all dynamic memory chips are decontrolled; most 32-bit microprocessors for use in personal computers are decontrolled; and chip manufacturing equipment and silicon bars and wafers are now exportable.

Personal Computers - all machines up to those based on the Intel 80486 processor running at 33MHz and the Motorola 68030 (or the Apple equivalent) can be exported licence-free.

Most minicomputers and commercial mainframes are now exportable - the Digital Equipment Corp MicroVAX and IBM System/36 now licence-free, bigger machines still need a licence.

Networks and Peripherals - almost all peripherals except high speed disk drives, ultra high performance graphics and signal processing equipment is decontrolled. Ethernet is now exportable licence-free and the industry believes all personal computer local nets will be exportable without licences.

Software - "virtually all" commercially available software and tools may be exported licence free.

Telecommunications - digital switching devices will be exportable. Public speech and data networks to be allowed "with features and functionality equivalent to those installed in the West right now." 156Mbps-64Mbps QAM Quadrature Amplitude Modulation microwave systems will be exportable at national discretion (a class of licensed exports) for use in connection with international gateways. Fibre optic lines up to 565Mbps and 1,550 nanometrics wavelengths for international traffic are exportable under favourable consideration procedure - a class of licensed exports for which approval is presumed.

XEROX'S KURZWEIL TAKES ON THE SUN ENVIRONMENT WITH UNIX-BASED SCANNER

Xerox Imaging Systems subsidiary and UK printer and scanner distributor Kurzweil Computer Products Ltd, Reading, Berkshire, has launched itself into the Sun Microsystems Inc workstation environment, with a Unix-based text and image scanner. The Xerox-designed, Japanese-made A3 ScanWorX is aimed at the pre-press market, incorporating large companies which produce their own manuals and local government agencies - the UK Ministry of Defence is expected to be among the first to place an order. The scanner, which has been available in the US for three months and is available now in the UK, is designed to cope with the demands of high volume processing, says Kurzweil general manager Sharon Wilmer, being able to scan pages up to 11" by 17" in under four seconds, and collating double-sided pages. It incorporates Xerox Imaging Systems' proprietary Intelligent Character Recognition software, which identifies the features which make a letter unique, rather than trying to match it to a standard font. ScanWorx can be networked, possibly justifying the cost of £15,000. The system runs with Sun's SunView graphical user interface on the Sun 3X, Sun 4, SLC and Sparc workstations. Versions for the RS/6000, Digital Equipment Corp and Hewlett-Packard Co environments are planned. Until now, Kurzweil has marketed its products on a direct-only basis, but the new Sun alliance - which, for Sun's part, is a way into the office systems market - paves the way for value-added resellers to be brought in, in the pre-press arena to begin with.

TIVOLI FOUNDER EDGES HIMSELF OUT

Just when Tivoli Systems seems to be hitting its stride with its technology being accepted by both OSF and Unix International - see front page - company founder, Bob Fabbio ups and leaves. His departure, he said, is essentially the result of having worked himself out of a job, having replaced himself as president and CEO by hiring Lotus veteran Frank Moss and bringing in vice presidents of marketing and development. He has nothing specific in mind for the next venture but reckons to leverage Tivoli's apparent success into some other endeavour, probably in distributed computing and distributed management.

MARKET ROUNDUP

Applix is adding an optional E-Mail facility to Asterix that let Asterix and non-Asterix users exchange mixed-media compound documents across networks, heterogenous platforms and operating systems: Due in the third quarter it's \$200 and called simply Asterix Mail.

China's Qinghua University is using NCR Corp's open cooperative computing architecture to connect computers from six vendors into a Unix network based around two NCR Tower 32/600 systems.

The Boston-based Information Systems Division of Mitsubishi Electronics America Inc reports that it is now shipping the XC-3725C, a vast 37" colour monitor designed for viewing general business presentations and computer aided manufacturing, design and engineering: the XC-3725C is compatible with the Apple Computer Inc Macintosh II, and most personal computer, PS/2 and Unix workstation resolution standards; the monitor has a built-in video scan converter that converts NTSC, PAL and SECAM composite video television signals.

Chantal has signed a development and licensing agreement with AST Research for their implementation of its Paragon disk array software technology with RAID 5.

EDS former vice chairman and president Morton Meyerson, who retired in 1986, is going to be advising Dell Computer on domestic and international strategies.

Using a BrxPPP add-in board from Brixton Systems Inc, Cambridge, Massachusetts, remote Sun Microsystems Inc workstations users can transparently share applications, databases, printers, files and other peripherals via telephone line connections - or routers that support the Point-to-Point protocol - as if they were on a local area network. Meanwhile Brx3770/RJE connects Unix systems and IBM mainframes using TCP/IP and IBM's SNA: out now, both products are priced at \$1,950.

New York-based GNP Computers is to distribute Borland International Inc's Ashton-Tate Corp dBase IV to Sun Microsystems Inc value-added resellers in the US: the deal is reckoned to be worth around \$2m a year in sales. GNP will also supply its DEI-1 multiport serial port board and software to VARs and users to enable them to move existing dBase applications from personal computers on to Sun Sparcstations.

Columbus, Ohio-based Goal Systems International Inc has paid \$650,000 cash for substantially all assets of White Plains, New York-based Training America Inc and hired the company's two principals. The main asset is the Explain software products for development of computer-based training, documentation, and employee performance support systems. Explain is available under MVS, MS-DOS and Unix and a version for OS/2 is in development. The company had \$2m sales last fiscal.

Hitachi Ltd and Mitsui Life Insurance have jointly developed an optimal funds allocation system that uses fuzzy logic for use by institutional investors: the system runs on the Hitachi 2050/32E Unix workstation, but the actual simulation of factors such as profit and loss and dividend income is performed on a mainframe host; Hitachi will be marketing the system to other life insurance companies and institutional investors such as banks.

Weitek Corp, Sunnyvale, California has grown and diversified to the point where it feels it needs two divisions, each under its own general manager, and the company, best known for its floating point co-processors, has formed the User Interface Processors and the Workstation Products divisions. The company says that the switch will make it easier for it to implement its strategies for its new user interface processor and controller business, and in its core business in RISC technology. Quantum Corp founder James Patterson becomes chairman.

Prime Computer Inc has been found in contempt of court for failing to comply with an anti-trust injunction over third party maintenance: Prime had been ordered to notify customers that they no longer had to take Prime maintenance in order to get new releases of software; Prime notified only 14 customers and told others that they were still bound by their service agreements and has now been ordered to send letters to users offering them the opportunity to sign up with a third party maintenance company.

Excerpts from the bulletin board set up by IBM Corp employees to enable their colleagues to sound off about the company and respond to John Akers' strictures, are full of angry humour: "people would stand and watch without comment as an IBM manager tossed thousand dollar bills off the nearest bridge," said one, fearing that a challenge would be a "career-limiting move."

Hewlett-Packard Co has a set of Unix training courses available on CD-ROM: the disks run on its workstations and on personal computers fitted with CD-ROM drives - a package of courses starts at \$950.

Inglewood, California-based Locus Computing Corp has won agreement from Santa Cruz Operation Inc that Santa Cruz will offer the Locus Merge product for running MS-DOS under Unix in its Unix System V implementations; Merge is already a standard component of Open Desktop.

Uniface Corp, Alameda, California says its Uniface 4GL application development system is available for Informix-SE and Informix OnLine.

VMark's Pick Universe software is now available on Wyse's 80386/80486 boxes running Unix V/386 3.2.1 and on Prime's EXL7000 Series.

Steve Job's NeXT Computer Inc is said to be readying a 33MHz 68040 system for introduction early next year, planning a 50MHz multi-processor for March, but awaiting the next-generation 88110 from Motorola before it can build a RISC box, now not expected before the third quarter of 1992.

Hewlett-Packard has formed a Professional Services Division which will provide consulting, education and project management services for DEC, Sun and other vendors' equipment, as well as its own machines: headed-up by Chu Wang the division starts life with 4,600 employees, a main aim will be to promote HP's open systems products.

Xerox has formed the Xerox software group - Xsoft - to ramp-up development of its document management software and market its GlobalView network computing environment: it's based in Sunnyvale, California, and combines Xerox Systems Software and Xerox Integrated Systems Marketing.

Milpitas, California-based Netframe Systems Inc - founded by Carlton Amdahl - has introduced the low-end NF100ES series of multi-processing servers based around Intel Corp's 80386 processor: the 25MHz machine uses up to three CPUs, costs \$13,000, and comes with from 8Mb to 32Mb RAM and 200Mb disk.

AT&T is to move most of its mid-range computers, including the 3B2 and StarServer lines - along with two managers - into NCR's Midrange Computer Products division, although the lines will continue to be located at AT&T's plant in Naperville, Illinois, which will transfer to NCR: a new division, the Multimedia Business unit has been created within NCR's General Purpose Products Group to create multimedia applications for NCR computers.

IBM Corp has taken its first steps towards forming a wholly owned subsidiary in Poland later this year. IBM Poland will be based in Warsaw with local offices in three other major cities and the company has started recruiting. IBM is currently represented in Poland by Derman, a private firm that provides marketing, installation and support service.

Business is so bad that IBM Corp has had to be rather more cautious than usual this year in its annual round of US price hikes, and it has sweetened the pill by cutting prices on a few disk drives for mid-range machines. Effective January 1, many hardware and software products will go up by 5%, including 3090 CPUs but excluding ES/9000s; the RS/6000 and AIX, AS/400s, System/88s and PS/2s and PS/1s are also excluded.

A year after the thing was due, LSI Logic is still tinkering with the eight-chip chipset it hoped to substitute for Sun's in the SparcKit plans it sells to cloners and save the royalties it pays to Sun: the hurdle remains the memory management and cache part which takes four chips to do in a conventional Sparcstation 1.

THE ACE HAND: SANTA CRUZ OPERATION LAYS ITS CARDS ON THE TABLE

by William Fellows

Microsoft Corp's stake in the Santa Cruz Operation Inc currently hovers around the 15% mark. It has one director sitting on SCO's board. SCO UK's system marketing manager, Mark Miller, says the two firms have kept out of each others' way of late, but that their roles as system software providers to the ACE initiative developers means that they'll be competing head-to-head for business for the first time pretty soon. If Microsoft is late to market with its New Technology ACE product it'll be good for SCO, says Miller, but "its going to be neck and neck in any case." To boost its chances of attracting customers that would otherwise head straight for the nearest Microsoft shop, he says SCO is going to pick-up an emulation package that will allow users to run Microsoft Windows applications under Open Desktop. Technology from Insignia Solutions - recently endorsed by Microsoft itself (UX No 347) - and Locus Computing is currently under consideration.

Miller believes one reason that the ACE initiative - which SCO has staked much of its future on - will be a success, is that the firms involved will be able to bandy together to bid ACE-compliant technology on large contracts in the defence, public and corporate sectors, all of which are increasingly specifying the use of open systems standards. Indeed Miller says that rationale documents from the likes of the User Alliance for Open Systems and the Petrotechnical Software Corporation are gradually becoming de facto procurement specifications. He expects X/Open's upcoming Xtra conference, between November 13-15 in Reston, Virginia, to come out with a user document which will also become a widely-adopted guide to procurement. The rash of small - and in some instances previously unheard-of - companies in ACE, will be getting subcontracted work from the larger ACE members that can't do specific pieces of development or integration work themselves.

Miller admits SCO won't be writing much of the code in its DEC Ultrix, Open Software Foundation OSF/1, AT&T Unix V.3.2 and MIPS Computer Systems Inc RiscOS-derived Open Desktop releases for ACE. However, whilst up to 80% of the code may be imported, the other 20% it is writing encompasses the vital compatibility, integration and standards work that allows the product to be offered as a single, bundled package.

Links

Although effectively aligned with the Open Software Foundation side of the industry, SCO is keen to maintain its links with the Unix System Laboratories/Unix International camp. However Miller is critical of the way Unix V.4 is being brought to market. Although it is held by the hand of UI, and written by USL, "by the time that it [V.4] reaches customers it is coming from someone else, and inevitably those firms will stick their own proprietary bits in," he says, tilting at rival Unix supplier Interactive Systems Corp. He believes USL shot itself in the foot by pricing itself out of the low-end of the market with the licensing terms it imposed on Unix V.4. Indeed price is one of the main reasons that SCO hasn't taken-up Unix V.4 for its own purposes, he claims. "If they [USL] had priced it lower, SCO might've had V.4 now." But in any case, Miller argues, "Unix V.4 is a technology, not a product, and there is a problem developing to V.4 because there are a lot of imperfections."

Commenting on Unigram's front-page story last week about ACE lynchpin Compaq Computer Corp preferring Hewlett-Packard's Visual User Environment front-end to the IXI X.desktop manager component of Open Desktop, Miller fully expects Compaq to backtrack and take whatever SCO offers to the ACE crowd (UX No 348). Presenting it almost as a fait accompli, Miller says that Compaq will come round to X.desktop in ACE Open Desktop because at the end of the day "Compaq shifts hardware, SCO does the software."

The ACE members will be able to build at least some differentiation into their MIPS Computer Systems-based platforms - not the Intel Corp variants - by virtue of SCO's HAL. The hardware application layer is a software tool built into the hardware that allows different system components - starting with Open Desktop - to be plugged-in. HAL will, for example, enable different types of mass storage systems or graphical user interfaces to be configured. It should also make the MIPS-based ACE systems "uncloneable," Miller optimistically believes.

As far as multi-processing support goes - aside from those features in OSF's OSF/1 Mach-derived kernel - the Intel version of ACE Open Desktop already has Corollary Inc's multi-processing technology in it. The MIPS version - although the ARC-compliant R4000-based systems are, on the whole, are expected to be uni-processor offerings - will have multi-processing technology in it too, eventually, Miller says. SCO is currently evaluating MIPS' own multi-processing technology, that from MIPS chip customer, Silicon Graphics Inc, as well as Corollary's, to do the job. SCO will also include a graphics library in the ACE system software, it is looking at ACE member Silicon Graphics' offering, as well as other Unix graphics technologies like PEX and PHiGS.

Miller is confident that DEC and Compaq will be first to market with ACE development boxes - DEC already has its ARC-compatible 5000 machines. They'll be followed by ten to fifteen others vendors with what are expected to be the first commercial platforms, around the third quarter of next year. Many of these will arrive on the back of OEM deals between the various ACE firms. Miller believes many ACE companies will not bother developing their own systems but will simply buy-in boxes from one of their ACE compatriots, work in their own value-added features and sell them on under their own badge.

Other architectures

SCO is confident that the relationship with MIPS will prove successful, but is pragmatic enough to admit that it - and ACE as a whole - will turn to other chip platforms if things don't work out. Indeed Miller expects Open Desktop to be implemented across other architectures once the Intel and MIPS efforts are under full steam. He says ACE didn't really consider Sun Microsystems Inc's Sparc RISC chip for its initiative, because its Sparc International supporters' club only controls part of the technology, and Hewlett-Packard Co is on its own rule-the-world RISC trip in any case. "But these relationships could change," Miller adds.

Object-oriented technology is important to SCO, Miller admits, but it is "not mature enough yet," in his view. ACE Open Desktop will include a new version of IXI Ltd's desktop manager, X.desktop 3.0, which has a range of object-oriented features not in the present release (UX No 348). SCO will take its guidance from the Object Management Group's efforts, and will buy-in technology for Open Desktop from OMG-compliant suppliers as and when it becomes available. OSF's distributed computing and distributed management technology will be added as and when it rolls-out.

There will be three releases of ACE Open Desktop. An initial developers' version, with porting tools, language support and application programming interfaces will be followed by full-blown versions for personal systems and servers around this time next year. By then, Miller expects the top fifty software packages to be running under the environment. Miller reckons the current SCO Open Desktop product was "three years too early. It was too advanced," he claims, admitting to sales of 10,000 - 6,000 of those to developers - with around 300 applications now available for it.

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As well as the different releases, there will also - initially - be separate implementations of ACE Open Desktop for the Intel and MIPS architectures. The Intel version is derived from SCO's existing Unix-based product. It comes with the Ingres relational database bundled. The MIPS edition will be based upon the Ultrix-OSF/1 code supplied by DEC. This will include a non-proprietary SQL front-end so that developers and customers can add their own database choice. Following the two initial versions, all future releases will be derived from the MIPS-based product. Miller says SCO's UK development team is already working on the Ultrix-OSF/1 Open Desktop implementation for Intel platforms.

Europe

From October 1st, SCO, which currently runs its European operation from Watford in the UK - local offices only handle sales - will be opening full-blown subsidiaries in Germany, France, Italy and the Scandinavian countries. Each will offer a full range of support, administration and other services, and they'll be encouraged to work more closely with local partners. Part of the reason for developing this hub-and-spoke operation stems from the fact that SCO has recently been hiring executives with experience in larger industry outfits. They have brought with them the ideals and business acumen of the bigger computer firms: "so SCO is changing," says Hewlett-Packard veteran, Miller.

ACE ADDS 24 - NOW COUNTS 85

Twenty-four more companies announced their adherence to ACE last week, bringing the total number of firms flocking to the ACE banner to 85 collected since the beginning of the year. The firms, mostly low-profile operations, are divided among the US, Europe and Far East and this time include a clutch of software houses as well as hardware purveyors. New systems members include American Megatrends, Cache Computers, Myriad Solutions, Dansk Data Elektronik, Emerald Computers, Everex Systems, HCL America, Interphase, IRTV mbH, Micronics, Epson, Sigma Designs and UltraStor. Software firms include Alcatel TITN, Edinburgh Portable Compilers, Insight Development, Momentum Software, Prolific, Samsung Software America, Software Research Associates and Translation Systems.

DEC BACKS IXI IN OPEN DESKTOP

In view of Compaq's attempt to get HP's VUE substituted for IXI's X.desktop as the desktop manager in the ACE Open Desktop (UX No 348), we asked DEC last week where it stood on the issue. DEC's official response - no mean feat to wring out of them by the way - was that it would back whatever SCO decided was best, and that would appear to be IXI. Of course DEC has its own agenda too having a secret deal with IXI to put X.desktop on its VAX and Ultrix machines as well as its ACE boxes.

PICKTEL PREPARES A MAC-LIKE INTERFACE FOR PICK

Irvine, California-based PickTel Inc, the erstwhile Pick Systems Inc subsidiary now an independent entity, is hopeful of closing an exclusive deal that will put a third-party object-oriented Mac-like interface over Pick on Unix System V.4. Such a move, PickTel officers reckon, would make Pick on Unix suitable for software engineering work and appealing to the Big Six accountancy firms like Peat Marwick McLintock and Andersen Consulting. PickTel has now washed its hands of reselling AT&T Co hardware and is simply focusing on the software it resells under licence from Pick: Pick under System V.4 for 80386 and 80486 boxes and other AT&T systems. It is currently in the process of doing an implementation for Pyramid Technology Corp's new MIPS Computer Systems Inc RISC-based machines. PickTel expects to deliver the interface, code-named I-sed, by the year-end.

BANYAN HITCHES ITS HORSE TO SCO...

Meanwhile, following Novell Inc's recent alignment with the Unix System Labs/Unix International side of the industry, Westborough, Massachusetts-based Banyan Systems Inc has taken itself off to the Santa Cruz Operation, signing a deal to implement a version of its Unix V.3-based Vines networking software under SCO's Unix operating system products and jointly develop and market future networking solutions and services: first fruits are expected in the first half of next year. Although Banyan seems to have been slow, in comparison to Novell, to take advantage of its strong Unix heritage, SCO says Banyan is particularly strong in certain places, like France and the Scandinavian countries.

...AS NOVELL TALKS V.4 WITH USL, NCR AND SUN

Meanwhile, Novell Inc is reported to be talking to several companies, including Unix Systems Labs Inc, Sun Microsystems Inc and NCR Corp, about developing the Unix V.4 version of its NetWare networking software, (UX No 344). In addition to file and print services, Novell will offer routing and LAN to WAN integration services, previously only available from third-parties. Novell is also planning an X-Windows front-end for NetWare servers. The "Portable NetWare" name is also to be phased out according to US reports: Novell vice president Darrell Miller is quoted as saying "The name 'portable' proved to be a detriment. It gave the impression that it wasn't compatible or current with native NetWare, and this isn't the case. 90% of the code is identical." Future products will be called NetWare for AIX, OS/2 and so on, Miller said.

FUJITSU POACHES UNISOFT BRASS TO STAFF NEW OPEN SYSTEMS OUTFIT

Fujitsu Ltd is believed to have recruited core staff for its Open Systems Solutions Inc Unix research and development venture in Emeryville, California, from Unix software house UniSoft (UX No 348). UniSoft founder and president, Jeff Schriebman, becomes chief operating officer of the start-up, which expects to have a roll-call of 30 by the end of the year. It will develop Unix system software products for Fujitsu - and its Amdahl and ICL siblings - which will be marketed worldwide by other Fujitsu units. Fujitsu's Unix line includes the UXP/M mainframes introduced in August last year, the A series Motorola CISC-based mid-range systems, and Sun Microsystems Inc Sparcstations which it resells. Initial investment in the firm is put at \$2.3m; the company has also established a software development firm in China - Beijing Fujitsu Systems Ltd as a joint venture with China National Computer Software and Technology Service Corp and China International Computer Software Engineering Corp, capitalised at \$362,000. Fujitsu will hold a 51% stake in it.

LARRY LYTLE LEAVES NETWISE FOR INTERACTIVE MEDIA POST

Unix war veteran Larry Lytle, in the thick of things as strategic relations director at remote procedure call house Netwise, has pushed on and become executive director of the 209-member Interactive Multimedia Association. Lytle, an HP alumnus and one of the original organisers of OSF who found himself on the opposite side when he went to Netwise, described the associations's work as developing multimedia portability and compatibility standards for multiplatforms. Support of some of its definitions are already required by the US Defense Department and National Institute of Standards (NIS). The organisation increasingly finds itself involved with OOP and distributed Unix-based platforms where technologists are attempting to put video, audio, graphics and animation all on one platform. IMA members include vendors, developers and users such as IBM, DEC, HP, NCR, 3M, Kodak, Sony, Pioneer, Philips, Apple, Microsoft, Lotus, National Geographic and Lucas Films.

unigram x

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In the US, NCR Corp is rumoured to have approached Sequent Computer Systems Inc and Pyramid Computer Systems Corp about the possibility of partnering the firm on development of its Intel Corp 80486-based mid-range System 3450 and 3550 symmetric multi-processors that are due in the fourth quarter.

Stratus Computer Inc, Marlborough, Massachusetts, says Qantas Information Technology Ltd, Sydney, Australia, has ordered a Stratus XA2000 system to link its Qantam computerised reservation system to other on-line booking systems in a deal worth \$800,000.

Now in Santa Barbara, California, as well as Paris, French graphical user interface house Non Standard Logics Inc says it is now shipping version 2.0 of its Motif-compliant, Wx2 Unix text editor for X-Windows programmers.

Network Computing Devices Inc, Mountain View, California, has set up a subsidiary in Paris to handle sales and support in France: NCD France SARL is headed-up by Christophe Culine.

Amsterdam-based ACE Associated Computer Experts bv has taken-over the business of Dutch parallel processing outfit Parsec Developments, developer of the Par.C parallel compiler for the Inmos transputer: ACE already has a Fortran compiler for the new Inmos T9000 transputer - see page one - and distribution rights for the Amoeba distributed operating system developed by the Free University of Amsterdam.

IPC Corp Pte Ltd, Singapore, is to sell Norsk Data AS affiliate, Oslo, Norway-based Dolphin Server Technology AS' Motorola 88000-based multi-processors as the IPC Server 88000 in the Pacific rim area, via its 40 distributors.

In the UK, the Midland Bank's First Direct 24-hour banking subsidiary has bought two Sequoia PS300 systems from Ultimate UK Ltd, Watford, Hertfordshire, which will be used as front-ends to the group's mainframe systems in Leeds.

Car alarms are among the most mindless and anti-social features of modern life, so it's not good news that after the howling car, which only makes afflicted passers-by want to blow the damn thing up while those trying to get to sleep want to blow the owner up as well, we are confronted with the threat of the howling laptop: Bondwell Europe Ltd of London N17 proudly announces that its latest models feature the Portable PC Alarm System, which as well as a security program to guard against unauthorised access to data, includes a motion detector alarm, which once set, triggers a 90 deciBel alarm that goes off if the machine is moved or lifted and can only be disarmed by entering a password code programmed by the owner; the system may give the owner the satisfaction that the thief will not get any value from the machine, but if he wants it back, he is likely to have to retrieve it, still squealing, from the nearest river.

SPSS UK Ltd, Chertsey, Surrey, has released a version of its data analysis software for Acorn Computers' R260, ARM3 RISC-based Unix workstation: SPSS-X costs £2,000 for up to three users.

Billion-dollar Science Applications International Corporation has released SAIC VUE, a derivative of HP's Visual User Environment that puts Motif on Sparcstations. The software runs either the MIT X server or OpenWindows X Server which supports Open Look apps on the same system in the same workspace. The SAIC and HP software are virtually identical but SAIC VUE is integrated with the Sun's native X and DeskSet applications.

1776 Disk Array Software, a new product from 1776 Inc for use with SCO Unix 3.2, will be tightly linked with the operating system making it possible to boot the system without separate disk drive and lowering the cost barrier: Available mid September, it is priced at \$995 in North America; \$1,195 elsewhere.

Up Against ACE's roster of 85 members, Sparc International is claiming over 200.

Unix Open Solutions, the Comdex-backed expo that's being held in San Jose, California this week, just got its 1992 schedule firmed up: it's moving to San Francisco and got dates of March 17-19 which puts it uncomfortably close to Uniforum which is in the same venue January 22-24. Unix Solution's organisers say they aren't being competitive; it's just those were the only dates they could get.

German giant BASF AG has signed-up for Boulder, Colorado-based Netwise Inc's remote procedure call technology - that's the stuff used in AT&T's Unix - where it will be used as a common application programming interface to integrate around 20 mainframes and thousands of workstations.

Dataram Corp, Princeton, New Jersey, has new add-in memory boards for Sun Microsystems Inc and Hewlett-Packard Co workstations: the DR-175 takes Sparc 2 system memory up to a maximum of 128Mb and costs \$4,500 - the DR-9425 for HP 9000 Series 425e workstations is available in pairs of 4Mb, 8Mb and 16Mb boards priced at \$700, \$1,400 and \$2,800 respectively.

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Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.
Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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The weekly information newsletter for the UNIX ® community worldwide

London, September 9-13 1991

Number 350

INTERACTIVE UP FOR SALE - SUNSOFT THE LIKELY BUYER

Unix system software house Interactive Systems Corp has been put up for sale by its parent company Eastman Kodak, and Sun Microsystems' SunSoft subsidiary is the most likely candidate to buy it, according to industry sources. Talks have been taking place over the last few months, and a number of companies, including Intel Corp, Unix System Labs and Novell Inc are said to have been involved. But Sun is apparently the most interested, and also the best fit to take on the business - it's keen to get into the Intel market with its new Solaris Unix V.4 operating system (see below), and has an urgent need to build up its strength in distribution. Behind the scenes, Interactive struck a "gentleman's agreement" with Sun back in April to carry out the work on the Intel version of Solaris. Sun has also been working with Kodak and Interactive on Photo CD and electronic imaging technology, areas which Kodak is likely to keep an interest in, whatever the outcome. Kodak, which at one time held up to 7% of Sun stock, acquired Interactive in March 1988 on terms that have never been disclosed (UX No 172). Interactive is a Unix pioneer, it produced the commercial Unix port for DEC's PDP series way back in 1977, and went on to co-develop Unix/370 and AIX for the RT in conjunction with IBM. More recently, it has majored on packaged Intel-based Unix products in competition with the Santa Cruz Operation Inc, heading down the Unix V.4 route in contrast to SCO's leanings towards OSF/1. It acquired TCP/IP communications specialist Lachman Associates in 1989. Interactive in the UK and US would not comment on the story, while John White of Kodak, vice president and general manager of Eastman Kodak's integration and systems products division (and previously Chairman and CEO of Interactive) said he was "very happy with Interactive's progress - it has been growing and getting stronger". Completion of the deal is still thought to be some weeks away.

...AS SUNSOFT REVEALS SVR4/MP SOLARIS FOR SPARC, INTEL

As expected, (UX Nos 345, 349), SunSoft last week revealed Solaris, its shrink-wrapped bundle of distributed Unix SVR4 operating system software, interface, windowing, networking, object-oriented and multi-media development tools at its Catalyst Developers Conference in San Jose, California. Solaris will figure not only on Sun's Sparc RISC, but, aiming a blow at Microsoft Corp and the ACE crowd, will also be available for Intel Corp 80386 and 80486 platforms. Although Sun has, up until now, been betting its future on the success of the Sparc RISC backed by a strong compatible marketplace, if all goes to plan, the firm hopes that two years out there will be up to one million machines shipping every year running Solaris - half of them Sparc systems, and the other half, third-party Intel boxes. The seriousness of its Intel intention is backed by the signing of four of the world's largest personal computer suppliers - AST Research Inc, CompuAdd Corp, Dell Computer Corp and Toshiba - to market Solaris on Intel platforms. Version 1 of Solaris includes Sun's existing SunOS 4.1.1 Unix operating system plus the Open Windows environment and version 2 of the DeskSet toolset. Available now, for the Sparc only, it costs \$1,400 on CD-ROM. It is version 2 of Solaris that the Sun user - and Sparc-compatible - community has really been waiting for. It includes Sun's multi-processing, multi-threaded re-write of AT&T Unix SVR4 - dubbed SunOS 5.0 - the Open Network Computing environment, Open Windows version 3, the Open Look, NeWS and XView graphical user interface toolkits, the object-oriented ToolTalk application integration facility, DeskSet - a suite of 15 workgroup and multi-media applications - and a range of migration tools to allow Solaris 1.0 or SunOS 4.1.1 users to move up to Solaris 2.0. However there is no one generic port of Solaris to "the Sparc." Confirming what some Sparc detractors have oft repeated - that there are serious incompatibility issues affecting the architecture - SunSoft's director of business development, Allan Snell, said the firm will be releasing separate implementations of Solaris for the range of Sparc CPUs on offer from the likes of Fujitsu and Tera Microsystems Inc. As well as the personal computer majors, SunSoft has signed up Intel Corp, Netframe, Novell Inc, Opus Systems, Solbourne Computer Corp, Star Technologies and Tatung Science and Technology Inc - as well as ASCII Corp in Japan - to distribute Solaris 2.0. Again, on the Sparc, it's priced at \$1,400 - \$800 for laptop versions. To run Solaris 2.0, Intel boxes will require a minimum of a 33MHz 80386 or 80486 CPU with floating-point capability and cache, 8Mb RAM, 200Mb disk, EISA bus architecture - though AT bus platforms can be hooked-in - and a 1,000 x 800 resolution monitor. SunSoft says 33MHz implementations will have the performance of Sun's IPC and SLC systems, whilst 40MHz or 50MHz machines will perform at the level of a Sparcstation 2. Volume shipments of base systems are thought to be around two years away, and will carry tags of around \$5,000. For the Intel machines, Sun's Unix kernel has been divided into 64 separate parts - like a microkernel - so that the system only calls on those parts of the software it needs. Solaris 2.0 for Sparc and Intel environments is due out on general release by the middle of next year, with developer versions available soon and early access promised for the first quarter of 1992. Snell added that SunSoft would be happy to consider porting Solaris to "any volume platform," including the MIPS Computer Systems Inc RISC and IBM's RS/6000. For other core Unix technologies - such as C++, Fortran, Cobol, Ada and Pascal compilers - as well as integration solutions like an MS-DOS emulator, you have to go down the corridor to Sun Technology Enterprises and strike a deal.

GALAXY MULTI-PROCESSORS

FILL A VOID, WHILST JUPITER

SUPERSCALARS STAY ON THE PAD

The irony of the Solaris announcement - see opposite - is that although Sun Microsystems Inc has completed half of the equation with its symmetric multi-processing operating system - it still has nothing to run the stuff on. However, the Mountain View, California-based workstation manufacturer, which has run into a number of well-documented hardware and software problems in its multi-processing quest, now seems resigned to a middle approach which will see it introduce a stop-gap range of asymmetric multi-processing servers and a workstation over the next few weeks (UX Nos 305, 345, 349). The Galaxy systems will utilise a maximum of two pairs of 40MHz Cypress Semiconductor Sparcs, with top-end performance pegged at 90.3 SPECmarks on a four-processor box, 50.5 SPEC marks for a two-CPU system: that's around four times the performance of Sun's current high-end Sparcserver 490. The Sparcstation 630MP, Sparcserver 630MP, 670MP and 690MP support up to 128Mb RAM and 1.3Gb disk at the low-end, up to 640Mb RAM, 10.4Gb disk and 150 users at the top. Prices are thought likely to come in around those of the current Sparcserver range, that's from \$30,000 up to \$100,000. Even Sun insiders are willing to admit that these boxes are unlikely to worry the likes of Hewlett-Packard Co, whose uni-processor Snake workstations are already up to 76.8 SPECmarks (UX No 348): it's understood that HP can't make enough of the things to meet demand. Nevertheless, Sun is also reported to be pressing ahead with plans for a superscalar box based upon Texas Instruments' overdue Viking, or SuperSparc symmetric multi-processing unit (UX No 349). Reportedly code-named Jupiter, it is likely to leap-frog Sun back to the top of the Unix performance stakes. The problem for users is that if they move applications over to the asymmetric Galaxy boxes, it will only be a matter of months before another software re-write is required for Solaris 2.0 on the Jupiter.

SUNSOFT ANNOUNCEMENTS

ICL and SunSoft work on portability

In a move to perhaps try and distance itself from its parent company - and the rest of its close relatives - in the UK, SunSoft's Solaris announcement was hosted by ICL, which has also signed a technology agreement with the software outfit. The two say they will work together to ensure that applications developed for Solaris, or for ICL's Unix SVR4-based DRS/NX DRS6000 environment, can run across both company's Sparc platforms. Although ICL did the original reference port of SVR4 for the Sparc RISC (UX No 256), at present, applications that run on Sun Sparc platforms are incompatible with those that run on the ICL Sparc boxes. ICL and SunSoft say they will integrate system-level source code and develop and market unspecified system software products based-upon ICL technology. However, ICL will not be selling Solaris on its Sparc systems, although may do so on its OEMmed Intel platforms, if customers ask for it. ICL also plans new models in its multi-processing DRS6000 range of Sparc systems early next year. The current two-CPU limit is set to rise, along with the 33MHz clock rates of the Sparc chips it uses.

ICL doing secure SVR4 for Sparc

In a separate announcement, ICL says it has been commissioned by Unix System Laboratories to do a reference implementation of the B2-level Enhanced Security version of Unix SVR4 - SVR4.1 - for the Sparc architecture: it'll be out around the middle of next year. And ICL has signed up Europe's largest native software company, Software AG, to port its Entire function server technology, including the Adabas database and Natural fourth generation language to its Unix V.4 platforms.

Solaris = Distributed Objects Everywhere

Solaris 2.0 - see front page - is the first step in what SunSoft is calling Project DOE: Distributed Objects Everywhere - and more will be revealed later this year, it says. The distributed object management facility - or DOMF - object-oriented technology that it is developing in conjunction with Hewlett-Packard will be contained in future releases of Solaris, beginning with version 2.1. This is the stuff that Sun and HP have submitted to the Object Management Group as the basis of its Object Request Broker. OMG subsequently told Sun and HP to work to integrate their DOMF technology with the other solutions submitted by the likes of NCR, ODI, DEC and HyperDesk. It is unclear whether SunSoft will include technology from these other suppliers in the object-oriented components of Solaris, more likely it will be "compatible" with what OMG eventually comes up with. SunSoft also says it will "contribute to the implementation of Unix System Laboratories Inc's Atlas distributed computing environment," though the company was not able to confirm how this will pan out, or how it will relate to the distributed functionality in Solaris.

Sun: islands of information?

One of the problems, now that Sun Microsystems Inc has devolved itself into Sun Microsystems Computer Corp, SunSoft Inc, Sun Technology Enterprises and Sun Express - plus the Sun Laboratories effort - is that effectively there are now islands of information within the same building: they won't comment on what each other is up to. As far as its international operations are concerned, Sun UK remains Sun UK: it will sell all Sun products. However, questions relating directly to software are being referred to SunSoft in the US. In the light of the acquisition of Interactive - see front page - it might well be that SunSoft will work out of Interactive's international bases.

UNIX LITE - FUTURE "IN DOUBT?"

Sun's announcement now throws the future of other desktop Unix projects into question, notably the Unix International/Unix Systems Labs effort to produce a "Unix Lite," or golden master binary version of Unix (UX No 328). Sun is reported to have said that it won't be taking that particular offering, because it believes that in designing the thing for systems with as little as 4MB RAM and 80Mb disk, UI/USL is pitching Unix too far down the market, where users can more profitably use MS-DOS. Despite this, Unix International has hired former Commodore staffer Jesse Bornfreund as director of desktop marketing - a newly created position - to try and kick some life into the thing. Distribution is going to be one of the key factors determining the success or failure of these mass-market products, and Novell Inc - already close to USL - is reported to be in talks with the two about doing just that.

Sun Microsystems Inc's former director of corporate technology marketing, Bill Keating, who has been with the company for eight years, has moved on to become vice president and general manager of C++ outfit Rational Technology.

After all this time, Toshiba says it is now contemplating bringing its AS1000 Sparc portable into the US market in the first or second quarter of next year.

And RDI, currently the target of a copyright lawsuit over the Mac-compatible element of its Brite Lite Sparc laptop (UX No 343), is reportedly readying a 1152 x 900 resolution laptop screen: sources say prototypes have been spotted, but production won't begin until October at the earliest.

SOLBOURNE DEBUTS SERVERS, LUGGABLE WORKSTATION IN EUROPE

Following the US launch of its Series 700 mid-range multi-processing Sparc servers, transportable S3000 workstation and multi-channel accelerator board in the US (UX Nos 346, 343), Solbourne Computer Europe, Swindon, Wiltshire, last week followed its parent's lead and introduced the new models into Europe. Over for the London launch, Doug MacGregor, founder and chief executive officer of Solbourne, admitted that whilst Solbourne "was struggling a year ago," it had now rationalised the number of projects that it was working on and would be focusing primarily on its server business. With the - albeit faltering - emergence of the Sparc compatible market, and the expected - if overdue - arrival of multi-processing Sparc systems from Sun Microsystems Inc, Solbourne looks increasingly as though it may in future become trapped between a rock and a hard place. However, MacGregor says, on the one hand it "will work with the Sparc cloners," where appropriate, collaborating on contracts and joint marketing, on the other, Sun's well-documented problems with its multi-processing efforts means that it is "two years behind" Solbourne. Furthermore, MacGregor says, Solbourne will track Sun's hardware efforts, and will deliver superscalar technology in the same timeframe as Sun.

NETFRAME ENTRY SERVER AT \$13,000

Milpitas, California-based NetFrame Systems Inc - founded by Carlton Amdahl, son of the Good Doctor - has introduced the low-end NF100ES series of multi-processing servers, claiming that the purpose-built machine is cheaper than personal computer-based servers. The machine supports 40 users and can be expanded to take 1,000. It has dual concurrently operating buses, ECC memory, dual fans for cooling, independently operating input-output processors and auto restart and it can be managed remotely. It starts at \$13,000 with a 25MHz 80386 and has up to three "Intel 80386-class" processors for input-output. Remote control is provided by an independently powered Intel 8088. The price includes 8Mb, 200Mb disk, SCSI II controller, an Ethernet or Token Ring connection and an RS232 port; out now.

TATUNG SPARC STATION FOR \$4,290

Making it appear that IBM Corp still isn't up to speed on hitting the fast-moving pricing target in the low-end Unix market, even before the company announces its bottom end ES/6000s, said to have a base price of \$7,000, San Jose, California-based Tatung Science & Technology Inc has come out with a colour micro Compstation at just \$4,290 for a diskless system with a 15" colour monitor with 20MHz CPU delivering 12.5 MIPS. With 207Mb hard disk drive, 8Mb of memory and the screen, it's \$5,000. The 25MHz version of the same configuration is \$6,000. The power may be modest, but vendors need to have rock-bottom pricing on low-end models if they hope to win large one-per-desk contracts that involve a couple of dozen big, profitable servers and scores of stations. Memory goes to 64Mb, disk to 680Mb and the monitor supports resolutions of 1,152 by 900 to 1,280 by 1,024.

APOLLO'S NLS TIPPED FOR OSF'S DME WINNERS

Among the technologies to be chosen for the Open Software Foundation's Distributed Management Environment, due to be revealed on September 17th, is likely to be the Apollo Computer Network License System introduced way back in 1987 (UX No 152). The product has suffered a name change since those days, and is now known as HP Net License. The product regulates the number of concurrent licensed users that can be logged onto a network at any one time.

NEW MICROSOFT C COMPILER SOLVES MEMORY MANAGEMENT PROBLEMS

Microsoft Corp has released its latest C and C++ compiler for the PC market. C 7.0, due for shipment by the end of the year, allows for the production of both 16-bit and 32-bit code, getting round some of the memory management problems associated with programming under Windows. By using an intermediate, compressed "P-code", the compiler is said to reduce the size of applications by up to 60%. The compiler also allows for the more efficient calling of functions through inlining techniques. The move is seen as a stepping-stone for Microsoft's 32-bit Windows and NT operating system.

PERFORMANCE HAS LOW-END HIGHLY INTEGRATED R3000A

Sunnyvale, California-based Performance Semiconductor Corp has rushed out another highly integrated version of the MIPS Computer Systems Inc R3000A RISC, the 40MHz PIPER Properly Integrated Performance Easy Rider - whatever that may mean. The PIPER is intended to be used as the CPU in low-end workstations and for embedded control. The part integrates the PR3000A CPU and memory manager, the PR3010A floating point accelerator and a user-programmable cache that can be organised with 4Kb for instructions, 4Kb for data or 8Kb instructions and 2Kb data. It operates from a single clock and on chip read-write buffers and bus interface control circuitry eliminates high frequency signals on the external leads. Embedded applications envisaged for the part with cache configures 8Kb-2Kb include graphics control, laser printers, and type setting. When used in the 4Kb-4Kb configuration, it is targeted at low cost desktop workstations. The part will initially be offered at 35MHz, 40MHz and 45MHz, 40MHz at \$143 for 10,000-up for November delivery. It should deliver about 21 MIPS sustained integer performance and 4 MFLOPS double precision Linpack, equivalent to an R3000A, R3010A, 64Kb data and 64Kb instruction cache at 25MHz - at about a third the cost, 10% of the board area. Integrating 1m transistors, it will be fabricated in 0.6 micron CMOS.

COMPETITORS DOUBT OSF/1 WILL BE ANY

MORE SUCCESSFUL THAN OTHER IBM UNIXes

IBM Corp is expected to launch a version of OSF/1 for its ES/9000s next week, but it remains to be seen whether there will prove to be greater demand for OSF/1 than there has been for AIX/370. IBM has until now been ostentatiously unwilling to abandon its proprietary operating system in favour of Unix, but now the company has woken up to the fact that it will have to go Unix to remain competitive - Amdahl Corp's UTS Unix system is said to be causing IBM particular concern, *Computerwoche* suggests. Hitachi Ltd is also diligently preparing its own mainframe implementation of OSF/1. Amdahl's UTS specialist Tom Litterdauer is eager to play down the perceived threat presented by IBM's OSF/1 system, saying that "this is the third or fourth Unix that IBM has developed and let silently fall under the table". In Amdahl's opinion, IBM is getting nervous as more and more substantial customers - such as authorities and telephone companies - are dropping MVS in favour of Unix. "IBM wants to be able to conjure up suddenly a profound knowledge of Unix", Litterdauer told the West German weekly, but there is still a culture barrier between the systems - IBM is trying to introduce as many Unix capabilities as possible to MVS, and will maybe also develop a Posix-compliant version, but it won't give up the proprietary base to its system". In view of the fact that the mainframe share of the computer market is shrinking, it remains to be seen whether there is a real future for mainframe-Unix. According to Dataquest figures, mainframes today represent 29% of the total computer market, down from 34% in 1986. Even in absolute terms, the mainframe market share is decreasing. The Californian Computer Intelligence counted only 25,391 IBM mainframe and 1,495 plug-compatible installations in the US in 1990, down slightly from 25,636 IBMs and 1,633 compatibles in the previous year - the first time, according to Computer Intelligence, numbers of mainframe installations have fallen.

UNDISCLOSED PRODUCT CONFLICT PUTS ORACLE-NIPPON STEEL IN JEOPARDY

Although Oracle Systems Corp's operations look fine at the trading level, the balance sheet is still a cause for concern, and the Redwood Shores, California company has hit snags on the proposed deal that would inject \$200m into the company in return for Nippon Steel Co taking a 49% stake in its Japanese operations. That deal was to have closed on August 30, but while both sides have successfully negotiated definitive documentation and got the necessary government approvals, negotiations relating to "current or potential overlapping product directions" have not yet been completed. At present, Nippon Steel's principal computer interests are the Librex portable computers and Japanese representation of Concurrent Computer Corp, so the snag is presumably either an undisclosed plan by Nippon Steel to bail out Concurrent by taking control, or a deal with another hardware maker that would compromise Oracle's much vaunted hardware-independence. Oracle has obtained a 30-day extension from its current banks on its \$100m primary credit facilities but is having to negotiate an alternate \$100m credit line in case the Steel deal has still not been completed by the end of this month.

CONCURRENT FINALLY SHIPS THREE-68040 REAL-TIME 7000 LINE

Tinton Falls, New Jersey-based Concurrent Computer Corp is finally shipping its Series 7000 family of single and multiprocessor real-time computer systems based on the Motorola 68040 and Concurrent's RTU version of Unix. The Series 7000 is claimed to be the only 6U VMEbus standard form factor product out supporting three tightly coupled multiprocessing 68040 CPUs. It runs Release 6.0 of RTU, which adds frequency-based scheduler and supports disk mirroring, dual porting and disk striping, and fast asynchronous traps. No prices were given.

**FRANK DODGE WILL MAJOR ON OSF/1 UNIX -
WITH BRITISH-BUILT CLIENT-SERVER APPLICATIONS**

Frank Dodge is finally staging a comeback after the high drama of his exit from Dun & Bradstreet Corp 18 months ago. Explaining that his acrimonious departure from Dun & Bradstreet - following the merger of McCormack & Dodge with Management Science America - was not the best time of his life, he is now glad he had the opportunity to spend a year reading and thinking about what he wanted to do. What he wants to do now is run a software company devoted to selling accountancy packages specially designed for the Unix client-server market. The new company, called the Dodge Group Inc, is privately funded by Dodge and will be headquartered in Waltham, Massachusetts, while core development is being undertaken in the UK in Kingston, Surrey.

He is the first to admit that the application area - accountancy - is scarcely a new one for him, although the mid-range market is. However, as he decided in 1987 that the mainframe market was dying, it is a fairly predictable move. Of course he could have focussed on the AS/400 market, and decided against it partly because a lot of software houses are already there, but mainly because "the AS/400 is old dead-end technology". He is convinced that the future belongs to Unix and has chosen IBM's RS/6000 as the first environment for the Dodge software. He is not worried about the marketing muddle that IBM is creating with its mid-range, saying that the industry has grabbed on to the RS/6000 as a commercial machine and there is nothing IBM can do about it. Over time there will be other versions of the software for environments such as Ultrix but Dodge thinks it likely that versions will stick with the Open Software Foundation flavours because "supporting too many platforms becomes a developer's nightmare". Dodge co-founded McCormack & Dodge in 1969 when he was targeting the mainframe market and believes that this second time around with the Dodge Group, growth will be much quicker. This is because the concept of packaged software was alien to in-house data processing managers then, while it is far from being an alien concept today. Furthermore, he thinks that every company using a mainframe will be using client-server technology within 10 years. He concedes that there is a huge residual conservatism in the computing user base because of the prevalence of Cobol programmers but believes that packaged software like that offered by the Dodge Group will ease the problem because Cobol programmers can maintain their programs as they are slowly wound down. Meanwhile they can gradually get involved with the new technology by supporting the Unix packages. Originally Dodge was looking to acquire a company but could not find anything that fitted the bill. In the UK he met John Linwood and Alan Hambrook who had been working on an accountancy package since July 1990. At first Dodge thought he would just take distribution rights to the product but then all three came to a mutual agreement to join up and form the Dodge Group.

C with Ingres

Hambrook and Linwood are the developers behind the Mega software product Miracle, which sprang to fame as being a contributing factor in the downfall of the Headland Group Plc after Mega was acquired by Headland. Hambrook maintains that all the problems began after the company was taken over, which drew a wry, but - unfortunately - unrepeatably remark from Dodge. Anyway, using a VAXstation, the two developers started developing client-server code and eventually formed their own company, Omega Software Ltd in 1990 to refine their ideas. Last July they started grinding code and testing modules. The applications are being written in C with the Ingres database, although interfaces to other databases will emerge. They use Windows 3.0 and Motif graphical user interfaces and are designed to be portable so that new interfaces can be added without changing much of the code. Dodge judges the applications to be client-server because the application code is separated into some for the database server, some for the client and some for operation on both the server and the client. Hambrook says that the accountancy sector lends itself well to the client-server model as it has a regimented approach to working and requires segmented chunks - other sectors with less regulated working practices would not, he feels, be nearly as easy to design for. The high volume debit/credit transactions are being kept on the back end database, which is typically centralised for accountancy transactions, while data can be manipulated and presented graphically on the front end. The product is planned for release at the end of 1992 when some revolutionary pricing structures will also be introduced as the old software pricing model no longer fits the brave new world of client-server computing.

**PURSUING OBJECTS, SYMBOLICS GmbH
BECOMES SYMBOLICS SYSTEMHAUS IN BUYOUT**

Eschborn, Germany-based Symbolics GmbH is flying the parental nest in a management buy-out from the Burlington, Massachusetts artificial intelligence systems specialist, Symbolics Inc. Last December, the German distribution company expressed ambitions to become a system house, developing custom object-oriented applications, saying then that it had intentions for local ownership. Whereas the intention had been that Ingo Kriescher, head of the company, would take a 51% stake, with Symbolics Inc retaining 20% and the balance split between various financial institutions, Kriescher has in fact taken a whopping 80.2%, presumably leaving the balance with the parent. The German company also retains the rights to its name, expanding it though to Symbolics Systemhaus GmbH to reflect its new status. Under Kriescher, the former Symbolics GmbH has become a \$7m-a-year service company - in 1987 it was a pure \$11m-a-year hardware supplier.

**SYMANTEC's PETER NORTON DISMISSES IBM-
APPLE ALLIANCE, BEMOANS SPREAD OF UNIX**

Peter Norton, founder of Peter Norton Computing, now subsumed into Symantec Corp, sounded off about current industry developments when he delivered the keynote address at the FedMicro '91 conference in Washington DC a couple of weeks ago. Norton is sceptical that the IBM-Apple Computer alliance will work, and he doesn't care for Unix at all. According to *Microbytes Daily*, he described the IBM-Apple alliance as "like the lion and the lamb in the Mideast - they were born to do battle with each other," adding that "we will never have peace because [making war] is their hobby. [The alliance] is a brief marriage of convenience. It smells like a desperation move." As for Unix, he was uncompromising. "I don't like it," he said. "But it's here, especially in government, and being used. It's here to stay, for better or worse - I think worse. It has an important role to play. It's heavily mandated in Europe. [In this country] it's more used in engineering departments and government offices. We don't need a proliferation of operating systems. The good part is that it offers compatibility across hardware. That's an illusion but better than nothing. It's a necessary evil, like OS/2." Norton was charitable about Microsoft including features in MS-DOS 5.0 that were previously the province of his Norton Utilities suite - he said of the new MS-DOS release, "it's wonderful. It obsoleted some of my software. And that's what it's supposed to do. I used to be afraid Microsoft would take away my business but they have more important stuff to do than utilities. Now they've taken away Unerase and Unformat. That frees us to do other things - that's the way it's supposed to work," he said.

ICL, INGRES HAVE DATABASE ENGINE FOR UNIX NETWORKS

ICL plc and Ingres Ltd have worked together to come up with the Ingres Search Accelerator which they claim offers the same data search and text retrieval functionality as a Teradata DBC/1012 - a stand-alone database engine aimed at the DB2 market - but for the Unix user pursuing client-server computing and distributed processing. The Ingres Search Accelerator combines ICL's Content Addressable File Search - CAFS - technology with the Ingres Query Optimiser. Using the Search Accelerator, data searches are run using software instructions hard-coded onto chips rather than running a software process in a CPU, so that data can be delivered at the transfer rate of the disk freeing the CPU for other work. Graham Taylor, ICL's business software manager, says that the chips are on a board that plugs into a VMEbus and can then be plugged into any vendor's Unix box. The Accelerator software is owned by ICL but is written for System V.4, while Ingres provided the Query Optimiser that acts as a smart disc interface seeking the fastest way to handle a database request. The Accelerator is reported to handle up to 4Gb of data and each board is said to handle 4 simultaneous queries with room on most Unix boxes for 10 boards. Initially available on ICL's DRS 3000 and DRS 6000 machines, versions for other databases are under development with Informix and Oracle, courtesy of ICL.

INFORMIX TAKES ON FOURGEN'S PROPRIETARY LANGUAGE SOFTWARE ENGINEERING TOOLS

As expected (UX No 347), Informix Software Inc has signed up to license and market software engineering tools developed by Edmonds, Washington-based FourGen Software Inc. FourGen was established in 1983 and claims to be the largest supplier of applications generator-based accountancy packages in the world. Since 1987 FourGen has been working with Informix and re-engineered its applications using Informix 4GL. To do this they had to create product tools, code generators, menus and report writers. With these tools in hand the company was in the position of offering standardised code with their accounting packages that value-added resellers could modify. This is particularly significant in a market where resellers are helping data processing sites move from proprietary hardware to Unix. After this breakthrough, FourGen, a privately-held company, says it has grown quickly, doubling its revenues for the past four years. It now employs 80 people. Originally, the lower CASE tools - Screen, Form Painter, Code Generator and User Control Library - evolved as an adjunct to the accountancy products but now they are very much a product set in their own right, contributing 40% to revenues. FourGen products run on any Informix class of machine, from Unix on the 80386 to the big Sequent Computer Systems Inc and Pyramid Technology Corp machines. The majority of units sold are currently on 80486 boxes but new sales are moving up dramatically to the higher end, as, of course, are those of Informix. For example, FourGen has recently established a marketing relationship with Hewlett-Packard Co for HP to promote FourGen software with the HP 9000 Series 800 computer. The tools are capable of supporting from one to 25 developers. Vice-president of marketing for the company, Gordon Schaeffer, wanted to stress that FourGen offers lower CASE form generators and does not provide upper CASE bit-mapped methodologies. He sees the FourGen product set as being complementary to Informix work being done with Systematica to produce a concept to code development tool for UK government-approved Structured Systems Analysis and Design Method, known as SSADM.

IBM TO BUILD RS/6000-BASED MULTIPROTOCOL ROUTER

IBM Corp has announced details of its first multiprotocol router in an attempt to meet the challenge of companies such as Wellfleet Communications Inc and Cisco Systems Inc. The new series of routers will be based on the RISC-based RS/6000 and should begin shipping early next year. The announcement has been met with disappointment by some analysts: while IBM plans to support a wide range of network protocols and most of its SNA portfolio, PU4 support is conspicuous by its absence. Physical Unit 4 defines the connection type of a front end communications process or such as the IBM 3745. The move from dumb terminals to local network-attached personal computers has simplified the front-end processor's task and some people have argued that a router with PU4 emulation could replace front-ends. They have gone further and said that IBM is attempting to protect its lucrative 3745 business by deliberately leaving PU4 out of its routers. The company counters that it makes no sense to move a large and complex subsystem onto a network router - the company's strategic route is for peer-to-peer networking based on PU2.1. Moreover PU4 is simply too complex to cram into a router. This is a view echoed by Anura Garuge - lead consultant with Bolt, Beranek & Newman Inc, who describes the idea as "overkill". Presumably this is not a view shared by Cisco Systems which has announced plans to do precisely this. IBM's new box is likely to support Novell Inc's IPX and SPX protocols in its first release, plus NetBIOS, and TCP/IP. Subsequently, the company hopes to incorporate DECnet, XNS and AppleTalk protocols. The company did not say how it plans to route SNA traffic, but encapsulation within the IP protocol seems a likely option.

SPECIALIST COMPUTER HOLDINGS PICKS UP TWO IBM RS/6000 RESELLERS

Specialist Computer Holdings Ltd, the Birmingham-based computer distribution, training and services group has recently made two acquisitions in the IBM Corp RS/6000 arena - Business Partners Ltd, based in the Midlands, and Applied Group Ltd, based in Warrington, Cheshire, and Leeds. RS/6000 value-added reseller Business Partners had been placed in receivership when Specialist snapped it up for just under £100,000 two months ago, and in so doing the company saved 40 jobs. The Applied Group, which turned over £2.5m last year and had around 50 staff, was picked up for £500,000, whereupon Specialist whittled the headcount down to 40. The latter, also an IBM RS/6000 dealer, is a personal computer-based training company too, which over the last decade has built up a reasonable client base in the north of the UK. Specialist says it is probable that training side of the business will be integrated with its Specialist Computer Education subsidiary launched in February, following the acquisition of Asystel UK Ltd's Wordability company last year. The newly-acquired RS/6000 reselling activities will be integrated with Specialist's existing multi-user computing group, based in Leatherhead, Surrey, extending nationally the business' distribution outlets for Tetra, Unity and Sun Microsystems Inc-based accounting systems. Specialist's purpose is also to move into the integration of personal computers into client-server and open systems environments.

ULTIMATE BRINGS ULTIMATE PLUS FOR RS/6000 DOWN TO THE WIRE

Ultimate Corp, East Hanover, New Jersey reports that early results from beta testing of an IBM Corp RS/6000 implementation of its Ultimate Plus Business Operating Environment version of the Pick system have been "outstanding", paving the way for general availability to be announced shortly. At the same time it has announced general availability on Hewlett-Packard Co's HP 9000 Series 800 Unix line. Ultimate Plus provides access to Unix as well as Pick applications; the base package supports eight users, 16 printer ports and includes UltiKit, UltiLink, UltiMation, UltiPlot, UltiWord and UltiWriter utilities; the UltiCalc spreadsheet is available at an additional charge. The base package costs \$4,000, and it is then \$415 for each additional licence.

SEQUENT TEAMS UP WITH INFORMIX TO PUT SOFTWARE ENGINEERING TOOLS ONTO SYMMETRY 2000

Sequent Computer Systems Inc has announced joint efforts with Informix Software Inc and Sybase Inc's wholly-owned subsidiary, SQL Solutions, to enhance the application development environment of its Symmetry 2000 computers. This is the first in a series of steps Sequent proposes to take to evolve its software engineering strategy for high-end, relational database applications. Through the Informix alliance, Sequent will offer a graphics-based tool integration environment incorporating Informix-OpenCase/ToolBus, which is based on Hewlett-Packard Co's Softbench software. The new Sequent product will also integrate tools from a number of third-party developers, the first being from SQL Solutions. The completed product, which will enable users to develop and deploy large database applications on a single system, says Sequent, should be attractive to organisations currently using workstations for development and larger systems for testing and production. The Informix-to-Symmetry 2000 implementation will result in an object-oriented integration framework providing a common graphic interface to application development tools from multiple vendors. It will also include a programming mechanism that enables the customisation of the tool environment. The product will take advantage of Sequent's symmetric multiprocessing architecture, notably X Window and Motif graphical user interface support, so that users will be able to not only build powerful X-based applications, but also develop them on a variety of graphics terminals. The SQL Solutions products to be incorporated in the Sequent environment include fourth generation languages, cross-database debuggers and report writers.

ALTOS UPGRADES 4-YEAR OLD SYSTEM 1000 TO CLASSIC STATUS

Altos Computer Systems - now part of the Acer Group - has boosted its best selling System 1000 low-end Unix boxes with faster processors and upgraded memory options. The Intel-based Series 1000 was first launched four years ago, and since then Altos UK has sold 5,000 of them. The three latest iterations - dubbed Classic - are the 386/33, 486SX/20 and 486DX/25, and are intended for workgroups of up to 40 users. UK prices start at £8,000 for a 386/33 with 525Mb tape, 4Mb RAM, 8 ports and a 200Mb drive. According to Altos marketing director John Cummins, the company has not suffered from an overlap between Acer and Altos product lines. Acer has a PC product range from notebooks to servers, which it sells to VARs as system components. Altos is seen as the Unix specialists within the Acer Group and sells fully configured systems. Altos prices are benefiting from economies of scale, said Cummins. By the end of the year, he expects to be able to offer SCO Unix for the machines as an option, instead of Altos' own Unix flavour. SCO is currently working on the port. Meanwhile, Altos is planning a top-end multi-processor data server system, with four, 50MHz 486 processors, using technology developed by its parent.

AMD FILES INTEL ANTI-TRUST SUIT, INTEL TAUNTS AMD WITH POP SLUR

By seeking a \$2,000m anti-trust suit, Advanced Micro Devices is believed to be making a theatrical gesture for the benefit of Intel Corp chip users sheepish about ditching Intel as their supplier for 80386 chips. AMD is attempting to legally test charges frequently made informally against Intel that it abuses its monopoly of the microprocessor that dominates the personal computer market by sharing out scarce chips improperly - that is, by tying the sale of the hugely popular 80386 to sales of older 80286 chips. Intel is also charged with unfairly crowding competitors out of the market. Intel chief Andy Grove struck out against the suit, ever the sophist, he called AMD "the Milli Vanilli of semiconductors". Continuing, he said "their last original idea was to copy Intel. Since they can't win in the marketplace, they try to defeat us in the courts and press."

ALPHA UNREPENTANT ABOUT PROPRIETARY AMOS LINE

Despite its renewed push into Open Systems last month with the launch of new top-end Risc-based systems OEMed from Motorola Computer Systems (UX No 346), Alpha Microsystems is unrepentant about its continuing proprietary stance. "We're unusual in that we're a small company with proprietary products - 85% of our business is proprietary", says vice president of European operations Mike Osler. And, far from seeing that business decline with the launch of the new boxes, Osler says the proprietary business, using the Amos operating system, will grow even further. The company has built up a range of vertical market software for Amos, and claims to be second only to Unix in the number of those packages available, with Pick trailing in third. It provides tools for converting those written in Alpha Basic over to Unix, a process he says takes on average three weeks, and once users see that a path over to Unix is possible, they are happy and stay with Amos. "Amos beats Unix on price by 25% every time", says Ostler. The top-end machines are necessary to fill out the range, but are unlikely to be big sellers, he admits. A top-end Amos machine should emerge over the next six months, but won't use the 88000 - converting the 68000-based Amos software to run on the Risc chip is "too big a job", says Ostler. Alpha sells a range of Intel-based systems running MS-DOS and Unix. Meantime, Alpha has introduced Pick-64, its own high-performance implementation of Pick for Intel-based systems, said to be up to three times faster than current PC Pick. It will run up to 64 concurrent users, up from the previous limit of 33 users. And Alpha also has a "plug and play" series of 80386SX-based dedicated Novell workstations, the Nodestar II line.

CHARLES RIVER, KAWASAKI TECHNOLOGY JOINT VENTURE

Charles River Data Systems Inc of Framingham, Massachusetts and Tokyo's Kawasaki Steel Corp have got together in a technology development alliance to design and make new computer systems specifically targeted at factory control and automation, database processing and commercial applications. Kawasaki Steel will provide development funding and the research and development activities will take place at both Charles River and Kawasaki Steel, but the final product manufacturing will take place at Charles River's facilities in Framingham. The products will combine Charles River's real-time and database servers products with System V.4 and Intel chips - planned shipments early 1992.

US MAINFRAME USERS ARE CAUTIOUSLY EMBRACING UNIX, DISTRIBUTED COMPUTING, DATAPRO FINDS

Datapro Information Service Group conducted a survey in June among senior data processing managers and management information system directors at a number of mainframe sites throughout the US. The company says that over 800 respondents provided information on the manufacturers and models of the mainframe computers installed at their locations, and they were asked to rate their mainframe on a variety of features. 90% of the managers say that they do not plan to change their mainframe vendors within the next 12 months, but they do intend to enhance their systems within the same time frame. Over 41% say that hardware expansion is on the agenda, while 40% highlight expansion of their communications facilities. Only 28% are planning to upgrade to a larger system, and less than one in four intend to implement some form of optical storage. Even less, 17%, plan to implement Unix systems, and the same proportion emphasises document imaging. Other results to emerge from Datapro's Mainframe User Ratings Survey are that 98% of the operating systems in use are proprietary, and 1% are Unix-based. The most important selection and purchase criteria are price performance, hardware architecture, service and support and upgrade capability. The managers say that 62% of applications are developed internally, 20% are packaged programs from an independent vendor, 12% are packaged programs from the manufacturer and 6% are developed by contract programmers. While 12% of respondents have a distributed computing environment, and 2% claim a client-server architecture, DataPro estimates that these figures will grow to 18% and 10% respectively. 43% are using IBM mainframes with a third using Unisys equipment and Bull claiming 12%. NCR is the next favourite with 11%, but only 8% and 5% respectively use Amdahl and Hitachi Data Systems equipment. Two per cent use Digital Equipment Corp systems while Tandem and Control Data are even-steven - both companies have one per cent of users.

UK SHOW PREVIEW: SUN USER '91

NEW FRONT-END DATABASE TOOL FOR TEKBASE FROM LEADING TECHNOLOGY

London-based Leading Technology Products is to reveal a new software tool that provides a graphical front-end to its TekBase database at the Sun User Show in Birmingham this week. The product, called Kingfisher, provides a "highly visual" user interface to the database, and closely integrates database and data analysis capabilities, according to company spokesman Michael Cole. Aimed, like Tekbase, at engineers and scientists, Kingfisher obviates the need for users to have a database background, and provides icon-style tools for retrieving data, setting relational conditions and applying mathematical functions to the data. On screen, the database structure is shown through tables and columns, rather like a spreadsheet, so that users can point at columns rather than typing in a name. Kingfisher uses a client/server architecture and works under X-Windows and OSF/Motif, so theoretically at least it could also be used to front-end other databases - although Cole warns that because Tekbase is focused on scientific and engineering users, other databases might be found deficient in some of the functionality. Data can also be displayed graphically using the data analysis tools in a variety of formats, from 2D charts to polar plots and waterfall displays. Also at the show, Leading Technology will introduce a new scripting language called TSL, which will allow Motif or Open Look applications to be built "very simply", says Cole. Not intended to be "a heavyweight 4GL," TSL is instead "a lightweight tool for building applications within an engineering environment." A complete package, including Tekbase, costs around £10,000 for 4 users. In the US, Tekbase products are now available through DataViews developer VI Corp, currently showing the new products under wraps to clients such as Boeing and NASA. Originally only on HP hardware, Tekbase is now available on Sun, IBM, DEC and Silicon Graphics platforms.

QUADRATE EXPANDS BOUNDARIES OF X-WINDOWS

Quadrat - exhibiting at the Show on stand 150 - is a trading division of Oilfield Systems Ltd, the geological workstation specialists. Quadrat offers an enhanced version of the X Server which allows a workstation user to take advantage of several different screens, all treated as a single virtual screen. A user in a window is able to move straight across the window borders onto the next screen. It is a facility useful for CAD/CAM users, who might, for instance, need to zoom in for detailed changes but need to view the wider picture at the same time. It is fully X-compatible and will work with any X application. It also takes advantage of SunUs GX graphics accelerator. Quadrat is based in Winchester, Hampshire.

CRAB TECHNOLOGY WORKS ON X-TERMINAL WORKSTATION HYBRID

A new company, Crab Advanced Technology Ltd of Reading, Berkshire, was set up in April to develop a new type of product that is a cross between a workstation and an X-terminal, according to company spokesman Mark Goulding. That product, which Goulding hints "builds on the cross-strengths of workstations, communications and functional processing", will not be shown at this show, but will be launched on pre-customer release by the end of this year or early next. In the meantime, Crab will be showing Samsung X-terminals, using the AMD 290000 Risc, on its stand. Crab is funded from Italy, and is currently setting up sales channels around Europe.

Sun User '91 starts on Tuesday 10th of September and runs for three days at Birmingham's National Exhibition Centre. It opens at 10am and closes at 5pm (4.30 on the last day). The concurrent conference is organised by the Sun User Group, which can be contacted at Owles Hall, Buntingford, Hertfordshire SG9 9PL. Tel: 0763 71894.

STAR PREPARES FOR EUROPEAN LAUNCH

Stirling, Virginia-based Star Technologies is using the Sun show to introduce its 910/VP Sparc computer server into Europe. The machines, launched as long ago as last July in the US (UX No 290), have already been shipped to MIT's Lincoln Laboratories and to the University of Western Australia. For its European move, Star has set up a distributor in France, and hired Tom Hillman as managing director of international operations. Hillman was previously head of worldwide distribution for Solbourne Computer Inc. The Star machine can reportedly achieve a performance of up to 160 MFLOPS peak. Star has been carrying out joint marketing of its products with Sun (UX No 325).

SHOW SHORTS

Unipalm Ltd is to show NetWorker 2 from Legato Systems at the show, the features of which include full network-wide backup facilities, automatic tape switching, live file system backup and disaster recovery system: Unipalm also plans to show a new release of FTP Software's PC/TCP (version 2.05), supporting Windows 3 through the VxD module, and may have Cayman Systems' XGator X-Windows client for the Apple Macintosh on display.

Force Computers will launch TargetStation, a Sparc VME system suitable for industrial environments. Force also has new Sparc single-board VME computers.

Inphase Software Ltd is launching an Open Look version of its executive information system: Motif and Windows versions will also be shown.

Oce Graphics has a new ScreenRender software product designed for Sun workstations linked to G5200 series colour printers.

The Aztec LT-100 laptop is on show at the Dataman stand: it weighs 14 pounds and has rechargeable batteries good for two hours continuous use. It uses a 20MHz Sparc chip, and comes with 8Mb memory (extendable to 48Mb), floppy drive and 128Mb hard disk. Prices from £6,760 + VAT.

4 Front Applications Ltd, of Hyde in Cheshire, is launching a new document publishing system for Sun workstations: Promisys uses graphical techniques and its own relational database to manage the preparation of such documents as proposals, product support manuals, mailshots and quotations.

Prefer to rent rather than buy? TGL Rentals of Slough in Berkshire claims to be the leading Sun authorised rental and leasing company in the UK, supplying Sun Sparc systems (including the new 4/50 IPX) and peripherals, with options to upgrade, purchase or convert to lease at any time.

TANDON ENTERS SPARC MARKET THROUGH SOLBOURNE DEAL

Tandon Computer, a key Sparc OEM that is one of the few with experience of volume shipments, is using Europe as the test-bed for its venture into RISC-based workstations. Tandon struck an OEM deal with Solbourne Computer back in March (UX No 324), and has now begun shipments of re-badged low-end Solbourne machines in the UK, Germany and France. There are two systems, the 13.3 SPECmark SPC 5000 and the 18.3 SPECmark SPC 5100. Tandon expects around 50 of its dealers will be capable of selling and supporting the workstations, and hopes to sell them both to the small CAD/CAM user and to large corporates looking for Unix-based machines. US and Far East launches are likely to take place next year. The company is also considering the portable S3000 that Solbourne originally introduced in Japan only. At the same time, Tandon launched its new MCS range of modular PCs in the UK - processor, main memory, and disk modules can all be added by the user, allowing for instant re-configurations. And Tandon has switched sides in the Unix marketplace by announcing an agreement with Interactive Systems Corp to incorporate Interactive's Unix System V.3.2 - and later V.4 - software into its product lines. Tandon will also bundle Interactive's Architech Series modular suite of software components, with its high-end machines, offer VP/ix MS-DOS under Unix, Norton Utilities for System V and NetWare, and the DataPac II is supported. Tandon previously offered SCO Unix and Xenix on its PCs.

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The proposed purchase of Interactive Systems Corp by SunSoft (see front page) might still not provide a sufficient boost to SunSoft's distribution operation, and a distribution deal with another software house, possibly Lotus, could be in the offing: meanwhile SunSoft is also expected to negotiate marketing deals with Kodak for the CD-Rom and imaging technology that Kodak evidently wants to keep back from the Interactive sale.

Strand Group Ltd of Markyate, Hertfordshire, has a multi-user version of its Strand88 parallel programming language, and a link to Open Look, Sun Microsystems Inc's portable X graphical user interface.

Lionel Singer Corp's EaseBackup archiving software for Unix systems from Australia is now available from Open Systems Marketing Ltd, Windsor, Berkshire.

Swedish communications giant, LM Ericsson, has adopted a company-wide information technology policy that requires all of its subsidiaries and operating companies to adopt platforms that conform to X/Open's XPG3 specifications in future.

Montreal, Quebec-based Visual Edge Software Ltd, has released version 2.0 of its UIM/X graphical user interface development tool for OSF/Motif: it's available on most Unix platforms, no prices given.

Motorola Inc's 88open RISC supporters club says that Thunderstone Expansion Programs International Inc's ITS Writer and Metamorph; SPSS Inc's Categories, Statistical Data Analysis Software, Table and Trends; Softool Corp's CCC/Manager; Cygnus Support's GNU C and GNU C++; and Decisionex Inc's Real>Returns software packages are all now certified to run on 88000-based systems.

Inphase Software Ltd, Sandhurst, Surrey, is releasing its Inphase/EIS executive information system running under Open Look at this week's Sun User '91 show at Birmingham's National Exhibition Centre in the UK.

The University of Western Australia, Nedlands, and the Massachusetts Institute of Technology's Lincoln Laboratory, Lexington, Massachusetts, have installed Star 910/VP high-end Sparc servers from Star Technologies Inc, Sterling, Virginia.

The Netherlands social security service's DETAM division, Utrecht, is building a nationwide computerised enquiry system to deal with sickness, disablement and unemployment benefit enquiries using London-based FCMC plc's Staffware workflow automation software running on Bull DPX/2 Unix systems: FCMC's Dutch value-added reseller, Quis Software bv, clinched the deal.

Uniras Inc, Dallas, Texas, has released version 2.1 of its Unigraph+2000 graphical data representation system: aimed at scientists, engineers and managers, it includes support for multiple viewports, two-dimensional vector charts and the ability to mix two and three-dimensional images on screen and then generate presentation-quality hardcopy - prices go from \$4,000 on a workstation to \$36,400 for a supercomputer version.

In the UK, **Informix Software** has won a £240,000 order from the Department of Social Security to supply its database technology on one component of the Department's Single Terminal Access Project, STAP: Informix will be used on the national personnel system at 159 benefit offices around the country running on Siemens WX200 SCO Unix boxes and ICL DRS6000 Sparcs.

Having captured IBM Corp's strategic team of linguistics researchers, Microsoft Corp has now plunged into Carnegie Mellon University in Pittsburgh and plucked out its professor of computer science, Richard Rashid, who directed the Mach operating system kernel project, to be its first director of research. It also tapped Dr Gordon Bell to chair its new Technical Advisory Board.

Hewlett-Packard has released a new version of its RTAP real-time applications platform toolkit: RTAP/Plus 5.1 runs under HP/UX, X-Windows and OSF/Motif and communicates via OSI and TCP/IP. At the core of the system are six components: database, scan system, calculation engine, event manager, process scheduler and time keeper, all accessed by an applications programming interface for easy integration with existing applications.

The latest edition of Ashton-Tate's dBase 1V for Sun supports the Sun Open Windows environment, including Open Look and Deskset: and Ashton-Tate has announced its first OEM agreement for the Sun product with Sun reseller GNP Computers of Pasadena.

British Telecommunications Plc and **Digital Equipment Corp** have agreed to provide direct internetworking between their respective network management systems, and to align their development programmes: BT's Concert system, not yet commercially available, will interoperate with DEC's DECmcc network management system on a peer-to-peer basis, with the interface between based on Network Management Forum and OSI specifications. Prototype demonstrations at Telecom '91 in Geneva next month, with commercial release in a year's time.

IBM's entry-level models of the RS/6000, expected in October, are likely to be conservatively priced compared with the cheapest offerings from Sun Microsystems Inc and Hewlett-Packard Co; according to the Wall Street Journal, IBM reckons it is on target to become the market leader in Unix workstations in 1993 - Sun currently leads with a 32% market share.

IBM's big marketing push for OS/2 2.0 appears to be getting off to a poor start if stories that Computerworld is hearing are true: the paper reports that IBM is negotiating OEM licensing deals with 30 personal computer manufacturers including Compaq Computer Corp, AST Research Inc, Ing C Olivetti and Dell Computer Corp, but many are refusing to sign until the contract covers OS/2 2.0 and versions that follow it; this is proving a stalling point because, it is believed, the pact with Apple may restrict IBM from licensing the future object-oriented environment known as Pink that the two are developing.

Judging by the photograph of Intel Corp chief executive Andy Grove in the August 26 issue of Fortune magazine, the latest piece of one-upmanship is to appear without a jacket and in a pocketless shirt so that you have to wear your identification badge on your belt - so that lesser mortals that don't know who you are must make an obsequious bow to you if they want to find out.

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Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

RBN
10 SEP. 1991

London, September 16-20 1991

Number 351

OSF's DISTRIBUTED MANAGEMENT ENVIRONMENT WILL BE

"COMPATIBLE OR SYNONYMOUS" WITH OBJECT REQUEST BROKER

When the Open Software Foundation finally takes the wrapping off its plans for a Distributed Management Environment this Tuesday, it is expected to announce at the same time that the technology, by the time it begins to find its way into commercial products of any sort - not likely for at least twelve months - will be "compatible or synonymous" with the Object Management Group's object-oriented Object Request Broker mechanism. DME was conceived to establish a vendor-neutral framework for the development of applications that manage distributed computer systems and networks. ORB, meanwhile, provides the mechanisms via which objects transparently make and receive requests and responses. Its significance is that it provides the interoperability between applications on different machines in heterogeneous, distributed environments: it will seamlessly interconnect multiple objects. A technical meeting of OMG's task force last Wednesday voted unanimously to adopt the composite technology submission from Sun Microsystems Inc, Hewlett-Packard, NCR Corp, Object Design Inc, DEC and Hyperdesk, that will make up ORB (UX No 337). OMG's technical committee is now voting on that decision - effectively a rubber-stamping exercise - the results of which will be known within a month. While not wanting to pre-announce OSF's DME intentions - or steal its jealously-guarded thunder - OMG president, Chris Stone, who has also acted as a consultant to OSF on this request for technology, told Unigram that the twelve months or so between the DME announcement and first expected products based upon it would give OSF a chance to work on making its technology compatible with ORB. Although there has been much speculation that DME and ORB may end up sharing the same technology - HP for one has submitted similar technology and has been a prime mover in both efforts - it is understood that OSF and OMG have agreed, at board level, not to announce "overlapping technology," or use the same code. Nevertheless, DME is going to be "very object-oriented," Stone says. Meanwhile, Hewlett-Packard claims it doesn't know yet whether its DME submission to OSF has won or not, but that isn't stopping it from flying in cadres of executives under the tutelage of Networked Systems Group vice president Wim Roelandts for a post-announcement get-together in Boston on Tuesday, September 17th with press and analysts. It'll either be a wake or a wedding. However, somehow we suspect its technology, submitted in combination with IBM, Tivoli and Wang in opposition to DEC/Microsoft, will win the day. Hewlett-Packard says the joint submission answers 70% to 80% of the Open Software Foundation's request for technology requirements.

...AS UI BOWS TO OSF's DISTRIBUTED COMPUTING ENVIRONMENT

Unix International is expected to concede a victory to the Open Software Foundation this week when it publicly endorses DCE and embraces it as a core technology within its UI-Atlas framework. Unix International will also finally recognise OSF/Motif as a acceptable alternative to Open Look, its bitter rival, with the introduction of prototype software that reportedly produces an "independent look and feel" encompassing both programs. To witness this new twist in the long-running Unix wars, Unix International was expected to invite Open Software Foundation chief David Tory to its Atlas unveiling Monday, September 16th. Whether Mr Tory obliges with his presence remains to be seen. DCE's runaway success in the marketplace, a psychological stampede Unix International never acted to counter other than to dream up the Atlas superspec (UX No 331), has forced Unix International to put it on a par with and acknowledge it as an alternative to Sun's ONC. What provisions Unix International will make to acquire and pass on DCE code to its members was undecided at press time. While the Open Software Foundation appears to have gained ground in this skirmish, a battlefield Sun has yet to relinquish, Unix International seems to have won the clash of the operating systems and may also be accorded laurels for TP, OSI and object orientation.

DEC COSIES UP WITH MICROSOFT, INTEL

Microsoft Corp, DEC and Intel Corp are among select ACE Consortium members gathering together this Tuesday for a press conference in San Francisco - the same day as the Open Software Foundation's bash. The event - also involving Compaq and Silicon Graphics, but not ACE instigators MIPS and SCO - could provide more details on Microsoft's progress with New Technology, or "Windows NT mode" as it's increasingly becoming known. Early copies of NT are expected before the end of the year or early in January. DEC has been working closely with Microsoft on NT - the chief designer is, after all, VMS chief architect David Cutler - and has apparently been encouraging Microsoft to include DEC networking technologies within NT. It already has a prototype version up and running on a DECstation, and is also said to be interested in NT for its forthcoming RISC-based Vaxes. DEC plans to offer NT alongside its SCO Open Desktop offerings on ACE-compliant platforms, which should begin shipping next summer.

ABACUS SOFTWARE SOLUTION

FOR MAC APPS UNDER UNIX

Abacus Research and Development Inc, an Albuquerque, New Mexico start-up funded out of pocket by its founder and in need of venture capital, is attempting to reverse engineer the Apple Mac so Unix machines can run shrink-wrapped Mac applications. The hurdle for any would-be Mac cloner has always been the inimitable Apple ROM. Abacus claims it has managed to duplicate the ROM in software in a program called Executor 2. If true, it's believed to be a first. Xcelerated, the company whose Mac emulator RDI used in Brite Lite, its infamous Unix/DOS/Mac laptop, before litigation started between them, has yet to produce a software-only solution. RDI had to yank ROMs out of old Apples and imbed them in Brite Lite to get it to run Mac programs. It's early days yet for the programming team at Abacus; the software is "not yet beta." It will only work on 68000 machines (the chips Apples are based on) because they haven't written or bought a 68000 emulator: it's on a NeXT box because they have one. It doesn't yet support colour, sound, printing, System 7 or AppleTalk because, as they say, rewriting the Macintosh operating system from scratch is a big job. And it's only 100% guaranteed to run the number one best-seller on Macs, Microsoft Word, other of the top 100 Mac programs all being quirky and untested. But it does retain the look and feel of the programs as they are on the Mac, a situation that's both good and bad: founder Clifford Matthews says it could lead to an Apple lawsuit - and notoriety that might get him the funding he needs to finish the software. Abacus describes Executor as a very small program of approximately 3,000 lines of C code and assembly "glue" that uses a large library the company has built called ROMlib, a library of routines that replaces those provided by the Mac ROMs. Although Executor has some assembly language portions, ROMlib is written entirely in C.

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SUNBEAMS

SunSoft disagrees with itself on Solaris distribution format

No new software emanating from the Sun enterprise in any of its guises will be going out on tape any more, according to Sun's self-appointed "CD Cop" William Petro, a manager in SunSoft's CD-ROM product marketing group. And, (coincidentally?) continuing the Star Trek "Next Generation" theme that Interactive Systems Corp began when it was part of Eastman-Kodak (UX No 337), Petro has been awarding "CD-Romulan" t-shirts to CD converts within Sun: "read my disks," the garments assert. Indeed Petro said that at last week's announcement of Solaris 2.0 for Intel Corp platforms, SunSoft's launch team incorrectly alluded to a taped-out version of the software that would be available. It will only be available on CD-ROM, from Sun, Petro says, although the distributors - Dell, AST, CompuAdd and the like - are likely to offer the operating system bundle on other formats, as few personal computer users have CD-ROM capability. This, he admits, is likely to cause a number of installation and device driver headaches for the Intel crowd, not least because Solaris has not been put together in such a way that would enable it to be taped out in a single stream. However, we think Petro should take a stroll down the corridor and talk to some of his SunSoft colleagues who take an opposing viewpoint: according to a SunSoft spokeswoman we talked to, Solaris for Intel will be distributed on tape as well as CD and they are also evaluating diskette. Who said islands of information?

Solaris will be "tweaked" for different Sparcs

Sun people at the Sun User '91 show in Birmingham last week, including "distinguished engineer," (that's what it says on his card!), Robert Gingell, took exception to a remark in last week's front-page piece (UX No 350), which said there will be no one generic port of Solaris to "the Sparc." However, at the UK announcement of the operating environment, SunSoft's Allan Snell made it clear, several times, that there would be different implementations for at least the Fujitsu and Tera Microsystems Sparc CPU sets. Sun was unable to tell us definitively whether there would have to be others for the rest of the half-a-dozen or so Sparc chip-sets. However, Gingell made it clear that the binary version of Solaris is unchanged, whatever Sparc part it runs on, and there would likely have to be a certain amount of tweaking to deal with the different floating-point and memory management features of the various Sparcs, just as there are different device drivers for the range of attached peripherals: it doesn't mean different versions of Solaris.

New OSI release planned

Sun is also working on a new release of its Open Systems Interconnection development environment to coincide with the release of Solaris 2.0. OSI 8.0 will be based upon Unix SVR4 and include Streams capability, a full programming and development system, a network manager which will monitor the OSI stack at the node-level, and other value-added services. It comes from Sun's International Centre for Network Computing, based in Grenoble, France, which is headed-up by Jean-Pierre Baudouin: it is currently staffed by around 20 engineers. That's part of Sun Connect, one of the three businesses under the wing of Sun Technology Enterprises Inc, which is a subsidiary of Sun Microsystems Inc! See below.

Technical council for Intel partners

What is and isn't in the Sun operating system for Intel machines hasn't all been decided yet, but time-to-market is a pre-eminent consideration so they've set up a technical council that includes their "Intel partners" to spec out what's necessary: they're not expected to try to accommodate every single Intel device driver. The EISA bus will probably be written in first, ATs can be hooked off of that. Conformance to the processor specific application programming interfaces inherent in BCS 2.0, much as SCO might fancy it, are not a market necessity SunSoft reckons. SunSoft and the council have until the beginning of November to work it all out.

Sun Tech - a "holding company"

Apparently we're not going to be hearing much per se from Sun Technology Enterprises, Sun's other subsidiary. Because it's something of a grab bag with its products all so unrelated, Sun Tech has relegated itself to the position of a holding company overseeing three separate strategic business units, each of which will strike out on its own to achieve the recognition that would otherwise have gone to Sun Tech. Sun Pro will be responsible for productivity tools and compilers; Sun Connect for connecting with IBM and DEC installations among others; and Sun PICS for printer products. Naturally each is a profit and loss centre so performance can be tracked. Meanwhile, this week a fifth Sun subsidiary Sun Express becomes official, even though it's quietly been in business for a while awaiting a leader. Based in Massachusetts, it's chartered to telemarket peripherals, supplies, accessories and spares to users and VARs. Sun has hired 15-year DEC veteran Dorothy Terrell as president and expects the unit to do \$150m plus this fiscal year ending June 30. It's due to expand internationally within the next six months.

Novell will not market Solaris

A lot of people got the notion - aided and abetted by Sun staff, we must say - that Novell is going to distribute the Intel version of the new styled Sun operating system, Solaris 2.0. Need we say at this juncture that such is not the case, however much Sun, or rather SunSoft, would like it to be so. According to Novell's clarification of its position, it is drawing the line at marketing the thing and will limit itself to participating with Sun in providing channel-directed training and addressing service and support issues as well as issues of technology integration (like tightly coupling NetWare and Unix), testing and distribution of client operating systems from servers. It's got deals like this from other Unix vendors, companies it calls "market leaders," and wouldn't want to be accused of any kind of favouritism or exclusivity on this account. Unix System Laboratories, on the other hand, where Novell is the largest outside investor, is viewed in a different light as a "technology leader," a distinction it is likely to use to cut a special deal to distribute "Unix Lite" (UX No 350) - if not under its own banner perhaps in a venture a la IBM/Apple.

Toshiba Sparctop readied for US, UK

Back in July (UX No 342), Toshiba Corp said that its 13.2 MIPS, 300Mb disk, Sparc LT laptop workstation wouldn't be marketed outside of Japan "in the near future." However, the thing was spotted at last week's Sun User '91 show in the UK, and the firm is said to be readying it for introduction sometime next quarter. Nippon Sun Microsystems KK already OEMs the LT in Japan: a UK price of around £6,500 has been touted.

CompuAdd ships SS1+

Mass marketer CompuAdd has started shipping its newest Sparc clone, the SS1+, a \$5,500 25MHz 15.8-MIPS model that reportedly runs 25% faster than the original SS1: a base unit includes 8MB of memory upgradeable to 64MB, 3.5-inch 1.44MB drive, three S-bus slots, 19-inch monochrome monitor, mouse, keyboard and OS.

Sun working on RAID?

Meanwhile Sun is now rumoured to be working on a RAID - redundant array of inexpensive disks - storage solution that it would likely use in conjunction with its upcoming multi-processing server technology. RAID would allow Sun to offer high-end, low-cost, large capacity distributed file handling systems.

IBM GIVES UP ON 1991: "STAGING RELEASES" OF NATIVE MAINFRAME UNIX DUE MID-1992

IBM Corp has given up on salvaging anything from this year's fourth quarter, so last week's announcement was not the neck or nothing blitz expected, and none of the new processors ships until March, more or less ensuring that 1991 goes down in history as the first year since the exhausted aftermath of World War II in 1946 that the company has seen a year-on-year fall in turnover. Nevertheless, the announcement saw the launch of 100 new products, seven new mainframe processors, new models of the 3390 disk and two new disk families, a tentative and unconvincing first pass at native Unix on the mainframe, and a whole new layer of confusion in the area of AD/Cycle and SystemView. Although the hottest property is probably a new 9340 5.25" disk drive, on the native mainframe Unix, AIX/ESA, IBM is studiously vague, saying that there will be staging releases in the second quarter of next year, with availability on the baby 9221 machines - 9370 replacements - in the third quarter. With new disk drives about the only major items in the announcement that are immediately available, it suggests that IBM has decided to try to get all its financial bad news out of the way in 1991 in what it knows is going to be a truly awful year whatever it does, and start 1992 with a clean slate in the hope that it can turn in a much better performance - although little of the new stuff will be shipped in first quarter. Analyst comment - see page five.

SUN DELIVERS IPX ON A BOARD

Trying hard not to allow its SunSoft Inc relative to hog all the limelight, Sun Microsystems Computer Corp last week introduced the Sparcengine IPX, a version of its recently-introduced Sparcstation IPX workstation repackaged as a board-level OEM offering. It's targeted at builders of Sparc laptop and ruggedised systems and at the scientific, factory automation, medical instrumentation and command control markets (UX No 343). The Sparcengine IPX, like its workstation cousin, is rated at 24.2 SPECmarks - 28.5 MIPS and 4.2 MFLOPS - using 40MHz Sparcs from Fujitsu and Weitek Corp. The board includes the GX graphics accelerator - already on a single chip in any case - 16Mb to 64Mb RAM, cache, SCSI, audio, Ethernet and two SBus slots in a 9-by-9.7" package. It runs Solaris 1.0 and the Open Network Computing environment, supports Open Look and DeskSet tools. With 16Mb RAM, prices start at \$9,000 - £7,700 in the UK.

TEKTRONIX ADDS LOW-END COMMERCIAL X-STATION LINE

Wilsonville, Oregon-based Tektronix Inc may be out of the system business, but it's determined to make its mark in X-Window System terminals, and in its latest foray it has come out with a line of low-end XP10 models built around Texas Instruments Inc's 32MHz TMS 34020 graphics processor for high-speed windowing and two custom ASICs. The TekXpress XP10 Series can be added to networks in server, workstation or multi-personal computer environments, enabling users to access "virtually any" networked MS-DOS, ASCII terminal, Macintosh or workstation application in their department or enterprise. Tektronix is aiming at the Unix office automation, transaction processing, financial services and decision support markets "where simultaneous on-screen access to multiple applications are key to productivity". There are four models - 15" monochrome XP11 at \$1,700; 15" grayscale XP13, \$2,000; 14" XP15, with 16 displayable colours, \$2,500; and 14" XP17, with 256 displayable colours, \$2,900, all fourth quarter. The terminals support native Sun and DEC windows fonts and come with Tek's X Window System Release 4, 4Mb to 12Mb memory, 128Kb ROM and IBM 101 keyboard (VT-200 keyboard optional) and three-button mouse. The screens are all 1,024 by 768, 70Hz refresh. In networking, users can choose between thicknet, thinnet or twisted-pair Ethernet. DECnet functionality is also available as an option and the Simple Network Management Protocol is supported. Tek also launched in the US a network consulting service to help TekXpress users.

TADPOLE TO LAUNCH ITS SPARC NOTEBOOK AT COMDEX

Tadpole Technology Plc's plans for a Sparc-based notebook are progressing, and Microbytes Daily hears that the Cambridge, UK company is planning to launch the thing at the Comdex show in Las Vegas next month - alongside a prototype version of a colour model. Some of the specs have changed since April, and the Sparcbook 1 now weighs 6 lbs 14 oz including batteries and peripherals. It will come with the new SunSoft SunOS 5.0 operating system and include MS-DOS emulation, as well as a modem and Ethernet interface and will measure 11.8" by 8.5" by 1.9". Tadpole reckons that the Sparcbook will deliver 18 MIPS sustained performance at 25MHz using the Cypress Semiconductor Inc CY7C-601A-25UC Sparc integer unit and the CY7C-604A-25UC memory manager. The core system is designed on two conventional boards with surface-mounted components on both sides and comes with 8Mb or 32Mb, 85Mb or 120Mb disk and 1.44Mb floppy. It has a 640 by 480 64 greyscale LCD display, and for a mouse, uses an ingenious Force Sensitive Resistor key which responds to pressure and direction of the finger - press harder and the cursor moves faster. Tadpole interfaced the M-bus to AT-bus peripheral controllers, and stops the clock when it is not in use; pricing from \$6,000 is likely.

SECOND IBM-APPLE JOINT VENTURE COMPANY SEEN FOR MULTIMEDIA

IBM Corp and Apple Computer Inc are now expected to establish not one but at least two jointly-owned autonomous subsidiaries; the first, as planned, to develop the Apple Pink project to the point where it becomes an object-oriented desktop operating system that both can use on IBM's Rios RISC; the second to pool the two companies' resources in multimedia, portable and wireless computing. A report in this week's Infoworld, quoted in the New York Times, suggests that the first product out of the newly-planned company will be a palmtop computer that can read and play back multimedia programming on compact disk - ostensibly putting the two in competition with Apple's Japanese partner Sony Corp and its Data Discman disk reader. The suggestion that wireless local area networks will also figure in the collaboration suggests that there may be an even bigger role for Motorola Inc, already brought in to help design and to fabricate the microprocessors for the joint venture.

AT&T FOLLOWS PHONE SWITCH MOVE TO RISC WITH 88000

The telecommunications world is not far behind the computer industry in moving to RISC processors, and in another indication that those obituaries of the Motorola 88000 RISC may have been premature, AT&T Co is reportedly planning to move to a chip set thought to be based on the 88000 RISC for high-end models of its Definity PABX line. According to Electronic News, the Definity Ones use the Intel Corp 80286 and the Definity Generic Twos use a proprietary AT&T 501CC complex instruction set processor. The company plans to offer Definity Generic One customers the opportunity to upgrade by string three Generic One cabinets together and adding the new processor and new software. The Generic Two would then likely be phased out to eliminate overlap. The 88000 has already found favour in the telecommunications world with GEC Plessey Telecommunications Ltd rewriting the System X software to run on it - under the control of Chorus Systemes SA's Chorus Unix-derived kernel. GEC Plessey is also sounding out RISC vendors for a new CPU for the iSDX PABX. Northern Telecom Ltd has moved to RISC in its DMS 10 rural exchange and will do so with its DMS 100 Supernode large exchange, but it has opted for the MIPS Computer Systems Inc R-series.

SCO PUTS TOGETHER ITS PLAN FOR EASTERN EUROPE, SOVIET UNION

Although the Santa Cruz Operation Inc's Unix system software is probably the most widely copied Unix software in East Europe and the Soviet Union, Jesse Young, general manager of the firm's Frankfurt operation, which is responsible for those regions, believes this mentality is changing. As new hardware technology becomes available over there, users are beginning to require the most up-to-date versions of software applications, and rather than going through the laborious process of copying packages and then figuring out how the stuff works by trial and error, they are increasingly willing to pay for it: indeed they're more interested in getting the newer Open Desktop and Unix products than Xenix, says Young. The fact that in the past copying and learning by experience has been the preferred method of acquiring software means, Young believes, that there is a high-level of Unix know-how: SCO has even uncovered a Polish language version of its Unix software. SCO began to take an interest in the East European markets around the time of the 1990 CeBit show, after which, many export restrictions were relaxed. Until that time it hadn't sold any licences in the Eastern bloc at all, though there were already "a significant number of copies out there," Young says. This year SCO has been putting a master reseller strategy together and has signed up firms in Poland, Czechoslovakia and Hungary, indeed in all of the East European countries with the exception of Albania - although Young says there has been interest from organisations in Tirana - to market SCO products to end-users and other dealers alike. In six to nine months' time, SCO will rationalise this base and choose two from each country - there are already four in Poland - call them distributors, and bring their relationships with SCO into line with those which apply to the rest of its West European partners. They'll only be selling products for pounds sterling, and there will be no discounting, Young says. The Soviet market is currently supported through the East German and Polish dealers: SCO expects to sign up four or five resellers over there by next year.

BORLAND ADDS APPLICATION FRAMEWORK FOR ITS TURBO C++

Borland International Inc is now shipping Turbo C++ with an application framework called Turbo Vision. An application framework is an object-oriented software library that simplifies the development of computer programs. The framework includes a generic application that programmers can use to create windows, pull-down menus, dialogue boxes and scroll bars, all with mouse support. The Turbo C++ & Turbo Vision package includes two compilers in one; an ANSI C compiler and a C++ compiler conforming to the AT&T C++ 2.0 specification. The C++ Application Framework provides support for streamable objects, whereby objects can be made "persistent" - that is, objects managed by the database runtime - by reading them from and writing them to files. Meanwhile, the Programmer's Platform is an integrated development environment designed to make it easier for programmers to compile, debug and run C and C++ applications. It features overlapping windows, mouse support, Turbo Help, a multi-file editor and an integrated debugger. The "smart project manager," a visual Make utility, helps take the complexity out of managing projects, says Borland, and gives the programmer access to an application's code. Also part of the package is VROOMM Overlay Manager, which provides automatic overlay control and enables programmers to develop larger programs that take advantage of overlays that operate in 640Kb of memory. Context-sensitive, hypertext help is available via Turbo Help with copy-and-paste examples for every run-time library function to enhance programmer productivity and ease of use. Turbo C++ with Turbo Vision is compatible with Borland C++ so that code written using Turbo C++ can be converted to Borland C++. Turbo C++ & Turbo Vision requires MS-DOS version 2.0 or later and operates on MS-DOS micros with 640Kb of memory (512Kb for command-line compiler), a hard disk with 7Mb minimum of free disk space is required. The price for Turbo C++ & Turbo Vision is \$200. Upgrades for Turbo C++ users cost \$100.

DEC LICENSES OPTICAL STORAGE SOFTWARE FROM ZETACO

DEC has gone to Minneapolis-based Zetaco Inc for optical data storage software on its Unix-based systems. DEC has taken out a licence for Zetaco's Transparent Optical File System (TOFS) software, and has exclusive rights to the product on DEC systems and non-exclusive rights for other Unix systems. TOFS provides file management for OEMs and VARs who want to add re-writeable optical storage peripherals to network file servers: it keeps the most frequently used files on faster magnetic disks and the least used to high-capacity optical drives, still accessible to the network via NFS. DEC hopes the software will give it in-roads into business from customers using large amounts of data, such as banks and insurance companies. Zetaco itself markets the software as part of a turnkey hardware and software bundle called NETstor server, using the Motorola 88000 chip: it entered the optical storage market in 1986, and began the move into open systems a year later. The software is also available for Sun Sparc systems.

BANYAN SYSTEMS SETS OUT ON THE LONG JOURNEY TOWARDS "OPENNESS"

As briefly reported (UX No 349), network operating system company Banyan Systems Inc, Westborough, Massachusetts has started the long trek towards 'openness' with the announcement that it will be producing a version of its Vines network to operate with Santa Cruz Operation Inc Unix. Hitherto, Vines has used an optimised version of AT&T Co's Unix, unfortunately so tinkered with that standard Unix applications would not run on it without modification. While the approach produces good performance figures, it put some buyers off, by turning an ostensibly standard system into an essentially proprietary one. The announcement marks the start of a long-term strategy by Banyan to implement its operating system to other flavours of Unix. At the moment the plan consists entirely of 'strategyware' - there are no products involved, though Banyan's European marketing manager, James Ringrose said that next year should see the first fruits of the companies' joint venture - an application server. While this product will have some rudimentary file sharing and print functions, a standard Vines server will still be needed on the local network - the application server will do little more than its name implies - enabling users to access and run shared applications. But Banyan already has a similar application server for OS/2, so this is hardly world-shattering. The real advance will be when a Vines system can run with Santa Cruz Unix alone, but there are not even any estimates of when that will appear. The next problem is whether Banyan will be able to get acceptable performance with Vines running over a standard operating system. "A very good question," said a non-committal Ringrose, adding only that the company would not have started down this avenue of development if it didn't have high hopes.

CAMBRIDGE-BASED MYRIAD LAUNCHES 80860/XP AT BOARD

Cambridge, UK-based Myriad Solutions, maker of 80860-based accelerator cards for MS-DOS personal computers, has launched what it claims to be the first single processor applications accelerator board to achieve 100 MFLOPS. The Dash!860/50 board uses the new 64-bit, 50MHz Intel 80860XP RISC processor with 8Mb dynamic-RAM as standard, expandable to 32Mb, custom memory manager, and shared memory for fast data transfer. Like its slower relative, the Dash!860/25, which uses the 25MHz 80860, the AT board supports C, C++ Fortran and Pascal compilers, maths, signal, image processing and graphics libraries - including Dore, NeuralWare and Owl, and can be accessed by MS-DOS-based applications, including Microsoft Windows 3.0 and Desqview. Myriad turns out to be the supplier of boards for Boulder, Colorado-based Set Technology Corp's 80486-80860 imaging workstation, and Myriad has a similar product itself, the Dash!25, packaged as an integrated workstation. As an add-in board, the Dash!80860/25 costs from 3,500. The company's next move is to implement full Unix or X-Windows on the 80860, so that it can run applications written for "pure" 80860 workstations such as those from Samsung Electronics Co and Oki Electric Industry Co. Myriad says the 80860 is particularly good at numerically intensive applications such as computer-aided design, electrical design, visualisation, engineering simulation and image processing. The company says it also has a deal with NeuralWare Inc of Pittsburgh, Pennsylvania, whose products are distributed as a package in the UK through Scientific Computer Systems Ltd. Myriad and Set are among the companies looking to license Du Pont Pixel Inc's Fusix 80860 software environment.

ACER SURVEY SAYS 46% WOULD PREFER SVR4 ON ACE

The results of an informal survey, effectively a random sampling of The Net, conducted last month by an Acer engineer on his own - from his own box from his own home and having nothing official to do with his company - on the question of what operating system should be on ACE boxes, has apparently started some people thinking. Of the 148 respondents 46% of them - the overwhelming majority - voted for SVR4. The Santa Cruz Operation's Open Desktop, the official operating system, only managed to garner an appallingly low 5%. If you add those who voted for BSD without reckoning that V.4 incorporates most of Berkeley, it would have been an SVR4 landslide - 66%. Add another 4% representing those who voted for SunOs on the basis that the next release from Sun is SVR4. Applying a similar principle of course you could add the 14% who voted for OSF/1 to the Santa Cruz Operation's score on the grounds that ODT is based on DEC's version of OSF/1 but that's still only 19%. The voters were all identified and even when you discount the obvious bias votes - though with all the various agendas flying about that might mean disenfranchising everyone - SVR4 was still out ahead.

IBM LICENSES SERVIO GEMSTONE OBJECT DATABASE FOR PROJECT

IBM Corp, which has already appointed Alameda, California-based Servio Corp an RS/6000 Business Partner, has given the company's GemStone object database management system a further vote of confidence by licensing it for use in an unspecified manufacturing automation application. Financial details of the agreement were not disclosed. GemStone is a multi-threaded client-server object database manager, with support for C, C++ and SmallTalk applications.

LOCUS FOR MAC ADDS SunOS

Inglewood, California-based Locus Computing Corp has expanded the reach of its PC-Interface desktop-to-Unix software for the Macintosh to provide support for Interactive Systems Corp Unix V/386 3.2 and SunOS 4.1; it is already available for Santa Cruz Unix V/386 and Open Desktop. PC-Interface for Macintosh provides standard AppleTalk services for Unix using technology from Pacer Software Inc, La Jolla, California. It's \$360 per user for a two-user Basic Services licence.

XEROX ADDS SPARCSTATION IPX TO ITS LINE AS XEROX 6522

Xerox Corp's XSoft software organisation in Sunnyvale, California has added Sun Microsystems Inc's Sparcstation IPX to its 6500 series of Unix workstations as the Xerox 6522 to provide a mid-range system on which to run the company's GlobalView document management software. Bundled with GlobalView software, the Xerox 6522 with 16Mb memory and a 207Mb disk offers about twice the processing speed of the entry-level 6520, based on the IPC, plus graphics enhancements and more memory. The Xerox 6522 workstation comes with choice of colour and mono displays and costs \$14,000 with the GlobalView starter kit and a 19" monochrome display, and \$17,000 for a 19" colour display system, now.

GEC PLESSEY PROUDLY ANNOUNCES ANOTHER SYSTEM X SALE TO THE PHILIPPINES

As the digitisation of the UK telephone network nears completion, GEC Plessey Telecommunications Ltd is busy seeking those all-important foreign sales. Hence its pride in having sold a second System X exchange to the Philippines. Faced with the islands' equatorial climate, the exchange's delicate circuitry will be enjoying accommodation that would be the envy of most hotel travellers. Air-conditioning, heating and uninterruptable power supplies are all included in the cabinet prior to departure from the factory, says GEC Plessey Telecommunications, not to mention the capacity for 2,000 exchange lines.

NEW MICROSOFT C COMPILER CLAIMED TO SOLVE MEMORY MANAGEMENT PROBLEMS

Redmond, Washington-based Microsoft Corp says it has released its latest C and C++ compiler for the personal computer market. The product, which is inventively named C 7.0 and is due for shipment by the end of the year, enables the production of both 16-bit and 32-bit code, getting round some of the memory management problems associated with programming under the Windows environment. By using an intermediate, compressed P-code, Microsoft says, the compiler reduces the size of applications by up to 60%. The compiler also allows for the more efficient calling of functions through in-lining techniques. The C move is seen as a stepping-stone to the company's 32-bit Windows and NT operating system.

IBM AIX/ESA: ANALYST VIEWPOINT

by Don Haback

IBM has a virtual lock on the computer marketplace, but its business in this vital area has been growing much less than needed for continued good health. Some analysts have suggested that the total number of large mainframes has been slowly declining during the last few years. So, what moves were required by Big Blue in order to protect its base and perhaps even restore some of the growth? One move is the recognition that the Unix community is increasing in importance. IBM has been saying this for a long time now, but on the eleventh, it demonstrated that it really understands the problems and opportunities created by the growth of Unix. We think that IBM's AIX/ESA Statement of Direction is a very strong defensive move for IBM, and especially for those large mainframe users who have been seeking ways to satisfy their Unix users needs without abandoning their heavy investments in Armonk iron.

Here is a summary of the most interesting aspects of the announcement. IBM said that it "will provide AIX system programs on the ESA architecture." The new implementation will operate in a native mode, not just the VM/ESA guest or logical partition as currently available. The idea is to make AIX options available on the mainframe family, and to allow users to take advantage of all the well documented mainframe capabilities (large and fast disks, the ASCON's very high speed data channels with great distance capabilities, dynamic control and connection capabilities and other high speed peripherals as well as interfaces to commercial relational database systems and applications). The ESA architecture, which becomes available to AIX users in stages, to be announced during the second quarter of 1992, includes large single image multiprocessors, large real and virtual memory, 2GB address spaces, IBM's Vector Facility (for "supercomputing"), and the supposed access to the files already written for a myriad of current mainframe applications. AIX/ESA will offer Sun's NFS, Apollo's NCS, AT&T's Workbench and soon, HP's Soft Bench for AIX CASE. It will, of course, offer OSF's DCE and OSI as well. It will comply with all the main Unix standards.

Buried in the announcement, but very important, is the fact that IBM also intends to connect the RS/6000 workstation directly to the mainframe via channel interfaces. Current workstation networking environments use Ethernet or Token Ring LAN communications. Under ESCON, with direct connections to the computers' internal buses, the effective data rate can increase by an order of magnitude. This idea will let users have very fast access to central storage and to other workstations, as well as the opportunity to work in distributed computing environments much more efficiently than is possible under LAN network management. Some other Unix-related pieces of the announcement include a Statement of Direction for POSIX compliance for MVS/ESA - last week IBM also said its OS/400 operating system would move toward POSIX compliance and growing support for DCE across multiple platforms for client/server computing.

What does all this mean for IBM? We think IBM will be able to keep its large customers happy, especially those who want large scale data server and compute server applications, those with numerically intensive applications and those with large interactive "campus" servers. This means that they will keep their mainframes installed, and will continue to buy additional DASD (IBM is a technology leader in disk, and its products have high margins). Thus AIX/ESA is really a major defensive move for IBM.

What does this mean for the other Unix market participants? Clearly, it is positive, except at the high end computer camps. Amdahl and Unisys will have great difficulty getting prospects to change from IBM to their brands in the face of the new IBM offerings. Beneficiaries will be the software and systems integration suppliers, since their potential markets will grow. For competing workstation companies, new problems will arise, especially since IBM has kept its ESCON channel interfaces rather close to its vest. The RS/6000 should grow in importance, since it becomes the workstation of choice in high performance networks. We anticipate that ESCON interfaces for Sun, HP, DEC and the rest will emerge (both from the manufacturers themselves and from third parties).

In general we think that the Unix community benefits from having IBM as a full fledged member, since its presence will settle the market and eliminate a major confusing factor. We now know what IBM will do, and we have some idea of when it will do it. Now all we have to do is see if IBM can meet its promises.

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US sources say HP is readying more Sun and IBM killers that it'll announce in the same breath as IBM reveals its low-end RS/6000s (UX No 346). The new Snakes are said to match Sun dollar for dollar at the low-end, whilst they'll have performance ratings every bit as far ahead of the competition as those it tossed out with the original Snakes.

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US DEFENSE DEPT CONSIDERS FURTHER SQUEEZE ON RISC

Although the CoCom export restrictions on high technology were relaxed at the beginning of this month, one of the changes that occurred made licences mandatory for all exports of Risc workstations (UX No 349) - and now the US Department of Defense is proposing a new set of export restrictions that have set the major workstation manufacturers up in arms. The moves were sparked off by a hold-up of 15 licence applications for Risc exports to the Soviet Union and China. Workstation vendors including IBM, DEC, Silicon Graphics and Sun Microsystems have been lobbying the Pentagon with the help of the Washington-based American Electronics Association, and have apparently already won some concessions over the original safeguards. But now people at the Pentagon have raised the idea of some sort of hardware and software restrictions that would prevent the use of computers for such defence applications as anti-submarine and nuclear chemical warfare. According to the *New York Times*, this would restrict the applications that could be run, audit the programs and limit connectivity. But industry executives are sceptical about the practicality of achieving this, and worried about what it would do to their competitiveness with non-US vendors. A spokesman for DEC said that the company was "concerned about any unilateral action that the US Government would consider at this stage. In the PC industry, clonemakers are prevalent all over the world, and that trend is now rising in Risc. New controls or regulations would not keep the technology out of unwelcome hands". HP said it was "unilaterally opposed to export controls, which it believes have been ineffective in the past". Further meetings are planned over the next few weeks.

Not to be outdone by Usenix, Unix Expo is slipping in a new Multimedia Forum coordinated by the Interactive Media Group of the University of Massachusetts at Lowell which is supposed to feature and link existing product offerings and technologies from several vendors as well as demonstrate prototyped next generation workstations and provide a combined analog/digital video distribution network. If you want to get in on the act call the IMG's co-director Richard Miner at 0101 508 934 2630 in Massachusetts. Unix Expo is of course set for October 30th through to November 1st in New York City.

The Open Software Foundation is now up to 300 members, slightly ahead of rival Unix International at last count: the Open Software Foundation has snared American Express Travel Related Services, BBN Software, Banyan, Barclays Bank, Lawrence Livermore National Labs, NEC, TRW, Tandem, Unilever and SIGMA System, the spearhead of Japan's Sigma project in the latest go-round.

Underlining yet again the leap in corporate culture IBM Corp will have to make if it is to realise its ambitions in workstations, the *Wall Street Journal* points out that in its brief history of just nine and a half years, Sun Microsystems Inc has got through a stunning eight generations of workstations.

Since Windows NT is part of ACE, will there be interoperability between New Technology and the Santa Cruz Operation Inc's Unix in terms of source code compatibility? Definitely not, says Microsoft's senior vice president of system software Steve Ballmer; NT and SCO Unix are completely independent parts of ACE, and interoperability looks to be confined to LAN Manager for SCO Unix via SCO.

MasPar Computer Corp has now implemented its MasPar Programming Environment development software for the Sun Microsystems Inc Sparcstation line of workstations, so that users can program for the parallel MP-1 processor on remotely-networked workstations. It is already up on DEC DECstations and VAXstations.

Business is so bad out there that NCR Corp has had to scale back the forecasts it made to AT&T Co once it started negotiating a merger agreement: it had said that it would do \$386m net on sales of \$6,620m for 1991, but now says that because of slumping markets in Europe and weakening orders in the Pacific region, the outturn will be "materially below" those forecasts; the announcement puts a question mark over NCR's forecasts for the medium term - it had been going for \$545m net on sales of \$7,300m in 1992, \$897m on \$10,300m in 1995, and \$1,560m on \$16,840m in the year 2000, although forecasting that far ahead in the computer industry is a real mug's game; the company did \$369m net on sales of \$6,290m last year, and now does not expect to achieve as good a result this year.

Separately, AT&T Co announced the final terms of its acquisition of NCR Corp, saying that it will swap 2.839 of its shares for each NCR, paying shares worth \$110.74 for each NCR or a total of \$7,400m; the formula is based on the average closing price of AT&T shares over the 20 trading days to last Friday.

Lotus Development Corp has decided to offer employee benefits - medical and dental care, vision and hearing coverage and bereavement leave - to the live-in partners of its homosexual employees.

The proposal by the US government agency, the National Institute of Standards and Technology (NIST) to effectively take over X/Open's job and give it to its OSI Implementors Workshop (OIW) to do (UX No 349), seems to have been temporarily derailed. Last week's meeting of the OIW's task force on Open Systems Environment Expansion - whose role it is to recommend whether OIW should take the job - decided to postpone addressing the central issue of the end-user requirements process until after it makes its final report in December. X/Open now has representation on the task force to watchdog the organisation's interests.

For Sale: two-ton racing yacht, Bruce Farr designed, custom built by Green Marine, Lymington, one careful owner, only 8 months old, full Admirals Cup bodykit. International commitments and financial constraints force quick sale: serious offers only around \$600,000 - £350,000 - for Wings of Oracle.

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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23-27-1991

The weekly information newsletter for the UNIX ® community worldwide

London, September 23-27 1991

Number 352

OSF CHOOSES TIVOLI, HP AS BASIS OF ITS DISTRIBUTED MANAGEMENT ENVIRONMENT...

The Open Software Foundation last week wheeled out DME, its Distributed Management Environment, conceived as the backbone of a vendor-neutral framework for managing distributed computer systems, networks and applications, with a strong object-oriented bent. Of the original 27 accepted submissions to the DME request - later culled to 14 - OSF, treading a politically and legally sensitive path, has pragmatically opted to take a mixed bag of technologies from both founder members and independent software houses. As predicted last month, (UX No 349), it has plumped for Austin, Texas-based Tivoli Systems' Wizdom object-oriented distributed management framework to provide the meat of DME. Wizdom includes a set of services that govern object interaction, a management model, graphical display services and a command line interface: it's said to meet up to three-quarters of the overall technology requirements. The importance of this decision - which should elicit some welcome sighs of relief from a Unix development community currently beleaguered by a swarm of competing technology and standards consortia - is that OSF rival, Unix International, also included Tivoli's technology in its own Atlas framework for developing and managing distributed applications under Unix. Supplementing the Tivoli framework are elements of Hewlett-Packard's Open View, an object-oriented software development program from IBM's research Labs, an applications programming interface from Groupe Bull, Banyan Systems' Network Logger, and the Network Licensing System from Hewlett-Packard, extending to cover personal computers by Gradient Technologies. Other software utilities from HP and Gradient are also included. OSF has gone to the Massachusetts Institute of Technology's Project Athena - on which IBM, DEC and HP have worked - for version 2 of the Palladium distributed printing technology. OSF offered no timescales on when DME would become available, but most sources suggest that it will take at least 12 months to bring any kind of product to market. OSF will now go away and take the individual various technologies apart, then put them back, together. Full details, pages four and five.

...AS UI BOWS TO FOUNDATION'S DCE IN ATLAS

And just a day before OSF announced the winning technologies in its search for a Distributed Management Environment, as well as the general availability of DCE, Unix International announced its own Atlas distributed computing platform, (UX No 328). Although UI has been working flat out - for fifteen months according to UI president, Peter Cunningham - to bring together a whole bunch of technologies for Atlas, most significantly, it has bowed to the OSF blueprint for developing distributed applications under Unix, by endorsing its Distributed Computing Environment as the "fundamental technology for interoperability" in Atlas. DCE includes technology from OSF stalwarts DEC, IBM, Transarc Corp and Microsoft Corp, as well as the Network Computing System remote procedure call, RPC, originating from Apollo Computer, which is diametrically opposed to UI loyalist Sun Microsystems Inc's Open Network Computing version of RPC, also included in Atlas. The Atlas "superspecification" includes both currently available and future technology, which Unix System Laboratories will supply as the framework for developing distributed applications running on Unix SVR4. As well as conceding the distributed battleground to DCE, the UI camp has also finally recognised OSF's Motif graphical user interface as an acceptable alternative to Open Look: USL says it has an application programming interface for release next year, that produces an independent look and feel which supports both Open Look and Motif at run-time. The solution, demonstrated at the US roll-out of Atlas, will also be offered to X/Open as an answer to its perennial GUI headache. It is based upon the XVT multiple GUI toolkit from XVT Software Inc, Boulder, Colorado, and Palo Alto, California-based Neuron Data Inc's Open Interface. Cunningham says "an agreement" has been reached with these firms, but could not say whether source code from either of the technologies will feature in the final release. Atlas details, see page two.

WAR AND PEACE - UNIX CAMPS AGREE TERRITORIAL RIGHTS

Reading between the lines, last week saw the warring Unix industry camps, Unix International and the Open Software Foundation, admit, in public, the limits of their respective spheres of influence won and lost after some three years of battle. OSF staffers at the Paris roll-out of DME said they were now less worried about the fortunes of their OSF/1 operating system, and were more concerned about Motif and the DCE and DME technologies that the Foundation is bringing to the Unix community. On the other hand, Unix International, which has more or less wrapped up the Unix operating system ground with SVR4, seems prepared to accept the inevitability of its position, with the recognition of OSF's Motif graphical user interface and the inclusion of DCE in its future product plans. In an unprecedented move, OSF chief, David Tory, gave his blessing to Atlas in a statement of support delivered at UI's announcement: OSF staffers said it was "extremely important" that UI had chosen to steer the same course. UI president, Peter Cunningham, says part of the reason that the two fell out of the boxing ring into the bedroom were IBM and Apple's summer of love and Bill Gates' latest gambit - New Technology. The jackpot which is driving the current crop of industry alliances, he said, is the goal of delivering platforms which will attract the investment for the next generation of distributed applications.

SEQUENT TO ADD OSF/1 COMPATIBILITY TO DYNIX

Sequent Computer Systems is hedging its bets in the Unix wars with a plan to add OSF/1 compliance to its Dynix ptx operating system in versions due for release next year. The company also announced that it would support the Foundation's Distributed Computing Environment, and would be evaluating the Distributed Management Environment. With its well-publicised agreements with Unix System Laboratories over the ES/MP symmetrical multiprocessing version of System V.4 (UX No 301,305), Sequent's long-term membership of the rival Open Software Foundation has mostly been overlooked, although it has always supported OSF/Motif. Compliance to the OSF/1 Application Environment Specification will be achieved by adding a different set of library calls for use with OSF/1 compliant applications, allowing both V.4 and OSF/1 applications to be run concurrently. Pyramid Technology Corp similarly combined the AT&T System V and Berkeley 4.2 Unix flavours in the 1980s. The reason, says Sequent's Scott Winkler, is customer demand: "We have a large base of customers who have asked us to provide this", he said. Sequent does not plan to offer OSF/1 as the native operating system. "It would be take a substantial engineering effort to get there, and would not give us the expandability and scalability of Dynix-ptx", said Winkler. Sequent continues to work on multiprocessing with Unix System Labs. It now claims to have an installed base of over 4,000 systems worldwide.

IBM DELAYS LOW-END RS/6000

Rumours believed to be on the money say IBM has postponed introduction of both the so-called "RS/5000", its much-anticipated low-cost low-end additions to the RS/6000 line, as well new high-end RS/6000 models until sometime next year. They have been expected in September and were then rescheduled for the beginning of October. There were no reasons offered for why IBM would backburner the boxes outside of speculation it might have something to do with the company's Apple plans.

UNIX INTERNATIONAL ACCOMMODATES SUN, APOLLO RPCs IN ATLAS VIA INTERMEDIATE DEFINITION LANGUAGE

Although protagonists from both industry camps have long maintained - ever since distributed computing became a mainstream political fruit - that the two opposing implementations of remote procedure call technology, RPC, from Sun and Apollo are unlikely to be reconciled, Unix International says that what it calls the Intermediate Definition Language, IDL, part of Atlas will serve both causes. By writing to IDL, rather than a specific RPC, UI says developers will be able to run their applications across networks using either set of protocols. Cunningham stressed IDL is not an application programming interface as such, but more like Groupe Bull's CM-API protocol manager, which is a part of DME, see page four. Both current applications written to Sun's RPC, and future DCE applications based upon the Apollo implementation, will be able to take advantage of it, he said. Atlas also provides a migration path to future object-oriented technology - it includes Tivoli Systems' object-based distributed systems management framework, again a component of DME - see pages four and five. Atlas will also encompass DOMF, the distributed object management framework being developed by Sun Microsystems Inc and Hewlett-Packard. It manages the distribution of objects across networks, and has also been endorsed by the Object Management Group, which will use DOMF, integrated with a range of other object technologies, as the basis of its Object Request Broker, which it hopes will become the standard for interconnecting heterogeneous object-oriented environments. "Atlas will be compatible with OMG by 1993," said Cunningham, as well as X/Open's prospective object management standard, XOM. Other technologies that USL will release for Atlas include seven-layer, X.400 and X.500 Open Systems Interconnection services being developed in conjunction with Retix; an enhanced version of SunSoft's Network File System; and a global Network Information Service naming system, also from SunSoft. It is not yet clear how the integration of this plethora of technology will pan out: release schedules offered are "phased stages" through 1992 and 1993, though Cunningham says 35% of the work has already been completed, 35% will be delivered in the 1992/93 time frame, and a further 30%, at the application tools level, has yet to be done. The availability of all of these depends upon UI being able to agree "acceptable" pricing and licensing terms with the firms and organisations involved. Atlas-compliant reference technologies - the first 35% - that are, or will become available from Unix System Labs this year, include the enhanced security and multi-processing versions of Unix - SVR4.1 ES and SVR4.2 MP, the latter available in the fourth quarter - the Tuxedo System/T transaction processing monitor, USL's existing OSI and NFS file management services, C++ and Locus Computing's personal computer-to-Unix integration tool. All interface specifications for Atlas components will be available from UI, and Atlas, though it is optimised run on Unix, could also be made to fit other environments, Cunningham says.

AGE LOGIC BUYS PC XSIGHT X-WINDOW SOFTWARE FROM LOCUS

San Diego-based AGE Logic Inc has bought the PC Xsight X11.4-based server from its developer, Locus Computing Corp. PC Xsight turns any 80386 or 80486 personal computer into an X terminal working under MS-DOS. PC Xsight will be marketed and supported by AGE under that name for a transition period, after which an enhanced version will come out as part of the AGE Xoftware X server family. Locus will have access to PC Xsight technology as well as other AGE X products for use with its PC-Interface family of products. Terms of the pact were not disclosed.

AUSPEX PLANS MULTI-PROCESSING, DATABASE VERSIONS OF NFS SERVERS

Auspex Systems Inc, Santa Clara, California, says it has around 180 of its NS 5000 and NS 3000 Unix network file system servers installed. Some 60% of them are engaged on software development and 30% on integrated circuit design: on average, the systems are hooked-up to 15Gb of disk. Most of the boxes are in the US, some 40 or so are in Japan, whilst Motorola Inc has two at its plant in Cork, Ireland, and the ESRC one in Munich. Fuji Xerox OEMs the servers in Japan, whilst Nissho Electronics distributes them over there. The firm is currently on the hunt for UK distributors, and says it'll follow with French, German and Scandinavian resellers. The NFS servers harness Sun Microsystems Inc Sparcstations running SunOS as the host processing element. Up to eight Ethernet networks can be administered by an Ethernet processor, and a file processor based upon BSD 4.3 - separate from the SunOS front-end - handles all NFS operations. The firm does not currently supply a database solution with its machines, but says it will get the likes of Ingres, Informix and Oracle certified on the systems next year via its membership of the Sparc International group. Sometime after it'll likely begin to offer the NS range as high-end NFS database servers, and by then, they will be able to accommodate up to 10 Ethernet networks. Auspex's director of technology, Bruce Nelson, was responsible for the first generation of remote procedure call technology when he was at Xerox PARC in the early 1980s. He says it has taken much longer than expected to establish RPC as a standard networking protocol because of the two different implementations that subsequently emerged - one in Sun Microsystems Open Network Computing environment, the other in Apollo's Network Computing System. He reckons NFS is shaping up to become the Systems Network Architecture of the 1990s, and that despite initial implementation problems, believes Sun is moving the technology in the right direction via its road map. Auspex currently uses Sparcstation 1+ equivalent host technology with the SunOS 4.0.3 operating system: it will move to SunOS 4.1.1 soon, and expects to go over to SVR4 some six to nine months after Sun. Nelson says the firm will track Sun's recent performance developments and will move to a higher specification host platform - and a multi-processing architecture - over time, though no timescales were specified. Auspex has had interest from many of the third party Sparc chip and board suppliers which would like to see their technology being tested in high-end NFS environments, but Nelson says no deals have been inked so far. He says Auspex would also be interested in taking other RISC technologies from the likes of Hewlett-Packard and IBM, if it were to be approached.

SILICON GRAPHICS, NEXT TOP, IBM SIXTH, SUN NOWHERE IN USER SATISFACTION SURVEY

Silicon Graphics Inc registered the highest US user satisfaction rating in what Dataquest labels the workstation industry's first vendor-neutral survey of end users, with NeXT Inc, Digital Equipment Corp, Solbourne Computer Inc, Hewlett-Packard Co and IBM Corp taking the next five places - which looks like something of a blow to market leader Sun Microsystems Inc. The survey, Score Report: Product Improvement Index - Workstations, will be conducted quarterly and is designed to identify and analyze how effectively vendors and their products are meeting the needs of customers in eight categories - quality, product delivery, the space they take up, communications support, vendor commitment to customer, performance and upgrade potential, value for money and documentation. In order to persuade vendors that they need to pay for the service, Dataquest is offering 20 hours of customised consultation from one of its workstation analysts as part of the product, to help those at the bottom of the list to remedy their weaknesses. To draw up the list, responses are collected from telephone conversations with a minimum of 900 small, medium and large workstation users four times each year; this brings the annual sample size to 3,600; Dataquest notes that no manufacturers' lists are used.

HP LOSES 5-10% OF WORKSTATION BUSINESS BECAUSE OF ORDER BACKLOG AND CHIP DELAYS

Hewlett-Packard seems a perfect example of a company not believing its own press agents. Networked Systems Group chief Wim Roelandts says HP misforecast demand for its RISC machines - including its Motorola boxes - by 100% or "tens of thousands" of units. Backlog of the new Snake series, the 700, aggravated by shortages of the Texas Instruments floating point unit, has been out five months, with the 66MHz box the hardest hit. Roelandts calculates the shortfall has cost the company 5% to 10% of its customers. The company now believes it's got a handle on the situation and may see TI chips this month but deliveries won't get the reasonable before the end of the year.

INTERGRAPH 6605 SERVER IS FIRST TO USE C400 VERSION OF THE CLIPPER

Huntsville, Alabama-based Intergraph Corp chose The Hague, Netherlands, where its users met last week at EuroGUG '91, to roll out the first product built around the latest iteration of its Clipper RISC, the C400: it is the InterServe 6605 server, (UX No 344). The C400 is designed to deliver up to eight times the computational power of the C300. The 6605 is being pitched at file- and database-intensive applications, and computer-intensive work such as mechanical design analysis, circuit board routing, and video animation. The C400 processor combines superscalar and superpipelining design techniques and Intergraph rates the new server at 40 SPECmarks and 12 MFLOPS. It comes with 64Mb memory which can expand to 832Mb, 1Gb disk expandable to 30Gb, and a 12-slot cabinet with add-on memory, VME board adaptors, input-output interfaces, disk and tape drives available for expansion. Like its predecessors, the new server runs the CLIX implementation of Unix System Laboratories Inc's System V.3.1 Unix and starts at \$75,000 - £66,600. It ships in November.

IXI GOES CORPORATE IN US, SIGNS WITH PROTEK IN THE UK

England's IXI is finally going to break down and put an operation in the States. IXI Corporation, the new sales and support subsidiary headquartered in San Ramon, California, is supposed to be announced on October 7th next month. Former Frame Technology vice president of sales and marketing, Steve Klann, with an established track record of boosting young company revenues, has been named president and CEO. He has been working with them now for the last four or five months. The unit will supposedly have an end-user sales slant. A second US office, this one on the East Coast, is anticipated. Research and development remains in the UK. IXI is also understood to be readying a Japanese subsidiary, from where it will serve the Far East marketplace, and an OEM deals out there are already under negotiation. And in a bid to raise its profile amongst users of workstations from those companies it hasn't snared with its X.desktop manager yet, in the UK, IXI has signed-up London-based Unix workstation value-added reseller, Protek, to distribute its software on Sun Microsystems Inc and Hewlett-Packard systems.

TRANSARC REVEALS ENCINA OLTP

Also at OSF's DME announcement - see page five, Pittsburgh, Pennsylvania-based Transarc Corp launched its on-line transaction processing monitor and toolkit for heterogeneous networks of client/server Unix systems, which will ship next February, (UX No 316). Encina 1.0, an initial raft of six products, is built upon DCE. IBM says it will integrate the software with its CICS transaction processing system for AIX, Stratus will use Encina both on its FT Unix implementation, and on its proprietary VOS environment. Hewlett-Packard will implement the stuff on its Unix and proprietary lines, and Oracle Corp is to integrate it with its database technology. Sybase, Ingres and Informix will develop interoperability between their respective databases and Encina: Transarc claims there are already ten sites using the technology, including Citibank in the US. Encina source code will be available for the HP 9000, IBM RS/6000, Digital DECstations and Sun Sparcstations - prices go from \$25,000 to \$75,000 for the individual components.

AT LAST: OKI DELIVERS i860 BOXES

The much-postponed announcement of Okidata Microsystems' SVR4-based Intel Corp i860 machine (UX No 321, 325, 339), first previewed almost a year ago (UX No 302), finally happened last week. The 7300 series of workstations and servers is slated to be sold through VARs and large systems integrators targeting Oki's four selected market segments: document image management, decision support, computer-aided publishing and geographic information. The company says there are now close to 100 software packages, provided by unidentified third parties via Oki arrangement, available for the machine besides ones coming out of the Mass860 effort. Originally pegged as the 45 MIPer (UX No 302, 319), the company now says it can wring 64 VAX 11/780 MIPS, 30 SPECmarks and 9.3 MFLOPS out of her. The family currently consists of three workstations and an entry-level server. The line starts with the \$8,000 40 MIPS 7310 diskless workstation running a 25MHz 860 with 12MB cache, 8MB systems memory expandable to 64MB, a 19-inch greyscale monitor and 8-bit graphics support with 2MB display memory. The desktop 64-MIPS 7320 is based on a 40MHz chip and comes with a basic 16MB internal expandable to 64MB, 200MB hard disk expandable to 400MB, 1.44MB floppy and 16-inch colour monitor. Configurations are priced between \$14,000 and \$24,000 depending on factors such as a 150MB cartridge tape, 660MB hard disk and monitor. The 7330 includes all the standards and options of the 7320 plus an EISA bus, 24-dot graphics adaptor with 6MB display power and add-on SCSI. It goes for between \$15,500 and \$31,100. The top-end 7335 adds 32MB systems memory, 400MB hard disk and external storage expansion module at prices from \$26,200 to \$39,700. The units support X Windows, Motif, Open Look, Ethernet and TCP/IP and come with NFS support. They start shipping this month with options and other configurations becoming available over the next 90 to 120 days.

SCO "TO OFFER SVR4 COMPATIBILITY" - NEW INTEL COMPATIBILITY STANDARD

The Santa Cruz Operation Inc - in the US at least - is now talking publicly about offering full Unix V.4 compatibility in its system software products from next year. Up until now, SCO, which is developing the bundle of Unix software and services, Open Desktop, which will run on the Advanced Computing Environment's hardware architectures, has steered clear of committing itself wholeheartedly to the Unix International camp, having one foot firmly rooted in the Open Software Foundation. It is a renewed effort to develop an Intel Binary Compatibility Standard, iBCS, for Unix applications on Intel Corp platforms that has started the chatter all over again. In August last year (UX No 297), SCO, Unix System Labs, Intel Corp and Interactive Systems Corp agreed to define and support a common binary application specification for Intel 80386 and 80486 platforms. Much hard work later, version 1 of iBCS was scrapped, because SCO's Unix offering included proprietary pieces of code that made it incompatible with USL's Unix SVR4 that was coming on to the market. A new effort, begun after Uniforum '91 earlier this year, including the Open Software Foundation too - but minus it seems prospective SunSoft subsidiary, Interactive - has come up with iBCS version 2. It will ensure binary application compatibility and migration between SCO-based SVR3.2, Unix SVR4 and OSF/1 on the 80386 and 80486. SCO says it already adheres to the spec. USL will include it in SVR4 early next year - OSF sometime later. SCO will release a new version of its operating system early next year, the firm said.

DEC, MICROSOFT, COMPAQ ADOPT SILICON GRAPHICS LIBRARY

Digital Equipment Corp, Microsoft Corp, Compaq Computer Corp and Intel Corp came together in San Francisco last week to announce that they were supporting Silicon Graphics Inc's three-dimensional Iris Graphics Library as the Mountain View company opened up the technology, previously licensed only to IBM Corp and Microsoft, to all comers. DEC and Silicon Graphics will also work to combine the Iris library with PHIGS to create a new standard, and will try to persuade all the other Advanced Computing Environment consortium members to adopt it as well. Microsoft is also planning to use the Iris Graphics Library in its Windows NT. The Graphics Library is a set of 440 software commands that tell the computer how to perform a range of three-dimensional graphics tasks: Silicon Graphics claims 1,400 applications already developed to take advantage of its technology.

PUTTING THE PIECES TOGETHER - AN INSIDE LOOK AT THE OSF DME

Although choosing technologies from a range of vendors may help OSF politically, it causes major problems in integrating products and research work developed independently into a coherent whole. The Foundation's task is now to take the chosen products apart, and re-build them so that they fit together. Having learnt from its experiences of melding together technologies in DCE and even OSF Motif, OSF's VP of engineering Roger Gourd says that this time they will be more up-front design review and code assessment: "People may notice a slower start, but it'll be a better end", said Gourd. Because at first glance many of the technologies appear to overlap - Tivoli and HP, for instance, both confidently assert that their respective components - WizDOM and Open View - provide the core of the DME framework - it may be useful to identify where each product sits within the Foundation's diagram of the DME architecture (electronic subscribers should call either OSF or Unigram.X for a faxed copy).

DME applications - industry will add the value

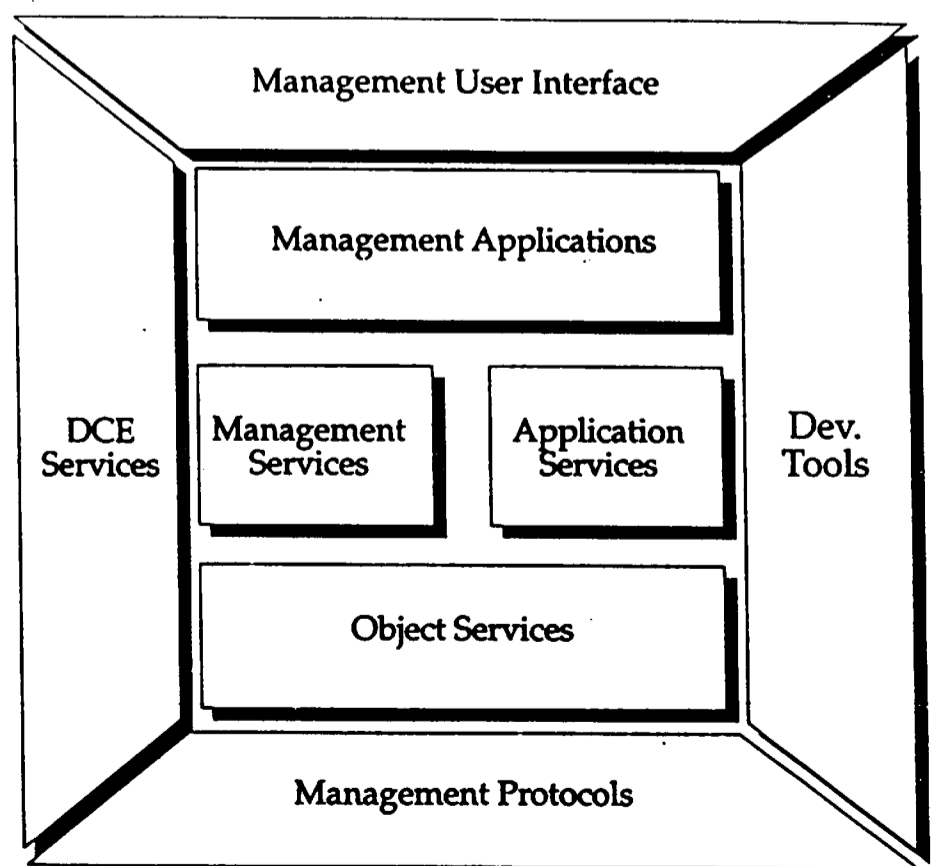
To start from the centre, the **management applications** currently cover configuration and host management from Tivoli, software installation, distribution and network licensing from Hewlett-Packard and Gradient, and distributed print services from the MIT Athena project. Independent applications are likely to move into this slot over time, and it is the key area where OSF hopes the industry will extend and add value to DME. Tivoli, for instance, is already working on applications for the basic administration of hosts, users and groups, security management, printer, mail and file system management, and there are plenty of other areas to be covered. OSF says its intention here is to offer only the fundamental services. **Application Services** are the programming interfaces that support these applications, and all should be accessed through the **Management User Interface**. This complies with the OSF/Motif style guide and includes a graphical Dialog View interface and command line interface from Tivoli, supplemented with HP's Open View Windows to display network maps.

Objects are the foundation

The **Object Services** technology within DME controls the management of objects - which include both managed resources and management applications or their components, all encapsulated in objects. Tivoli's WizDOM framework includes a management request broker for accessing objects as well as an object dispatcher. HP's PostMaster gives access to standard management protocols such as the SNMP Simple Network Management Protocol (through TCP/IP) and the CMIP Common Management Information Protocol (through the OSI stack). IBM's confusingly named Data Engine, which comes out of a research project at IBM's Yorktown Heights, runs as an object under the Tivoli request broker's control, and provides programmers with the facilities to write multi-threaded, object-oriented programs. It shares the role of object server with Tivoli, and is said to be more suitable for long-lived management operations such as the monitoring of a system resource, rather than short-lived tasks. Services provide the basic building blocks needed for management applications. They include event management, handled by the Wang Laboratories Network Event Logger, developed for Banyan Systems' Vines network operating system, and supporting all the event types defined in the OSI management standards. It provides event services such as filtering, forwarding and logging information across a network, and supports MS-DOS. Tivoli offers directory services for remote objects, security and data management.

Management services and protocols

Management services are isolated into a separate layer to allow flexibility and customisation of concepts such as management collections and domains, management policies, class dictionaries and administrative roles. OSF offers, through Tivoli and Hewlett-Packard, "reasonable defaults", which can be customised locally and overwritten. On the outer layers now, the SNMP and CMIP **Management Protocols** come from HP, but there is also a specific management remote procedure included. Tivoli currently has its own proprietary RPC, and is working on integrating it with both the HP NCS and Sun ONC RPCs. The protocols are accessed through Groupe Bull's CM-API Consolidated Management application programming interface in the **Development Tools** segment along with two higher-level APIs for ANSI C (from Tivoli) and C++ (for IBM's Data Engine). The Bull work comes from an Esprit project, SMS-API, and was carried out with input from IBM and HP. Along with the directory services, CM-API uses the XOM X/Open Object Management specification to describe data structures passed into the API - a unified way to structure data. Tivoli's Dialog language and compiler and the Banyon/Wang Event language and compiler also fit into this category.



The losers - the ones OSF chose to ignore

DEC seems to be the biggest loser of those submitting technologies for DME: OSF turned to the IBM/Hewlett-Packard/Groupe Bull/Wang submissions in preference to the DEC/Microsoft combination, and DEC's only mention was as a supporter of the MIT Athena distributed print services submission. In its lengthy 48-page DME Rationale document, OSF says that it considered the DECmcc Director and Common Agent, the implementation of DEC's Enterprise Management Architecture, as an existing framework as a base for extension, but in the end decided that the integration option would provide more advanced technology. DECmcc currently has no support for distribution of the framework, is not scalable to very large distributed environments, and is difficult to scale down to small systems, said OSF. Nor does it lend itself to use the RPC easily. Other technologies considered, but not ultimately chosen, were British Telecom's Concert, MIT's Moira management environment for controlling and configuring networks, the Alliance OSI toolkit from Touch Communications and Siemens Nixdorf's SAX software administration for Open systems utility and Xprint distributed print system.

Sore loser NCR looks Down Under for alternative

NCR, let us recall, was a submitter to OSF's DME RFT and an obvious loser. The technology covered DOS management and was by report - since the stuff is not yet a product - pretty nifty. NCR told Unigram.X last week that it couldn't come to terms with OSF on the money. OSF said that although functionality was equivalent, the Gradient product provided a better path for integration with DME. NCR still intends to turn the work into a product. Meanwhile, NCR is believed to be cozying up to Australia-based Lionel Singer Corp for the purpose of incorporating the Aussie's family of systems management tools and utilities known as Ease into its 3600/3700 machines at the OS level. The Singer software does print spooling, backup, archive and restore, systems administration, job queuing and tape management. For its part, Singer, put out that Tivoli looms so large in the systems management section of UI-Atlas, reportedly wants Unix International and Unix System Labs to pay it some attention.

Vendors, software houses and users queue to endorse DCE

At the same time as its DME announcement, OSF also announced the general availability of its Distributed Computing Environment, DCE, for developing and running applications across heterogeneous computer environments - it'll begin shipping from the end of the year. Previously it has only been available in snapshot form to OSF members - OSF reckons to have sent out over 1,000 of these kits. Initial reference implementations of DCE are on IBM's RS/6000 box running AIX and DEC's MIPS Computer Systems Inc-based DECstation 3100 under Ultrix. A Unix SVR4 port for Intel Corp platforms will be out in six months, OSF said. DEC has promised full availability of DCE on its systems by next summer, with an early release set for the beginning of the year. In addition, it says it'll have versions for other vendors' hardware (probably Apple Macintosh and Sun Sparc workstations) by the end of 1992. Groupe Bull and HP will port DCE to their proprietary operating system environments - GCOS and MPE - as well as to their Unix implementations. Likewise IBM says it will release "core components" of DCE for the MVS/SA and OS/4000 operating systems, as well as for AIX. Hitachi, Siemens-Nixdorf, Stratus Computer and Transarc Corp also announced plans to incorporate DCE into their products, whilst software houses Banyon, Informix, IXI, Locus, Microsoft, Oracle, the Santa Cruz Operation and SAS said they would support the environment. Users already signed-up include Nippon Telephone & Telegraph, the European Economic Community, Unilever, Sanwa Bank, ARCO and Stanford University. Three copies of a full set of DCE source code, including object redistribution rights - subject to object license fees - costs \$150,000: without redistribution rights the price is \$15,000. Universities can take out a campus site source license for \$5,000. DCE can also be licensed as separate components. DCE Executive, an application development tool set is \$75. DCE Services - directory, security, advanced file system and X.500 - are priced from \$100 to \$500 depending on the number required. DCE Administration, tools which allows users to administer DCE from any client station, costs \$75.

Gradient puts DCE up under Windows for PC users

Small independent software vendor Gradient Technologies Inc of Hudson, Massachusetts, jointly submitted its PC version of the HP Network License System, NetLS, with HP, but was also chosen for its PC Agent and PC Event software components. PC Agent allows system administrators to access personal computers from a management station and perform remote functions and file transfer; and PC Event, which forwards error messages from personal computers to a management system. Gradient has also been working on a PC implementation of the Distributed Computing Environment, operating under Windows 3.0. It will offer a full client side of DCE when it is available in January for full peer access and interoperability on PCs. It comes via an applications developers kit containing dynamic link libraries, import libraries, IDL compiler, documentation and example program templates for application developers wanting to incorporate DCE into Windows 3.0 applications. The technology could be of interest to members of the ACE Consortium, given the Microsoft and OSF components within ACE.

DCE overshadows Boston DME rollout

Apparently the strategic and political importance of DCE is such that it dominated the Boston press conference convened ostensibly to discuss the DME just as it did months ago when OSF announced the OSF/1 operating system. The contest now is to see how widely dispersed it becomes. OSF founder Hewlett-Packard, whose technology riddles DCE as it does OSF's other big RFT selections, suggested to Unigram.X that Microsoft holds the key to its widespread distribution. OSF, HP said, is pushing harder for Microsoft, which already has a DCE source code licence, to adopt and mass market it. HP also privately speculated about how long Sun, particularly its new software subsidiary SunSoft, if it is truly independent of Sun's hardware business, can hold out against DCE. Estimations were that it would have to start accommodating it, guessing that it would be done in stages beginning with importing and exporting DCE files to ONC, then moving on to APIs. Similar convictions were voiced about SunSoft adopting Motif.

What price DCE?

Maybe it's the Open Software Foundation's non-profit status that made its chief Dave Tory reluctant to publicly detail such a gauche as money at last week's press conference but DCE ain't no free lunch. For royalty purposes, OSF divided DCE into client and server software. The client side, tagged DCE Executive, will cost an OEM \$75 per node for the first 5,000 nodes but obviously no one but the smallest OEM will pay that even if they adopt a billback approach. Most DCE resellers will probably fall in the 5,000 to 500,000 nodes category and pay OSF \$25 a shot. OSF has also aggressively anticipated quantities of 500,000 to \$1.2m (\$8 a node). Mind now all quantities quoted here are in systems per year with the clock starting when the first one moves out of the door. On the critical server side the software, dubbed DCE Services, has been divided up into directory service and security service priced at \$400 each and both necessary to the system. There is also the non-mandatory advanced file service, a dedicated file server for larger networks costing \$500, and X.500 for \$250. Annual discounts on volume orders here rate a schedule of their own: 1-500 full price, 501-5,000 10% off, 5001-20,000 35% off, 20,001-40,000 50% off and 40,001 plus 60% off. All servers can be lumped together to qualify for discounting. In addition, the DCE Administration tools package, allowing remote services from any client, goes for \$75 a copy or can be packaged with the Executive for a 20% premium over the Executive code fee. Being royalties, none of these numbers in any way reflect street prices, which will of course be set by each individual vendor. Possible mark-ups could range anywhere from three to fifteen royalties according to what OEMs were saying last week.

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US sources say a new US Department of Defense contract is due to be announced shortly, which will be one of the largest workstation and server procurements to date.

Although international computer companies are fond of touting market figures which show Europe and the rest of the world representing increasing proportions of their business - if not their revenues; Europe will once again play second fiddle to the US in a couple of weeks, when Sun Microsystems Inc and MIPS Computer Systems Inc roll-out their respective Galaxy multi-processing Sparc system and 64-bit R4000 RISC CPU technology: October 1 and October 2 are the dates for the European launches - the US press corp gets the stuff a day earlier.

Wang Laboratories is expected to start shipping IBM's RS/6000 box during the fourth quarter: the first will appear in Europe, where, it is reported, Wang is close to completing a port of some of its imaging software to the AIX system. US deliveries will start in the first quarter of next year. Wang signed an OEM deal with Big Blue back in June for the RS/6000, AS/400 and PS/2 lines, (UX No 339).

SCO's vice president of marketing, Bernard Hume, is to return to the UK after a year in the US: he will take up his old position of European marketing manager.

Miserable attendance at the Unix Open Solutions show in California earlier this month has caused its owners The Interface Group to cancel all plans for the 1992 version scheduled for March 17 to 19 in San Francisco: we've heard rumours they may try to set up some kind of Unix Pavilion at Comdex Spring next year just to keep their hand in.

Borland is taking a more prominent role in the Object Management Group - understandably considering its interests: Borland VP Gene Wang, general manager of its Language Business Unit is now on the board of directors.

Unix International believes that around 1.2m Unix systems will ship this year.

Cupertino, California-based Snitily Graphics Consulting Services has ported X11R5, the state-of-the-art release of X Windows, on to Unix 386 platforms and set an introductory price of \$500 with manuals; \$400 without. The regular price will be \$700 and \$600 respectively. A future goal is to provide Motif 1.2 once its released.

Under a Value Added Reseller agreement, MIPS has incorporated Systems Strategies communications software into its RC6000 and RC3000 boxes.

SunRiver has a new VGA line, the SunRiver Terminal family, said to offer "PC look and feel" at terminal prices. Designed to replace ASCII/ANSI terminals in multiuser systems, they communicate at 32 megabits a second over fiber optics or twisted pair. Full console graphics and multiscreen support is provided for applications such as Open Desktop and Interactive X11. Six models offer VGA colour or monochrome resolutions up to 1024 x 768 x 256 colour and one serial port with a parallel and second serial optional. Up to 17 users may be supported on a single multi-user CPU. Immediately available prices range from \$650 to \$1000.

Bushmaster, the low-end under \$10,000 HP Snake still missing from the pit, will join its cousin Cobra (720), King Cobra (730) and Coral (750) as the 710.

Quote of the week: "Atlas makes SAA look pragmatic." Necessarily anon.

The industry's weekly bible, Electronic News, now a mere shadow of its former self in its glory days, is changing hands for the second time in little more than a year: this time its on its way to Pat McGovern's International Data Group, publisher of Computerworld - and word is that another major publication that has seen better days, CMP Publications Inc's Computer Systems News - Systems Integration Weekly in all but name these days, and all the less interesting for it - has been given until spring to get the numbers coming out right.

With its eye on increasing levels of high-end business as the Advanced Computing Environment Consortium initiative matures, Compaq Computer Corp is re-vamping its distribution strategy, introducing a new category of resellers in Europe to focus on its high-end multi-processor systems: around 20% of Compaq's 120 or so UK resellers are expected to become "Compaq System Resellers" after an extensive course of training and accreditation to prove that they are capable of supporting users wanting to install complex networked systems.

Santa Cruz Operation Inc reports that its Unix System V/386 has now received Posix certification from the US National Institute of Standards & Technology and claims that it is the first hardware-independent operating system to receive certification - but hardware-independence is a relative term: it runs only on 80386 and 80486 kit.

Analysts worry that the transition Digital Equipment Corp is planning to the 64-bit Alpha RISC processor from the VAX will lead to at least a quarter and perhaps as much as a year's slowdown in business for the company as users stop buying complex instruction set VAXes while they wait to see the new machines: Electronic News expects that DEC will try to minimise the slowdown by offering generous trade-in terms to users prepared to take a late-model VAX ahead of the new family.

And, as well as a 60 MIPS workstation, DEC is reportedly developing mid-range machines that go up to 600 MIPS based upon its 64-bit Alpha RISC, hears Electronic News. Dubbed Lasers, they'll come with up to four 150 MIPS processors and will likely appear in the 1993 timeframe. High-end systems, code-named Yukon and Danube, won't be around until at least 1994, the paper believes.

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Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone + 44 (0) 71 528 7083. Fax + 44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335. Europe £370. World £380. New York bureau: (516) 759 7025. Tokyo bureau: + 81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, September 30-October 4 1991

Number 353

CONFIRMED - SUNSOFT TO TAKE INTERACTIVE'S PRODUCTS DIVISION

SunSoft signed a letter of intent late last Tuesday to acquire the Intel-Unix side of Interactive Systems from Eastman Kodak, as predicted by Unigram.X early in September (UX No 350). Terms were not disclosed. The signing was delayed slightly by the time involved rounding up all the executives needed to bless the essentially four-party deal. What SunSoft is getting is Interactive's Systems Products Division, the arm that develops and markets software for the Intel platform, a 200-person business said to be worth \$30m a year. It is leaving behind Interactive's Service and Technologies Division, the equally valuable custom software and consulting unit that will soldier on as Interactive. Instead, SunSoft will be licensing certain software technologies from the Service and Technologies Division as well as Kodak's Photo CD and electronic imaging wizardry. The companies declined to identify exactly what black arts these are. However, one Interactive official ventured that it involved "everything they need" to port Solaris. SunSoft expects the acquisition to accelerate its time-to-market with Solaris-on-Intel and help leverage it into the number two slot behind Microsoft in the operating systems game.

Novell "playing a mating game with Unix System Labs"

Interactive's motive in being acquired is simply to continue as a player, a position it doubtless would have forfeit somewhere down the road had it gone on alone. Informed sources said a secondary incentive impelling the pair's courtship, which apparently began in earnest round about July, was their detecting a "mating dance" going on in parallel between Novell and Unix System Laboratories. Some circles have concluded that Novell, on its own competitive track with Microsoft, would like to own Unix and may attempt to buy USL or at least control a bigger piece of it than its current 14%, a combination SunSoft and Interactive must position themselves against. SunSoft for its part at least wants to harness Novell's considerable distribution clout behind Solaris, an outstanding issue still on the agenda. The scenario is interesting for USL since it plays to its notions of becoming a BIG company, without seeming to alienate existing customers.

ICL BEATS IBM TO £200M UK MAINFRAME DEAL

There was dancing in corridors last week at ICL Plc as the announcement was made that the company had won a contract worth £200m over five years from British Gas Plc, beating fierce competition from IBM UK Ltd. The decision means that IBM and Amdahl Corp mainframes will be phased out of five of the 12 data centres that British Gas is consolidating to three. The other seven data centres already use ICL Series 39 mainframes running VME with the IDMS/X database and TPS transaction processing system - on which British Gas has now chosen to standardise for its customer billing and services systems. Aside from the pecuniary disappointment, IBM must also be wondering about its Information Warehouse strategy launched recently, which makes relational databases central to mainframe application development. Peter Frank, ICL's branch salesman responsible to British Gas says that the application was chosen that was most suitable for business needs - technological fashion was not a worry. For the kind of billing and service applications British Gas is running, hierarchical technology is appropriate because of the speed with which it can provide high performance, high volume transaction processing. Apparently the two regions that British Gas was most happy with were West Midlands and the South East - running the ICL kit that was finally chosen and South East. ICL said that the fact that VME is moving towards Posix and XPG3 compliance was an important factor, while British Gas hinted at further procurements to come for departmental-level systems, saying that "as part of its drive to open systems, British Gas will invite tenders for appropriate hardware, software and services to support the implementation of the strategy." No decisions on specific standards and technologies are expected in the near future.

HP HAS MORE SNAKES IN THE PIT

The sub-\$10,000 Bushmaster won't be the only new wriggler to feature in Hewlett-Packard Co's PA RISC workstation snakepit (UX No 352). According to sources, the firm is preparing to hatch several other low-end companions for Bushmaster, all of which - tilting at Sun Microsystems Inc - are said to be "embarrassingly fast." Details of the workstations will be revealed during a closed session at Adus/UK, the annual HP/Apollo workstation user society meeting, which takes place in Solihull, Birmingham, between October 17th and 18th. Press briefings are set for December, with product announcements due in January next year. HP is already trying to cope with a huge backlog of orders for its existing Snakes - a shortfall of floating point parts from Texas Instruments Inc is aggravating its attempts to get them out of the pit (UX No 352) - and the firm expects a poor set of quarterly figures to reflect this combination of forces. However, if revenues are set to show a downturn, the order books are stuffed full, HP says. Its UK operation has now put in a revised order for Snakes that is some 200% above its originally estimated requirement, company sources are claiming.

MIPS TO DEBUT THREE R4000s

This Tuesday, MIPS Computer Systems Inc is hosting its latest media event for the R4000 chip, bolstered by the presence of five semiconductor companies. A source claiming to be non-disclosed said to expect three chips: a scaled-down version with no cache registering 40 Specmarks, a high-performance unit worth 60 Specmarks and a multi-processor version also rated at 60 Specmarks. Supposedly, an early version of Microsoft's NT might be on show and there may be talk from NEC of a faster 60MHz, 75 Specmark chip iteration that's probably some time out in the future, considering how hard it is to product 50MHz RISC silicon. They may also trot out faster R3000s, and is already said to be working on an R5000.

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NEWS ROUNDUP

The new Japanese distributor for **Lynx Real-Time Systems Inc**, **Nisshin Software Co**, is an independent software house with around 550 employees and projected sales this year of \$60m. It has a history of developing software as varied as personal computer operating systems, credit shopping and hotel systems, as well as hardware such as self-diagnosing systems. It will market Lynx as the only true real-time Unix in Japan - other products such as VxWorks from Kobelco Inc, and Xenix are restricted to Motorola 68000-based hardware lines.

Canon Inc has sold a **Floating Point Systems Inc Model 500S Sparc minisuper** to the National Genetics Laboratory, part of Japan's Ministry of Education.

In the UK, **Sun Microsystems Ltd** and **Universe** value-added reseller, **InfoTek**, have installed two new Sparcserver 2 systems running Universe's VMark Pick/Unix software at the Northwest Thames Regional Health Authority, in an order worth £500,000.

Data Entry Systems Ltd, Reading, Berkshire, has signed up to sell Herndon, Virginia-based **DMAC's Unibase** fourth-generation language data management system in the UK: available for most Unix platforms it is priced at £600.

Telephoto Communications Inc, San Diego, California, has a high-speed image compression and decompression product for Sun Sparcstations and compatibles: **Alice-SPC** uses JPEG techniques to reduce digitized image files at rates claimed to be 80 to 150 times faster than software-only solutions, takes up a single SBus slot, and costs \$2,495.

The latest edition of **Ashton-Tate's dBase 1V** for Sun supports the Sun Open Windows environment, including Open Look and Deskset: and Ashton-Tate has announced its first OEM agreement for the Sun product with Sun reseller **GNP Computers of Pasadena**.

Atherton Technology Inc, Sunnyvale, California, has a new version of its **Software BackPlane CASE** product for software developers using IBM, Sun and DEC workstations: version 2.7 of the product, claimed to be an integrated project support environment with its own data repository, GUI and version control and configuration management facilities, has increased configurability, improved workflow control and "accelerator buttons" that invoke shell-scripts with a single keystroke. Network licenses are \$3,995 per simultaneously active user, upgrades at no cost.

London-based **Microprocessor Developments Ltd's Sculptor** fourth generation language has been ported to **Motorola Computer Systems' Delta series 8000** of 8000 RISC machines.

Trio Ltd, Camberley, Surrey, is porting its software for the clothing and fashion industry to **Hewlett-Packard's 9000 series 800** systems in a joint development initiative with **Rosendale**, Lancashire-based Unix system supplier, **P&P Power Systems Ltd**.

Locus Computing Corp Ltd, Aylesbury, Buckinghamshire, has signed up **Wimal International**, Warsaw, to distribute its **MS-DOS-to-Unix** integration tools in Poland and other East European markets: Wimal is also working on Unix-based voting system and local government administration projects in Poland.

In the UK, **BBC Television** has ordered Unix accounting software and services from **Maidenhead**, Berkshire-based **Tetra Ltd**, as part of its move to open systems, in a deal worth £750,000.

Mountain View, California-based **Opus Systems Inc's** latest **Sparc-card Kit** - a Sparc add-in board which uses an AT slot to turn a personal computer into a dual-processor workstation - runs at 25MHz and performs 15.8 MIPS: it's now available in the UK from Sparcstation-compatible vendor, **MicroMuse**, London, and costs £3,500 with 8Mb RAM, SunOS 4.1.1, Motif, X-Windows, Ethernet, SCSI and a colour frame buffer.

McDonnell Douglas Information Systems has introduced three new software applications for the insurance industry known collectively as **Pro-Aegis**: they include point-of-sale and office automation facilities and run on the firms **Series X** Unix systems.

The **European Centre for Medium-Range Weather Forecasts** has installed a **Control Data Corp 4360-300**, **MIPS Computer Systems Inc R3000-based RISC** machine: it'll link-up with the Centre's existing **CDC Cyber** system and have links with its **Cray Y-MP/8**.

Wordperfect UK says that from the end of the year it will no longer sell version 4.2 of its word-processing software on Apollo, Arix, Encore, IBM RT and PS/2-AIX, Intergraph, Sequent Symmetry, Sun 386i and Sun-3, DEC VAX/Ultrix, SCO Xenix 286 and Bull XPS platforms. Support on these platforms will be discontinued after June next year - the firm says it is its policy to stop sales of WordPerfect 4.2 six months after WordPerfect 5.0 becomes available for those platforms. Wordperfect will focus on VAX/VMS, MS-DOS, OS/2, Apple Mac, AT&T 3B2, Sun Sparc, RS/6000, Xenix 386 and NCR platforms: VAX/Ultrix is dropped altogether.

Following **Silicon Graphics' decision** to offer its **Iris** three-dimensional graphics library to allcomers (**UX No 352**), **Du Pont Pixel Systems Ltd**, Weybridge, Surrey - formerly **Benchmark Technologies** - has launched a version of its **Iris GL** developers kit for **Intel Corp 80860 RISC** system vendors: the kit is a set of source code routines for the i860, but does not include an application programming interface - developers can engineer their own, or licence one from Silicon Graphics.

The **Santa Cruz Operation Inc** has begun shipping its **OmniPage** optical page recognition system for **SCO's Unix** system software: it enables users to scan documents, and perform editing and retrieval tasks using a variety of applications. **OmniPage** was developed in conjunction with **Caere Corp**, Los Gatos, California, it includes a scanner device driver, supports eleven languages and costs \$1,100.

A new report by **IDC**, Framingham, Massachusetts, estimates that the **X-terminal** market will grow at a compound annual rate of around 60% over the next four years, spurred mainly by corporate users and the growing number of applications becoming available. **IDC** says worldwide shipments of X-terminals reached 63,000 last year - valued at \$161m - it says this figure will climb to 600,000 by 1995, a market worth \$750m. The installed base at the end of 1990 was around 77,000: that'll reach 1.8m by 1995, **IDC** says, with a value of \$3,000m.

Microbytes reports that **Santa Monica**, California-based **Quarterdeck Office Systems' Desqview/X**, **X-Windows-to-MS-DOS** connectivity package will begin shipping later this month. **Desqview/X** can turn MS-DOS programs into X-Windows clients, allowing personal computer users to access Unix/X-Windows applications, and Unix users to access MS-DOS programmes running under **Desqview**. It'll cost under \$300, according to the firm: a networking package for **TCP/IP**, **DecNet** and **PC NFS**, will come in at \$150.

Corel Systems Corp, Ottawa, Canada, is now shipping version 2 of its **CorelDraw** graphics application for use under **OSF/Motif**: available on **IBM RS/6000**, **Data General AViiON** and **Sun Sparcstation** systems, it is priced at \$900 - £645 - and is marketed by **Frontline Distribution** in the UK: **Hewlett-Packard**, **DEC** and **SCO** ports will follow.

Locus Computing Corp has signed up **Santa Cruz Informatica** to distribute its **MS-DOS-to-Unix** connectivity software in Portugal.

Stardent Computer Inc has a software toolkit for creating chemistry-oriented modules that can be used with its **Application Visualisation System, AVS**: the **Chemistry Developer's Kit** costs £1,640 per user and is out this month. Meanwhile its **Oki-based Vistra 800** desktops are reported to be late, and won't appear until the end of the year.

Sun Microsystems Inc has joined up with **Dublin-based Horizon Group** to establish **Horizon Open Systems**, a sales, training and support centre for Sun workstations in Ireland that will be run by both firms: it's headed-up by **Samir Naji**.

In the UK, sports and leisure management system specialist, **Synchro Systems Ltd**, Stoke on Trent, Staffordshire, has completed a management buyout from its footballing parent, the financially troubled **North London-based Tottenham Hotspur plc**.

HP/APOLLO USERS GET DM LITE, AS HP REVEALS PLAN TO MERGE UNIX STRAINS

And, after two years of flack from Apollo Computer Inc system users - in fact ever since it bought the company back in April 1989 (UX No 227) - Hewlett-Packard is now getting around to addressing some of their outstanding requirements. As part of a plan to bring Apollo Domain/OS into the HP-UX and HP OSF/1 Unix operating system fold, HP will reveal what it is calling DM Lite, also at the Adus meet. DM Lite is a version of the well-liked object-oriented Apollo user interface display manager, previously a tightly integrated part of Domain/OS. Its point and click features and graphics functionality - which preceded many desktop environments only now coming onto the market by several years - will be made available as a front-end to HP's Motif-based Visual User Environment, with built-in hooks to the Open Software Foundation's distributed computing and distributed management technologies. HP's US salespeople are apparently pleading for consistency in the firm's long-term plans for its Unix operating system offerings - so that users won't have to shift from one environment to another every year - so HP is going to migrate the OSF/1 kernel into HP-UX, with VUE on top, in such a way that "one day HP-UX users will come into work and find they're actually using OSF/1, but won't know the difference," it says. As the two will be binary compatible, Domain/OS users will be able to move over to both HP-UX and OSF/1 in one fell swoop, and still retain their Apollo display manager via DM Lite. HP hasn't worked out a name for the combined operating system - it even may stick with both OSF/1 and HP-UX monikers, even though they will be more or less indistinguishable. HP says it will initially concentrate on getting porting tools out to software developers to bring applications over to the environment. Work on integrating HP-UX and OSF/1 will take at least 12 months, and the thing won't figure on end-user machines until 1993, HP says.

UNIX INTERNATIONAL CHOOSES ITS WORDS A LITTLE MORE CAREFULLY THIS TIME AROUND

Hold his toes a little closer to the fire, boys: that's what's in store for the Unix International executive who suggested last week that XVT Software and Neuron Data had something to do with the Unix System Laboratories prototype software that produces an independent look and feel supporting both Open Look and Motif at runtime (UX No 352). The truth about the demonstration toolkit previewed at the Atlas roll-out is that the stuff is all USL's own work, though it had chatted with those companies about it some months ago. USL says its technology does similar things to the XVT and Neuron stuff, but meets the requirements in a better way. Unix International says it did look at XVT and Neuron as potential partners in the Atlas effort, and now says it hopes that the two will provide their own solutions - "because Atlas is about choice."

NOW OKI SIGNS TO DO HEWLETT RISC MICROCONTROLLER

Hewlett-Packard Co has signed another Japanese licensee for its Precision Architecture RISC in the shape of Oki Electric Industry Co - but Intel Corp, whose 80860 RISC is used in Oki's new workstations - need not panic yet: Oki wants to fabricate micro controller versions of the RISC for use in embedded control applications. Hitachi Ltd's first iteration of the Hewlett-Packard RISC is also a microcontroller. Oki plans to develop parts for use in telecommunications systems, automotive electronics and printers and says it hopes to have the first ones commercially available in 1993. The other licensee signed for the Precision Architecture RISC design is Samsung Electronics Co, Seoul, South Korea.

NORTH WEST WATER DEVELOPS IBM LINKS WITH MORE RS/6000s

The now privatised North West Water company is developing a relationship with IBM that could see it join Barclays Bank and Unilever as one of the UK's foremost RS/6000 sites. With around 30 of the boxes already, North West Water is expected to take on a further 100 machines which it will use for computer-aided design and project and resource management. Some sources have tipped the water company to be negotiating for up to 3,500 of IBM's AIX RISC boxes, although Richard Warrall, director of information systems there, admits only to having "significant discussions" with IBM. North West Water, which has around three million household customers, is embarking on a massive programme of redevelopment, urgently required, it says, because of years of neglect.

SUPERSPARC COULD BE A YEAR OUT...

SuperSparc (UX No 348), the fabled Texas Instruments Inc "Viking" chip that's not going to appear in the multi-processors Sun Microsystems Computer Corp announces this week, has started sampling. How quickly it will become commercially available is another question, depending on how functional the samples are. If lucky, the TI/Sun collaboration could be in production in a few months but a part as complex as the now rechristened SuperSparc, with 3.1m transistors squeezed on a wafer, could take another six months or a year, hard lines for Sun if it's to meet the challenge of Hewlett-Packard's 76 MIPS boxes. Neither Sun nor TI have been specific about Viking's performance, believed to be at least 60 MIPS to 80 MIPS.

...WHILST AFE PULLS SPARC PLUG

The Sparc camp is shy another follower, its second known loss since Opus decided to downplay its clone business (UX No 343). After looking closely at the margins it could fetch and the competition it would have to endure from Sun, UK-based AFE Technology is pulling in its horns and shelving AFE Computers Inc, the commercial US and European Sparc compatibles operation it had intended. Unlike Opus, AFE is also forswearing the commercial value-added market. Reportedly it can't get the large many-gated graphics chip Fujitsu was to fabricate for an AFE graphics accelerator card working. According to AFE chief Alan Avansl, AFE Technology will continue to supply Sparcettes and embedded Sparc card into the more specialised industrial marketplace.

IBM'S BOTTOM-END RS/6000 DELAYED YET AGAIN, TO FIRST QUARTER 1992

As suggested last week (UX No 352), IBM Corp has postponed yet again the introduction of both the so-called "RS/5000", its much-anticipated low-cost low-end addition to the RS/6000 line, and also new high-end RS/6000 models until "early next year". Gossip had been flying for a couple of weeks that the machines, which were most recently scheduled for next month, might be delayed again, and it seems the primary reason rests with faulty design of the basic chip, an intermediate step in shrinking the Power PC, IBM wants for its Apple venture. Specifically, the problem was in the timing of the I/O device, a hurdle now reportedly overcome. The corrections, however, stalled testing which is now the factor reportedly responsible for the delay - that and the fact the chip has apparently lost its place in the queue, being fabricated by a still unidentified third party. IBM apparently has the Power architecture down to a single CPU chip but it still needs auxiliary items. Presumably the overall setback is a hiccup for the IBM/Apple venture. IBM is now expected to debut the thing in the first quarter of next year, however it is a serious handicap for IBM not to have a bottom-end machine: the marker price for Sparcsystems is right down to \$4,290, which means that IBM will either have to price the machine well below the figure it had planned or it will be uncompetitive - meantime, the company can't fill current volume orders, although an obvious solution would be to reconfigure the existing bottom RS/6000 model and slash the price on it.

MICROSOFT, HEWLETT TEAM ON OBJECT LINKING AND EMBEDDING

Nothing should come as a surprise in the present climate of endlessly shifting industry alliances, but an eyebrow or two may be raised by the news that Hewlett-Packard Co, so irked by Microsoft's negotiating stance on object-oriented technology that it turned to arch-rival Sun Microsystems Inc and agreed a partnership, finds that it does still have some pressing object-oriented interests in common with Microsoft. Last week the two companies announced that they were co-operating in the future design of Object Linking and Embedding for Microsoft Windows, to will ensure compatibility between Windows and HP NewWave, bringing the features of NewWave to Windows-based applications without requiring a separate development effort - up to now, developers have had to write additional code to enable Windows applications to take advantage of NewWave: there will now be a single development path for Windows and NewWave applications. Hewlett plans that the next release of NewWave will support OLE 1.0, enabling server applications that use OLE to run with NewWave.

HYPERDESK LIFTS THE VEIL ON THE ELEMENTS THAT MAKE UP ITS OBJECT MANAGEMENT SYSTEM

by Katy Ring

Joe Forgione, a vice-president at Westborough, Massachusetts-based HyperDesk Corp was recently in the UK looking for potential partners in Europe and for a place to set up a European office. While he was in London he took time out to speak to our sister publication *Computergram International* about his company's as-yet unnamed product as well as about developments at the Object Management Group where his company is working with Digital Equipment Corp, Hewlett-Packard Co, Sun Microsystems Inc, NCR Corp and Object Design Inc to create an object request broker.

HyperDesk's product will be in direct competition with Sun Microsystems's Distributed Objects Everywhere, which is part of the Solaris bundle. HyperDesk's product is an object manager with an object-oriented database back end and an ObjectSQL front end. It works with any operating system and either relational or object-oriented databases. It enables applications such as executive information systems to gather information from a wide variety of sources, and, furthermore, its main advantage over existing procedurally-written systems is that databases and operating systems can be changed without affecting applications. However, despite being in competition with Sun, Forgione is confident that the two companies may yet end up as partners. The reason being that although all of the above companies are collaborating to develop an object request broker, the result is not being cross-licensed so each of the contributors has either to develop the parts it has lacking or license those parts from a company that does have the relevant technology. Suffice to say HyperDesk and Sun are discussing the matter. The emergent object request broker has five parts: dynamic invoke, Interface Definition Language stubs, the ORB interface, Interface Definition Language skeletons and the object adaptor. Forgione says that as far as client applications are concerned, the first two components are the most important - HyperDesk and DEC have dynamic invoke technology, while Sun, Hewlett-Packard and NCR have Intermediate Language stubs. To be able to make use of the object request broker you need both. The problem all the companies have is whether to launch an initial version of their products before the object request broker is ready or whether to wait so that the first version their product is Object Group-compliant. However, as soon as the request broker specifications are published - and next January's UniForum show in San Francisco is the place where ORB is tipped to debut - application developers can take them and begin architecting their software so that once implementations of the technology are available they can buy them and start writing applications. So once all these implementations are available, how does the application developer choose one? After asking whether it is Object Group-compliant, a developer should consider how many environments a request broker implementation supports. For example, Sun is very much a Unix vendor, so it will concentrate on that market. Other participants, such as DEC and Hewlett-Packard have their proprietary user bases to consider and will presumably concentrate on a marriage between these and Unix. Meanwhile, HyperDesk as the only independent software vendor in this bunch, has designs on providing a Windows version. HyperDesk knows it can implement an object request broker with a 32-bit operating system, such as Microsoft's New Technology, but can a partial broker be implemented for a 16-bit operating system? DEC is focusing on a narrow set of applications in the software engineering market so that within its Cohesion strategy it can capture applications and integrate them with the object request broker. The really interesting question is whether vendors beyond those contributing technology to the broker will take it up and use it. Nobody is sure what IBM Corp is up to as it seems to be developing its own object broker with Apple and it is unclear whether this will be Object Group-compliant. Meanwhile, Microsoft is attempting to dispense with the need for an object broker by offering a single operating system with Windows 3.0 - although some object broker functionality will have to be embedded in the New Technology filing system in order for it to cope with alien applications. The use of the single operating system is basically the idea behind Bill Gates' Information at Your Fingertips strategy.

"Controlled by Bill Gates"

However, as Forgione commented, that strategy is all very well as long as you remember that the "hands, legs and arms are controlled by Bill Gates". As he sees, it the best early market opportunities for implementations of object brokers are to bundle them with developer tools, such as those provided by Borland. Software engineering tools vendors offer another opportunity as they may want to integrate their CASE packages with other types of software. In the longer term, Forgione expects a whole new sales channel to emerge as integrators or value-added resellers take generic components and assemble them into specific applications.

IBM CHOOSES ONTOS AS ITS MULTIMEDIA OBJECT DATABASE PARTNER

IBM Corp seems to be trying to be as even-handed as possible in its relationships with its two favoured object database partners, and after signing Servio Corp for its Gemstone for manufacturing applications the other day, it has turned back to Burlington, Massachusetts-based Ontos Inc, already an IBM Business Partner with its Ontos DB on the RS/6000 and the PS/2, naming the company as an Industry Application Specialist for the multimedia market. Ontos and IBM will jointly offer the Ontos DB on a national US level, primarily for the PS/2.

SUN/INTERACTIVE: SCO SAYS "IT'S FINE"

Asked to comment on the Interactive/Sun tie-up, opposition leader Larry Michels, founder of SCO, said: "it's fine for us. It sort of puts Interactive a little out of its misery. They've been doing a lot of contract work for Sun anyway...there was no future in this side of the business for Kodak...it shows no product continuity on Interactive's part (having gone from Unix V 3.2 prematurely to SVR4 and now to Solaris, a quasi V.4). We remain the only vendor-neutral house and that's what people want. And we don't believe SVR4 has won. [SunSoft's competition] isn't going to make our lives more miserable. The world will be a little tougher but it's also going to be bigger."

ACE CARDS

LSI Logic, Milpitas, California, has a new version of its MipSet R3000A core-logic RISC chip set which complies with the Advanced Computing Environment's ARC hardware specification. The simplified, low-cost implementation of the MIPS CPU is being aimed at ACE members and personal computer manufacturers with limited system design resources available. The eight-chip, 25MHz set costs \$558 for 1,000-up.

And ACE is also reported to be taking on-board a new serial bus for connecting peripherals to computers into its Advanced RISC Computing specification. Called Access, the bus has been jointly developed by ACE member DEC, and Phillips/Signetics, and the firms expect to have an Access industry group in place by the end of the year. Access doesn't require new silicon because it builds upon the hardware protocols of Phillips/Signetics' IC interchip bus developed in the early 1980s. As a result, costs are reduced and Access is expected to cost around \$11, compared to around \$54 for a common RS232 port.

Microsoft Corp's vice president of systems software, Steve Ballmer, says 16-bit Windows applications will be able to run on both the Intel and MIPS versions of its Windows NT operating environment: binary compatibility for existing Windows applications running on both platforms will be provided by Insignia Solutions' SoftPC emulation software that Microsoft recently licensed (UX No 347). However, new 32-bit applications written for Windows NT will not be compatible across the two platforms: developers will have to set a compiler switch that will generate either Intel or MIPS enabled code.

HEWLETT-PACKARD TO PLUNDER SYSTEM 36 BASE WITH RACONIX CONVERTER

Hewlett-Packard Co has joined the battle to try to persuade IBM Corp System/36 users to convert to Unix, and has enlisted Raconix Corp to the cause. Raconix has a program called U/3X designed to convert System/3X and AS/400 family software to run under the HP-UX implementation of Unix. Under the relationship, Raconix will supply its U/3X software, conversion training, support and on-line documentation and Hewlett-Packard will provide marketing and technical support through its sales force and network of value-added resellers. Raconix's re-engineering technology is claimed to convert 36 code into source code for a Unix system "in a matter of days" and converted applications can incorporate a user interface that is the functional equivalent of the 36 and an optional developers package enables continued systems development in the 36 environment. No word on prices, or whether the facility is limited to RPG II applications.

CADNETEXES FORM NEOCAD TO DEVELOP FIELD GATE TOOLS

The sale of Daisy/Cadnetix to Intergraph Corp left several executives of the company high and dry, but rather than sit around and mope, a gang of them have hung out a new shingle in Boulder, Colorado bearing the name NeoCAD Inc. The new company has been formed "to address the need for high-performance design tools for the fast-growing programmable technologies markets". The first product will be what is claimed to be the first set of device-independent tools specifically for the design and layout of field-programmable gate arrays. The three founders all came from Cadnetix, and their track record was enough to convince Institutional Venture Partners and Hill, Carman, Kirby and Wash to put up \$2.5m in first round venture capital funding for the embryonic company.

ACT LOGSYS SIGNS ON AS SCO UNIX SYSTEMS INTEGRATOR

The Santa Cruz Operation Inc is setting out to strengthen its European distribution channels to large scale public sector and utilities procurements by striking up a deal with systems integrator ACT Logsys, part of the ACT Group Plc - claimed to be the first such relationship in place. Santa Cruz European managing director Lars Turndal said the co-operative agreement, under which ACT will supply, integrate and support Santa Cruz Unix operating systems and products, should be viewed as a new tier of distribution alongside the distributors, dealers and OEM channels Santa Cruz already has in place. "Distribution has always been our problem", said Turndal. "PC manufacturers and distributors do not always have the necessary skill sets to put it all together." Hemel-Hempstead-based ACT Logsys will work direct with Santa Cruz or through an OEM customer or distributor to develop and package the technology into a turnkey system: it is already working with the Employment Department on the £2.4m Mascot project, and has 10 more "sizeable" procurements in the pipeline. ACT has a similar deal with OSI communications specialists Retix Corp for OSI on Intel kit and local networking outfit Syntax Inc.

SOFTWARE COMPONENTS TO MARKET CHORUS MICROKERNEL FOR EMBEDDED SYSTEMS

Chorus Systems, the microkernel company, is now talking openly about its nine-month-old alliance with San Jose, California-based Software Components Group to produce and sell binaries of the Chorus/Mix distributed operating system - a move which marks the emergence of Chorus from technology to product. SCG licensed Chorus source and is enhancing it with an interface to its own proprietary real-time pSOS OS for what it calls the "soft embedded" real-time market. Anticipated applications include industrial automation, simulation and telecommunications. SCG will sell the product in North America, Chorus in Europe. The pair expect their joint efforts to generate revenues of \$100m a year in three to five years. First product is expected to hit the market in late first quarter, leveraging off of SCG's base of sophisticated end users and moved through its direct sales channel. Initially the software will be available for the Motorola 68000, with a Sparc implementation likely to follow. Other ports such as the MIPS chip are under consideration. Nine-year-old SCG specialises in the real-time embedded operating system market, doing \$9.7m a year and experiencing a 70% a year growth rate.

ORACLE WINS US VALIDATION FOR SQL STANDARD FOR ADA

Oracle Corp reckons that its relational database is the first to be validated by the US National Institute of Standards & Technology for compliance with the Government's SQL Standard for the Ada programming language - but then it is the first to have been tested for SQL conformance. Oracle was also validated under three Unix operating systems - SunOS, HP-UX and DG-UX to complement the validation under VAX/VMS completed earlier this year - using both the current release, version 6.0, and a version of the next release, version 7.0, with the first exceeding the 90% compliance score required in many Federal procurements, and version 7.0 showing 100% score on the nearly 400 test cases in the full SQL Validation Test Suite, including the optional Integrity Enhancement Feature: declarative referential and entity integrity. They were validated to Level 2 of the ANSI SQL89 and Embedded SQL standards.

APPLE SAYS PINK IS NEARLY READY TO GO AS IT, IBM DISCUSS THEIR RATIONALE

Apple Computer Inc chairman John Sculley and IBM Corp personal computer chief James Cannavino shared a platform at a conference in Laguna Niguel, California last week and discussed their proposed alliance, according to the New York Times making it clear that neither partner saw any prospect of a resumption of growth in the personal computer market without fundamental changes. Executives from both companies reportedly acknowledged that negotiations had been going more slowly than expected, although they insisted that final terms were now near. Apple also surprised the assembly by saying that first commercial products from the alliance might appear rather sooner than expected: Sculley said that the Pink operating environment now comprised more than a million lines of tested code and that it might start appearing on products ahead of anything coming out of the proposed jointly-owned IBM-Apple company. "The main message is that Pink is not a research project," he said. Sculley also confirmed that for Unix, Apple would be switching to IBM's AIX implementation - or one of them. Separately, InfoWorld magazine reckons that IBM and Apple will name Apple senior vice-president of object-based systems, Ed Birss to be chief operating officer of their proposed joint venture company while Metaphor Computer Systems Inc president David Liddle is tipped to get the overall top job.

IBM PICKS THINKING MACHINES AS ITS PARALLEL PAL

Echoing Digital Equipment Corp's tie-up in massively parallel processing with MasPar Computer Corp, IBM Corp has turned to Cambridge, Massachusetts-based Thinking Machines Corp, agreeing a rather lower level alliance in which Thinking's Connection Machines will be able to be interfaced to IBM mainframes; DEC already has a agreement with Thinking Machines to link their respective machines. IBM will also make available "advanced technologies" to Thinking Machines - access to its chip design and fabrication technologies and its disk drives according to the New York Times. The two will also collaborate on parallel software, and the agreement will give Thinking Machines improved credibility among large corporate customers that vote the IBM ticket. IBM insists that the agreement will have no effect on its continuing alliance with Steve Chen's Supercomputing Solutions Inc in Eau Claire, Wisconsin. Bankrolled by IBM, that company is in process of designing multiprocessor supercomputers intended to be several times more powerful than anything available now.

DOLPHIN ADDS LOW-END TRITON

Dolphin Server Technology AS, Oslo, Norway, has added a new low-end box to its Triton series of Motorola 88000 RISC-based Unix servers. The Model 125 comes with a single 25MHz CPU, 8Mb to 32Mb memory, 520Mb disk, Ethernet, four serial ports and SCSI. Prices start at \$16,670 - £9,650. The Norsk Data AS affiliate has signed up Kode Computers Ltd, Swindon, Wiltshire, to sell its boxes in the UK: it has other outlets in Germany - IBZ Digital Production, Frankfurt - France, the Far East and South America. Dolphin will be using Motorola's next generation 88110 chip in future products, though it hasn't had samples yet.

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Although SunSoft is acquiring Interactive's people and business, who exactly that involves still hadn't been decided last week - even insofar as Ajit Gill who runs the division and Ron Lachman, who is regarded as the architect of the deal. However, collaboration on Solaris-for-Intel began in advance of the agreement in principal and that piece of paper will now allow the companies' separate development teams to be combined. Both companies were reluctant to detail product strategy before the acquisition is complete. For the time being it appears that Interactive will continue to distribute Unix 3.4 and act as USL's principal publisher for SVR4. However, down the road a migration policy will kick in to move Interactive's customer base to Solaris, a re-direction USL top management, privy to the discussions, has signed off on. The Interactive takeover automatically propels SunSoft to number two position in the Unix/Intel market after the Santa Cruz Operation, whose 55% share, as counted by IDC, is now jeopardized by the entry of a larger financially resourceful competitor. As part of its dowry, Interactive is bringing SunSoft an installed base of close to 100,000 and unfilled government orders of around 120,000 units.

Late last week, the US government's General Services Administration's Board of Appeals ruled in favour of IBM and Lockheed in their prospect of the award of the \$1,400m TMAC Treasury contract to AT&T and Computer Sciences Corp for 3,200 Pyramid machines (UX No 343). Oddly enough, however, the board did not overturn the mammoth award. Instead it asked the Treasury Department to submit an additional cost justification analysis to support the AT&T win. AT&T was not the low bidder.

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Taking a leaf out of AMD's book - not to mention Chips & Technologies, NexGen, Cyrix and VM Technology - Taiwan's United Microelectronics Corp is now threatening to clone Intel Corp's 80486, claiming it can have something on the market by 1993. That chip would be based on Meridian Semiconductor's board-level emulation, the US firm where UMC has a stake.

Unix System Laboratories Inc has opened a new office down under in Sydney: it will support New Zealand, as well as the Australian marketplace, and is headed-up by Chris Schoettle, who reports to James Clark at USL Pacific in Tokyo.

The object-oriented can rejoice now that their work is starting to get recognition outside the industry: the technology and some of its practitioners made the cover of the September 30th BusinessWeek.

The leader of MIPS' ballyhooed R4000 project, Tom Riordan, director of VLSI design, verification and test, has resigned, apparently with plans for a start-up though he's said to be still consulting with MIPS.

Microsoft Corp's vice president of systems software, Steve Ballmer, says 16-bit Windows applications will be able to run on both the Intel and MIPS versions of its Windows NT operating environment: binary compatibility for existing Windows applications running on both platforms will be provided by Insignia Solutions' SoftPC emulation software that Microsoft recently licensed (UX No 347). However, new 32-bit applications written for Windows NT will not be compatible across the two platforms: developers will have to set a compiler switch that will generate either Intel or MIPS enabled code.

Electronic News reminds us that DEC's acquisition of most of Philips Electronics' computer business (UX No 344), means that the Open Software Foundation has lost another of its funding sponsors, leaving it with just six of the original nine backers who signed on the dotted line back in 1988. Apollo and Nixdorf have already dropped out following their respective acquisitions by Hewlett-Packard and Siemens, and OSF says it hopes to make up the difference through increased licensing of its Motif and Distributed Computing Environment technology, on the way, its says, to becoming self-sufficient by 1993.

Following on the heels of Hewlett-Packard OpenView's OSF DME win comes news that wide area network provider, Network Equipment Technologies, has licensed OpenView Network Node Manager 2.0, the company's network management software. Using this technology, NET has developed NET SNMP Manager, network management software for the SparcStation environment. IBM licensed the technology back in April. NET's product allows a network administrator to configure, troubleshoot and monitor performance of multivendor TCP/IP networks from a single workstation, accessing both local and wide area nets.

IBM Corp and Apple Computer Inc plan to announce that definitive agreement has been reached on their proposed joint venture to develop and market a next-generation desktop operating system in California this Wednesday, according to the Wall Street Journal, which cited "people familiar with the plans" of the two firms.

Wall Street seems to be estimating the business the Interactive division SunSoft is buying at only \$20m to \$22m. Our \$30m figure - see front page - comes unofficially from inside Interactive.

IBM UK, located mid-way between the high culture of the South Bank and Waterloo Station's bohemian arches, is carrying on the time-honoured tradition of community involvement: the company says that people of all ages, backgrounds and types are to be found among the homeless, and since 1988, IBM South Bank has developed a programme that includes cash donations to needy agencies, training for the young and donations of food and clothing; however, top of the list of IBM's help to the homeless is a courtesy car to Waterloo for employees; does this mean that IBM is sparing its dwindling staff the reality of poverty and the need to run the gauntlet of the notorious sunken roundabout whose informal residents have been grimly trying to burn down Waterloo Bridge, or is it an attempt to prevent them swapping reminiscences with the "literally disappearing employees" that general manager Nick Temple proudly boasts of at the drop of a hat?

October 9th is the date that the Laddis Group, yet another consortium, this time of Network File System vendors, meets to introduce what it says is "the first vendor-neutral standard NFS benchmark for measuring file server performance and capacity". Laddis includes Legato systems, Auspex, Data General, DEC, Interphase and Sun Microsystems. The announcement will be made in San Jose during the Interop '91 show.

Sequent Computer Systems Inc is expected to announce an agreement with Novell Inc within the next few weeks, according to industry sources: the deal would provide NetWare users with a high-performance parallel processing network server. Other developments in the pipeline from Sequent, currently facing hard times because of the poor performance of OEMs such as Unisys Corp, include the doubling of processor clock-speed to 50MHz 486s on the Symmetry range, and a significant boost to input/output performance.

And Sequent's recent shifting of emphasis towards the Open Software Foundation Unix camp (UX No 352) is being interpreted as highly significant by some gossips, despite the company's insistence that it is not de-emphasising its links with Unix International and Unix System Labs.

Bipolar Integrated Technology says is now free to ship its implementation of MIPS Computer Systems Inc's ECL R6000 RISC part to customers other than MIPS itself: industry sources see the move as a sign that the Beaverton, Oregon-based chipmaker has now overcome the ECL manufacturing problems which plagued it for over a year.

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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(CBW)

The weekly information newsletter for the UNIX ® community worldwide

London, October 7-11 1991

Number 354

UNIX SYSTEM LABS HOLDS SOME OF THE ACES: PLAYS THE SVR4 CARD...

One of the year's high-stake poker games has been played over the last few weeks, with Unix System Laboratories sitting in the dealer's chair. Whether it's won a seat at the Advanced Computing Environment initiative's table will emerge over the next week or so, perhaps as early as Wednesday October 9th. The expected announcement, essentially dealing Unix SVR4 into ACE, will doubtless be delicately worded for political reasons. Nevertheless, it seems ACE is about to adopt a dual-kernel strategy on the Unix side, adding SVR4 to its existing Open Desktop-OSF/1-Ultrix choice. Importantly, for conformity's sake, and to shield independent software vendors from further confusion, differences will reportedly be hidden under a common shell of unifying application programming interfaces and a common desktop metaphor. Exactly whose desktop metaphor is being proposed remains unclear. USL has a metaphor of its own, following the Apple Macintosh model, written for the anticipated Unix Lite. The Santa Cruz Operation Inc, on the other hand, the company responsible for designing the Unix-based Open Desktop for ACE, has been pushing IXI Ltd's X.desktop manager as part of the current ACE metaphor, much to the chagrin of ACE founder Compaq Computer Corp, which is known to prefer Hewlett-Packard Co's Visual User Environment as a front-end (UX No 348). Sources familiar with the latest manoeuvres stressed that a single desktop metaphor was now essential, but said a combination of several technologies could be a sensible compromise which could stave-off yet another round of in-fighting. Unix SVR4's formal inclusion in ACE, which may make the industry's struggle against the forces of Microsoft Corp that much easier, is of particular importance to the so-called Apache group, that dissident band of ACEs that has rejected any other operating system from the very beginning (UX Nos 328, 343), and includes AT&T Computer Systems, NEC Corp, Ing C Olivetti & Co, Prime Computer Inc, Sony Microsystems Corp, Siemens-Nixdorf Informationssysteme AG and Tandem Computers Inc. Compaq, which has had its differences with SCO, may not make much of the realignment publicly, but it is believed to want a foot in both camps. The strength of USL's hand, which includes SVR4's market acceptance and the backing of Apache, has been heightened by its anticipated distribution alliance with Novell Inc for the desktop (UX Nos 350, 353), a highly important resource no one else has been able to muster. As part of the realignment, USL will also likely join the roll-call of ACE members.

...AS ACE DEVELOPERS GET 60 SPECMARKS R4000 FROM MIPS

MIPS Computer Systems Inc - together with its five semiconductor partners - has duly unveiled a third-generation, 64-bit RISC, the R4000. The R4000 will be the backbone of the Advanced Computing Environment initiative's next generation of Advanced RISC Computing platforms. The 50MHz part, with 1.3m transistors, comes in three guises (UX No 353): the R4000PC, rated at 40 SPECmarks, supports primary on-chip cache and is a 179-pin grid array part targeted at low-cost desktop, low-end server and embedded implementations. The R4000SC, rated at 60 SPECmarks - for uniprocessor applications - comes with secondary cache, and is being offered in 447-pin grid array or land grid array configurations. It's aimed at high-performance desktops and servers. The R4000MC, again rated at 60 SPECmarks, comes with multi-processing features, secondary cache, and is available in 447-pin PGA or LGA packaging. Each has a 64-bit integer processor, 64-bit floating point unit, memory management unit, 8Kb instruction cache, 8Kb data cache, and control and management facilities for secondary cache. Clock speed will go to 75MHz next year, whilst a 100MHz part with 64Kb cache is slated for 1993. Furthermore - and as reported (UX No 353) - MIPS is already working on an R5000 successor. That'll incorporate superscalar technology, speculative and out-of-order execution, fewer branch and other delays, plus victim cache, which will reduce the duplication of tasks now undertaken by regular caching operations: no timescales were offered. Early versions of ACE's Open Desktop and Windows NT operating systems from Santa Cruz Operation Inc and Microsoft Corp were shown running on the R4000 at the launch: along with MIPS' own RISC/os Unix implementation. MIPS says the R4000's 64-bit functionality offers full binary compatibility for applications running on its existing 32-bit CPU implementations.

IBM, APPLE GO LIVE ON THEIR MAJOR COLLABORATION

The satellites were humming last week as IBM Corp and Apple Computer Inc invited the world to look in on the consummation of their nuptials. However the announcement was something of an anti-climax, because there were no major changes or advances on the outline agreement between the two companies. Details, pages four and five.

THREE NEW PLANETS IN SUN'S GALAXY

Sun Microsystems Computer Corp duly introduced its so-called Galaxy range of multi-processing Sparc RISC servers last week (UX No 350). The two and four-processor Sparcserver 600MP systems use pairs of 40MHz Cypress Semiconductor Corp Sparc chips mounted on modules which plug into the two Mbus slots housed in the cabinet (UX No 349). Models 630MP, 670MP and 690MP come with one or two modules and have a SPECthroughput rating of 50.9 - 57 MIPS - in two-processor configurations, a SPECthroughput of 91 - 114 MIPS - in four-processor arrangements: that's around four times the performance of the firm's existing top-end 490 server system. Estimated transactions per-second performance marks on the boxes are 121.5, 121.5 and 130 respectively, running the Sybase database, which translates to \$2,081 per-transaction for the 630MP and \$2,222 per-transaction for the 670MP, Sun says. The Mountain View, California-based workstation manufacturer has run into a number of well-documented hardware and software problems on its multi-processing journey, but the firm maintains that the Galaxy family is not the stop-gap measure that industry-watchers have been attributing to the launch in lieu of the delay in bringing systems to market configured around the superscalar, 60-80 MIPS-rated Texas Instruments Inc SuperSparc processor (UX No 353), a project which Sun is working on jointly with the chip-maker. Sun says 600MP system users will be able to upgrade to SuperSparc and other future Sparc implementations as and when they arrive. The 600MP servers run the Solaris 1.0 operating system launched by SunSoft Inc a few weeks ago (UX No 350), which includes SunOS with multi-processing extensions, Open Windows and the Open Network Computing environment. The Unix SVR4-based multi-processing Solaris 2.0 will be supported from the middle of next year. The machines, which ship in volume on December 5, are aimed squarely at the commercial market: Sun claims that some \$600m of its \$3.2bn-a-year business is now accounted for by its server products. They'll replace its existing Sparcserver 330, 470 and 490 systems, although users of these machines can upgrade to galactic status via board swap-outs, starting at £11,000 for a two-CPU module - plus the cost of a memory swap to the ECC arrangement that the 600MPs are configured with. A two-processor 630MP comes with from 64Mb to 128Mb RAM, 1.3Gb to 26Gb SCSI disk, five VME slots and 4 Sbus slots: it costs \$45,000 - £40,800. The two-processor 670MP comes with from 64Mb to 640Mb memory, 1.3Gb to 26Gb SCSI disk, 12 VME slots and 4 Sbus slots - prices start at \$60,000, £54,400. The top-end 690MP costs \$92,000, or £83,400, and comes with from 64Mb to 640Mb RAM, 2.6Gb to 52Gb IPI disk, 16 VME slots and 4Sbus slots. Four-processor configurations cost \$57,000 - £52,100, \$72,500 - £65,700, and \$104,000 - £94,700 respectively: 8 and 16 processor units are under investigation.

TERA AND WEITEK TEAM TO PROVIDE TECHNOLOGY FOR \$9,000, SPARCSTATION 2 COMPATIBLES

In an attempt to level the proverbial playing field, Sun this week is supposed to make good on its promises (UX No 343), to license its current hardware technology to cloners. Reportedly under the aegis of Sparc International, LSI Logic and chip newcomer Tera Microsystems will be the conduits for reselling the LSI-made 40MHz standard Sun has used in the SparcStation 2 for the past year and again more recently in the IPX. For a premium price, Sun's prized GX graphics accelerator will also be merchandised by LSI. Tera, on the other hand, will be pushing Weitek's more affordable graphics under a newly forged US/Europe/Far East co-marketing alliance the pair have arranged. As a result, Tera will essentially have two product lines: LSI's and its own microCore, a four-chip set including system, I/O, SBus and video display controllers (UX Nos 344, 347). The Tera-Weitek combine will allow these companies to talk about having a complete chip set once Tera's SBus and video display parts are ready in the first quarter of next year. LSI still lacks floating point capability. Tera and Weitek will be tout-ing their joint chip set - Weitek is bringing its Sparc CPU and graphics controller to the party - as cheaper, higher performing and better integrated than anything else available. Tera's integration cuts the number of chips needed to build a SparcStation 2 to twenty-eight down from the seventy Sun itself uses. According to Tera's calculations, a cloner could put a complete SparcStation 2-lookalike on the market priced 40% under Sun or \$9,000 versus Sun's current \$15,000 list. The \$9,000 figure includes a roughly 50% margin. The cost of the 40MHz, simulated 21 SPECmark Tera-Weitek chipset will be between \$700 and \$900 in volumes of 1,000-up, Tera said, with the 25MHz around \$600 in the same quantities. Apparently the companies do not intend to demand higher volumes for reasonable prices, a trap LSI fell into with its original Sparckits, creating bad blood among the cloners who bought at the 5,000-unit price and now have excess inventory that has also seriously devalued in the wake of LSI price cuts. Access to the basic silicon has been a serious stumbling block for the Sparcettes since they started to try to bring clones to market. Staying apace of Sun's performance - let alone exceeding it - has proved impossible for the lower end cloners without the technology to do so. Tera and Weitek are forecasting three possible market niches their technology could service: upgradeable colour SparcStation 2 with accelerated graphics, entry-level colour workstations and low-cost monochrome workstations. Notebooks are also mentioned. Tera has Interactive Service and Technologies Division doing a port of Solaris 1.0 to the device. Although this is the division SunSoft is leaving behind in its Interactive acquisition (UX No 353), it appears that its technology licensing agreement with Service and Technologies will give SunSoft rights to distribute the Tera Solaris. Neither Weitek or Tera are forecasting highly significant volumes from the cloners knowing that the real meat and potatoes order must come from Sun itself, a potential customer Tera must woo. The rumoured royalty Sun is reportedly demanding for its GX graphics technology is in the region of \$150 - and that's without the thing being built: a finished Weitek piece costs about \$160.

SUNFED HAS SECURE SunOS...

Like at a toddler's playgroup when one child starts to scream - the rest are almost certain to join the chorus - Sun Microsystems Inc's new siblings are all beginning to clamour for attention at once. Now Sun Microsystems Federal has introduced a secure offering, the SunOS Compartmented Mode Workstation operating system, claiming that it's the first secure implementation of distributed computing Unix operating system environment to be evaluated by the US government. SunOS CMW is targeted at government, intelligence, military and commercial Sparc system users. SunOS CMW includes the Open Network Computing environment, Open Windows, Open Look and DeskSet the suite of applications which encompasses a secure mailtool, calendar manager and file manager. The thing is now undergoing evaluation by the US National Computer Security Center and Defense Intelligence Agency for B1 Orange Book and CMW compliance. Production shipments will start in the second quarter - at \$3,000 per licence - and deliveries will include customers of the Air Force Computer Acquisition Center 308 contract Sun won earlier this year as well as some classified contracts it holds. Sun has Addamax doing documentation consulting and has licensed SecureWare's Max Six label conventions to make its stuff more interoperable.

...AS SUN DEBUTS SUNPIC UNIT

Sun Microsystems Inc also formally introduced SunPics - Printing and Imaging Computer Systems - the unit which will design and market technology for the printing and imaging marketplace. Its stuff will be based around Sun's page-imaging NeWSprint software, which is based upon the NeWS environment. The Postscript technology allows users to store fonts in a server rather than at the printer, so the fonts can be distributed to any video display or output device on the network for printing. SunPics will also sell Sun's Sparcprinter laser printer, and has introduced Nihongo NeWSprint 1.0, a Japanese version of NeWSprint, which will be out later this year.

PICK SYSTEMS' NEW AP-DOS INTEGRATES PICK, MS-DOS

While IBM and Apple were making their pitch for the desktop last week, Dick Pick was in London previewing Pick Systems Inc's own bid to rule the desktop with Advanced Pick for MS-DOS, AP-DOS, a new single-user, multi-tasking virtual memory implementation of the Pick operating system integrated with MS-DOS so that where the R83 release needs its own partition and takes over the machine when installed, AP-DOS goes into an existing MS-DOS partition, "seamlessly integrating" Pick and MS-DOS applications - they can be invoked from Pick Basic, which can call C, Fortran, Pascal and assembler subroutines. Users can access and update MS-DOS files or convert them for use by Pick. The new implementation includes enhancements to the file system and better security, and is available within days in the UK at an introductory price of £100, which will rise to something like £300.

ASHTON CUTS ANOTHER 100, HAS TWO NEW UNIX dBASE IVs

Still waiting to consummate nuptials with Borland International Inc, Ashton-Tate Corp is shedding still more fat, cutting its US workforce by about 100 employees to bring its worldwide total down to 1,200. It also announced implementations of the Unix version of dBase IV for the IBM Corp RS/6000 under AIX 3.1 and for Sun Microsystems Inc's old Sun-3 machines under SunOS 4.0, at \$1,000 for a single-user licence or \$3,000 for four simultaneous users.

IBM REPLACES THREE MODELS OF RS/6000 WITH 500H...

Resellers are pawing the ground waiting for the delayed bottom-end models of the RS/6000. IBM Corp last week came out with new mid-range models and withdrew the 530, 540 and 730 from marketing effective January 2, devaluing any machines its resellers may have in inventory. There is only one replacement model, the 530H, which comes with 33MHz processor and 32Mb memory, and a 400Mb disk standard. There is also a conversion option for 520 users to the 530E - functionally equivalent but not identical to the 530H, and from the 530H to the 550E. The 530H is available immediately, the upgrade from the 520 to 530E follows in November, and from the 530H to 550E, June 1992 - E models. The 530H offers up to 512Mb, up to 2.5Gb of internal disk, and 23.9Gb of external disk. The 530H is claimed to offer a substantial gain in fixed and floating point performance over the existing 520 and 530 systems. It has seven Micro Channel slots. The 400Mb disk is already on other RS/6000s and needs 3.5" mounting hardware. The 530H with 32Mb and the 400Mb disk costs \$31,500, an additional 400Mb disk is \$5,600. Converting to a 530E model from a 520 costs \$16,500 and going from a 530H to a 550E is \$17,500.

...LAUNCHES 80860-BASED STRATUS BOX AS SYSTEM/88 R20

While all eyes were focussed on its announcements with Apple Computer Inc last week, IBM Corp also made a string of other announcements, notably the launch of Stratus Computer Inc's 80860 RISC-based fault-tolerant computer - and significantly, the Unix System V.4-based FTX operating system, which means that when it finally gets its implementation of OSF/1 out, IBM will be able to offer the flagship Unix releases from both the warring Unix camps on different kit. It needs System V.4, because phone companies are a big Unix - and fault-tolerant - market, and won't touch anything else. The 80860-based machine appears as the System/88 4579 Model R20 and runs IBM's System/88 OS version of Stratus' VOS as well as FTX 2.0; it will be available on December 20, but FTX 2 will not be out until the end of March. IBM also added the 68030-based Models 970 and 980 of the System/88 4576, seven and eight processor versions with minimum 64Mb memory, also out in December. And IBM added the high-performance input-output processor feature, which is claimed to double throughput compared with the existing System/88 front-end.

ANY DEAL WITH NIPPON STEEL WILL BE MUCH LESS THAN ENVISAGED, ORACLE SAYS

Oracle Corp now says that the original scope of its proposed agreement with Nippon Steel Corp has been scaled back, and the cash that it may get from any agreement will be much less than the \$200m originally envisaged. The company says that as a result of its improved operating performance a new \$100m bank line of credit it has just received - National Westminster Bank Plc and Barclays Bank Plc in partnership with First National Bank of Boston arranged a syndicate of eight US and international banks - it does not need the Japanese company's cash to the same extent that it did. It now says that while it and Nippon Steel still want to exploit jointly the rapidly growing Unix and open systems market in Japan, recent discussions on product directions have led it to pursue a modified relationship. It was to have put its Japanese subsidiary into a joint venture with Nippon Steel, but that now looks as if it is right off the agenda.

UNISYS TO RAISE \$800m IN DEFENCE SYSTEMS FLOTATION

Unisys Corp has given up on trying to sell its defence systems business and has decided to try to get rid of it in an initial public offering. The new company will be called Paramax Inc and Unisys filed to offer 20m shares in it - the entire equity - at a target price of \$22 to \$25 per share. As well as the \$460m or so it would hope to raise from the offering, Unisys will also take \$332m cash out of the company, which will be headquartered in McLean, Virginia. The flotation would facilitate sale of the rest of Unisys to a foreign buyer - almost certainly Japanese - if the company decided to seek that course as a way out of its problems.

ARC VENDORS UNDER STARTERS ORDERS, BUT AWAIT SOFTWARE - MIPS READIES MULTI-PROCESSING ECL BOX, LOW-POWER R3000
MIPS Computer Systems says R4000-based Advanced RISC Computing systems running Open Desktop and Windows NT will begin to appear after the middle of next year, and bets are on as to who will be first to market. Hardware will be in place around the beginning of next year - MIPS is to deliver fully-functional R4000 CPUs to its partners in December - it's the ACE software which will be last out of the stalls. July is being bandied about as the time for completed offerings: SCO and Microsoft are currently on schedule to deliver within a month of each other, insiders say. MIPS' partners, which will manufacture the R4000, are Integrated Device Technology Inc, LSI Logic Corp, NEC Electronics Inc, Performance Semiconductor Corp and Siemens Components Inc. Prices for the parts will be around \$1,000 per 1,000-up, the suppliers say. MIPS also announced 20 development tools for the R4000, including its C RISC compiler and system programmers package. The latter includes I/O drivers and costs from \$8,000. At the R4000 launch - see front page - MIPS revealed that it is also working on a low-power implementation of the current R3000 RISC - currently at 10 Watts - for notebook builders. And, now that it has overcome some of the supply problems that have bedevilled its ECL efforts (UX Nos 341, 345), the R6000 ECL RISC will be getting some enhancements, MIPS says, and a multi-processing box based around that part is planned.

COMPUTERVISION DEAL NOW WORTH \$1bn TO SUN OVER FIVE YEARS

Who'd have thought it? We haven't been paying that much attention to Prime Computervision lately, and obviously we should have. Apparently, the little devils have been at the \$200m-a-year run rate with Sun gear for the latest few quarters and have now renegotiated their 1989 \$100m-a-year contract for Sparcs to read \$1 billion street value over five years. As a backup, Computervision has also cut a deal with Solbourne for the first time. The 18-month agreement, of unspecified value, will give Prime a second source needed at these quantities and a product line more popular with certain customers as well as more powerful than anything Sun itself currently has. Computervision, which as one of Sun's earliest customers contributed to Sun's making, is moving upwards of 7,000 Sparc boxes a year.

X TERMINALS: VENTURE FUNDS MERGE VISUAL TECH, GIPSI WITH \$12m DOWRY

Hambrecht & Quist Inc and Altus France SA each has a problem with its X-terminal investment, and the two have decided to put their problems together and pump in \$12m in new money to the combined company to try to create a dominant entity in the market. The two companies are Westborough, Massachusetts-based Visual Technology Inc and Paris, France-based Gipsi SA. Visual Technology claims to have introduced the industry's first monochrome X-window terminal in May, 1988. Gipsi introduced the industry's first colour X-terminal in September 1989.

IBM-APPLE 1*by John Abbott***IBM, Apple embark on odyssey to bridge the great divide to a new object frontier**

"Six months ago, nobody would have bet a dime that IBM and Apple would be standing on this platform together", said IBM Corp president Jack Kuehler at Wednesday's announcement of the broad-brush collaboration at the desktop between IBM Corp and Apple Computer Inc, beamed out by satellite from San Francisco to numerous locations around the world. No one, that is, except Unigram subscribers, who would have noted our reporting the first rumblings of the deal way back in January (UX No 315). Even so, it was incongruous to see Kuehler act out a lighthearted double-act with Apple Computer chairman John Sculley at the event, billed variously as "the reason why 1994 won't be like 1984" (Sculley), "the second decade of personal computing" (Kuehler) and (rather ludicrously) "the bridge over the great divide to a new object frontier" (Sculley). The cheery mood was in stark contrast to the last time IBM shared a platform with its major competitors - at the formation of the Open Software Foundation in 1988 - when IBM's John Akers and Digital Equipment Corp's Ken Olsen were both in such a sombre mood that they refused to pose together for photographs. DEC and Olsen incidentally were among the spectres at Wednesday's feast: just three years ago, DEC and Apple were cooking up an announcement about Mac-VAX integration that had analysts speculating wildly about ever-closer collaboration across the Massachusetts-California divide. The meat of the announcement, also involving Motorola Inc, came in the five initiatives outlined in detail on these two pages.

Motorola, IBM set 300 designers loose on single-chip PowerPC RISC

At the hardware level, the agreement centres around the IBM Power RISC architecture, as used in IBM's RS/6000, which Apple has agreed to use for its next-generation Macintoshes. In order to develop the CPU into a single-chip microprocessor packaged suitably for the merchant market, IBM is setting up a joint development centre of some 300 people with Motorola Inc in Austin, Texas, who will work on what is virtually a new chip design using the Power RISC instruction set. (Power stands for Performance Optimisation with Enhanced RISC, in case anyone had forgotten). This is the reason why the venture is still two to three years away from silicon: IBM may have been hard at work shrinking the original six-chip set down to two for the delayed low-end RS/6000, now due early next year, but it still remains essentially a custom IBM CPU. Motorola will co-design, manufacture and market the new chip, dubbed PowerPC, and will supply Apple and any other licensees it is able to pick up along the way. IBM, with its own fabrication facilities, is likely to supply its own needs. PowerPC is intended as a complete family of products, but will initially appear for three design points (perhaps for laptop, workstation and server use).

Combined IBM-Apple Unix will form PowerOpen desktop Unix environment

A software licensing agreement between IBM and Apple will result in a future version of IBM's OSF/1-based AIX operating system combined with the Macintosh user interface, as currently provided on Apple's own A/UX version of Unix System V. The operating system will run on both the Power - RS/6000 - and PowerPC architectures, and could be licensed by any other companies using the PowerPC chip. Both IBM and Apple say they will use PowerOpen in future versions of both AIX and A/UX on their RISC hardware lines, though customers will have the choice of Macintosh or OSF/Motif user interface. Current AIX, A/UX and Macintosh applications will be supported, and the operating system will be Posix- and X/Open Portability Guide-compliant. Licensing details will be announced "at a later date", when a new industry-wide organisation that sounds rather on the lines of the 88000 supporters club 88open, will be formed to promote the environment with other manufacturers, software developers and end-users. Defections from other recently formed industry groupings are confidently expected, at least by one Motorola source, who claimed enquiries had already been received from some Advanced Computing Environment Consortium members.

First fruits of co-operation will be networking, due this year

December of this year will see the first concrete evidence of whether IBM and Apple are really getting along, with the launch of networking products to tie the Apple and IBM worlds closer together, covering both planned and existing products. The products will make Apple Macintoshes "better clients" when working with IBM mainframe, midrange and department networks, according to Apple president Michael Spindler. Specifically, they talked about AppleTalk services for OS/2, with Apple licensing AppleTalk source code to IBM; Token Ring technology for Apple, licensed from IBM; closer integration of Macs with IBM's Systems Network Architecture, giving Mac users Advanced-Peer-to-Peer-Networking directory and routing services; Network management integration for Macs through IBM's LAN Network Manager, or centrally through the NetView network management product; and improved access to data and application resources on the AS/400, with Apple promising to implement its SQL-based Data Access Language for the AS/400. Many of these facilities have been offered by third parties for some time...

New start-up companies to tackle multi-media and objects

"There has been no single target so far for multi-media, and that's inhibited the appearance of new applications", said John Sculley, introducing Kaleida (after Kaleidoscope), the first of two equally-owned joint ventures that will operate from Silicon Valley. Kaleida, with around 200 to 300 people, will develop, license and make available multi-media specifications and technologies. Activities will include the development of computer-independent data and scripting formats which IBM and Apple - and, they hope, others - will license. Meanwhile, both companies will continue to work on their own separate multi-media efforts, such as Apple's QuickTime software effort.

IBM-APPLE 2

**"Pure" objects must wait for mid-decade,
but prototype Pink will be available "soon"**

The second joint venture is charged with the development of a "pure" object-oriented software environment, based on Apple's on-going Pink development work. With from 300 to 400 people, Taligent (derived from talisman - an object endowed with magic powers) is aiming to provide a product for mid-decade, but with a million lines or so already completed, software developers (under non-disclosure) are promised their first look by the end of the year. IBM is providing its system object model work and results from the Patriot Partners joint venture. While technologies from Pink will be incorporated into the PowerOpen Unix environment as they become available, and into 32-bit OS/2, John Sculley insisted that although object technology layered over existing operating systems would provide real benefits, the real goal was an environment "where networking, communications, file systems and device drivers are freed to become objects themselves". The new products would work in parallel to existing product lines, and layered implementations would ease the migration to the pure object environment. The environment will also run on multiple hardware environment, including Intel and Motorola-based systems.

**Intel, Lotus, Novell and Borland
heap on the praise**

With just over an hour's satellite time used up on the announcement and signing ceremony, IBM and Apple found they still had some pennies left in the meter, and so they wheeled on some industry executives who happened to be in the audience to impart their opinions. The first to the rostrum, Ron Whittier of Intel Corp's software products division, looked as if he'd rather be just anywhere else, and his halted, rather strangled tones suggested that he was still attached to the electrodes. His "enthusiastic endorsement" of the multi-media and object-oriented software efforts was rather lost on an audience amazed to see any representative from Intel - which did not figure at all in the new announcements - within a mile of the building. Who next, we wondered, Bill Gates? But no, it was Jim Manzi of Lotus Development Corp, and Novell Inc's Ray Noorda, who spent much of their time reminiscing about a historic baseball line-up consisting of Ted Williams and Joe Di Maggio in the same batting order (the old one two - IBM and Apple, geddit?). Finally Phillip Kahn of Borland International Inc came on, stating that object-oriented software "would be to software what the invention of the microprocessor was to hardware". Fair enough, but he then went on to stun the watching UK press corps at London's Hyde Park Hotel by saying that some were not yet convinced. "But then, there's still a Flat Earth Society, many of the members in England, it's kind of eccentric...". Asked later why Microsoft Corp hadn't been invited, Sculley said he hoped Microsoft would find the new platforms "exciting ones to develop for", adding rather limply that Microsoft was "a great applications developer".

**Despite the alliances, IBM and Apple "will
still compete", insists Kuehler**

What happens to existing Apple and IBM products? The new software associated with PowerPC is tied to the chip architecture and will not appear on the current Motorola range of Macintoshes, but then again, A/UX has had a fairly limited circulation on Macs to date anyway. Apple hopes that now the alliance is in place and growth path set out, customers will be encouraged rather than discouraged from buying existing Macintosh products. "This is the second phase of our mission to bring Macintoshes into the mainstream", said Sculley, who claimed that sales of the Mac over the last year "had accounted for the majority of the industry's growth". And Michael Spindler said that Apple's networking arrangements with DEC would continue, with systems integration announcements due soon. As for IBM, Jack Kuehler insisted that the announcements "would not change our plans for OS/2 one iota". He insisted that the Macintosh interface would remain entirely separate from OS/2, professed that the OS/2 2.0 Workplace Shell "was rumoured to be coming soon", and said that despite the co-operation, IBM and Apple would continue to compete strongly to sell their individual product lines.

**Motorola - the king is dead,
long live the king...**

Motorola Inc's Jim Norling, president of Semiconductor Products, made the company's position on the PowerPC RISC microprocessor abundantly clear when he stood up to make his pitch between John Sculley and Jack Kuehler. "It is clear that PowerPC is the platform for high-performance open computing", he said. Quite understandable, you might think, but also a damning statement from someone who, six months before, would have said exactly the same thing about Motorola Inc's own 88000 RISC chip. But, as company officials explained afterwards, Motorola is primarily a semiconductor company, and has a need to keep its giant and hugely expensive 0.5 and 0.6 micron fabrication facility, conveniently located close to IBM's own Unix operations in Austin, Texas, filled up with work. So far the 88000, despite claiming some useful niche markets such as telecommunications, high-performance graphics and multi-processing servers, has looked an unlikely bet to provide that work in sufficient volumes. Motorola insists it will continue to develop and support the chip: the new 88110 and 88120 are due to be launched at the Microprocessor Forum in early November, and Motorola says that having its own chip will enable it to go off in its own directions, as opposed to following the requirements of IBM and Apple with PowerPC. As for 88000 volumes, the deal Motorola struck with Ford Motor Co (currently Intel Corp's largest customer) back in June, to develop an automotive-oriented microcontroller version of the 88000 could involve up to 6m chips a year, although not until around 1995. This, of course, does nothing to secure its future use as a computer systems CPU, but then the point of RISC was meant to be that as an intrinsically simple plant, development of new generations should be much less costly than keeping complex instruction set microprocessor families up to speed.

CASE DATA INTERCHANGE FORMAT - THE KEY TO OPEN CASE OR AN EMPTY STANDARD?

by Katy Ring

It had to happen, after the standardisation efforts in the industry for operating systems - Unix, networking - OSI and databases - SQL, the time has now come to try and open up the closed, proprietary world of computer-aided software engineering. At present such efforts are being focused on the CASE Data Interchange Format - CDIF - being developed by the Electronic Industries Association, which in itself is an "ANSI-accredited" standards body in the US. In the UK, at a recent seminar sponsored by the Central Computer & Telecommunications Agency, many doubts were expressed as to how international a standard could be if it was forged by a US body. At the moment, the CDIF technical committee is being managed by the UK's Mike Imber of Learmonth & Burchett Management Systems Plc, fellow Brit Mary Lomas, based in Richmond with Oracle UK and the Canadian, Rob Hill from Sybase Inc - the fact that the committee is dominated by non-US personnel helped to allay some doubts.

US business interests

However, further consternation arose when it was revealed that in order to have voting rights at the committee, participants have to have US business interests - this was felt to be acting against European influences. Imber did not think that this restriction would be lifted but he did suggest that it could be very liberally interpreted - for example, the CCTA gets a vote because there is a UK embassy in Washington. Yet these problems are as nothing compared with the technical and vendor-political difficulties the CDIF standard is likely to encounter. From the user point of view there is clearly a need for such a standard. At present, Imber claims, there is no seamless integration between tools even if they come from the same vendor. Other problems include the management of large projects with prime contractors and subcontractors needing to pass software engineering information between them when they may well be using different tools. And then there is also the perennial problem of bringing information back into a different tool for future requirements. Of course Software One Ltd's Exchange product offers a proprietary solution to these problems but vendors have to get together to develop the technology and by and large this is driven by marketing needs, which from Imber's perspective is not appropriate. Even if it is argued that marketing needs are fuelled by user requirements, Imber does not think that such an ad-hoc solution to the problem can keep up with product upgrades. Furthermore, the number of interfaces coming into existence is going beyond the realms of pragmatism. Consequently, the CASE Data Interchange Format is being set up as a single standard set of interfaces dealing with the import and export of data from various tools. By the way, the definition of a software engineering tool taken up by the CDIF committee is any tool that helps the production of a computer system at any stage of the life cycle - that covers development, maintenance and extends all the way through to compilers. The idea is that over time vendors may stop writing proprietary import-export mechanisms. So far the CDIF technical committee has come up with three interim standards: a framework for modelling and extensibility, a transfer format definition and a standardised CASE interchange meta-model.

Meta-models

The framework is the starting point for all the standards, and the committee has invented its own notation so it cannot be accused of favouring one method or another. The framework defines semantics - that is the rules and relationships for each type of information in a tool to follow. The transfer format defines the syntax for the transfer of data between tools - it does not contain application data at the end-user level.

The meta model deals with extensions not to be found in the standard. The idea of extensibility is at once both a strength and weakness: a strength because any standard must be flexible enough to incorporate change - especially in as fast moving an area as CASE, but at the same time extensions are a means for a vendor to claim conformance while continuing to define its own semantic objects. In order to claim that conformance and continue its own development, a vendor must conform to the meta-meta model which comprises the rules for building a CDIF meta-model. The meta model is split into two further models: the semantic model and the presentation model. The latter attempts to address the problem of different representation for the same semantics. Ironically, one of the CDIF committee's first tasks is to harmonise the meta-meta models across different standards organisations. And, just in case anyone thought that CDIF's work was superfluous because these kinds of issues are already being addressed via the US Information Resource Dictionary System - IRDS and the European Portable Common Tools Environment - PCTE, you were wrong. These are repository standards that are seeking to standardise how information is held in a repository to enable different tools to sit on repositories, but neither effort is addressing the content of tools or how they communicate with each other.

Vendor reaction

Enough of the intricacies of standards bodies: how are the vendors reacting to CDIF? Richard Good, chairman of the prototype subcommittee, was on hand to explain the current state of play. His function is to facilitate relationships between vendors. To ease his job, participating vendors must publish the mapping between their model and the semantics of the CDIF model which is then made available to other participants. All vendors must build both an importer and an exporter. So far participants are: Advanced System Technologies Inc of Englewood, Colorado, Integrated Software Environments Ltd of Eynsham, Oxford, Cadre Inc, based in Providence, Rhode Island, Oracle Europe, headquartered in Chertsey, Surrey, Ascent Logic Corp of San Jose, California, Nashua, New Hampshire-based Digital Equipment Corp, Intersolv Inc of Cambridge, Massachusetts, London-based Learmonth, Texas Instruments Inc of Plano, Texas, Progress Software Corp of Bedford, Massachusetts and San Francisco-based Interactive Development Environments Inc. Good identified DEC and Cadre as being the most committed members so far and suggested that they may team up to develop export-import mechanisms purely within the core format. However, most of the work so far is being pursued through extensions; indeed, Intersolv intends to conform entirely via extensions. This must be worrying to a standards body and there were warnings that users should ask vendors peddling the concept of "open case" which of their mapping specifications were public domain. So it seems likely that Software One will have an assured earner in its Exchange product for some time.

INA AND PROXAR MERGE - DEVELOP SUN MANAGEMENT SOFTWARE

In the wake of OSF's DME announcement, a move likely to focus attention on the area, integrated management applications house Intelligent Network Applications Inc and 1990 start-up Proxar Technologies Inc are merging. Together they are to develop high-end distributed management applications for SunNet Manager, HP OpenView and other platforms, a market expected to be worth \$5m-\$10m next year. INA introduced NetMapper, an auto-discovery tool for SunNet Manager last December. The combined company will operate as Proxar Technologies. Its team is composed of former employees of Sun, Hewlett-Packard and AT&T including engineering VP Ching-Fa Hwang, responsible for HP-UX, president Mike Fung, founder of the Supertek and sales and marketing VP Glenn Maiden, creator of the third-party program for SunNet Manager.

BASELINE HAS SECURE PASSWORD SOFTWARE

Baseline Software announced a password screening package, Password Coach, to alleviate a Unix security vulnerability by making password guessing, the source of most high-visibility break-ins, more difficult. Password Coach subjects user-chosen passwords to 45 different strength tests to ensure all users employ difficult-to-guess passwords. Source code is now shipping with licences priced from \$5,000 to \$27,000. It comes with a 140,000+ English "weak password" dictionary. Other dictionaries, which collectively screen over three million weak passwords, are available in 15 languages. All are customisable.

NEW SPEC FOR ADDAMAX CMW

Addamax has brought its trusted SVR4-based Compartmented Mode Workstation (CMW) technology up to the newest spec, "CMW Evaluation Criteria, Version 1," published recently by the US Defense Intelligence Agency. It is the first such product in the formal government evaluation queue, a process set to start on this iteration in December and finish next summer. The new requirements incorporate 27 major changes and a host of minor ones aimed at making second-generation CMWs more useable in the real world. Addamax is porting its technology, now on 386, to RISC platforms such as the i860, 88k and Sparc with availability slated for December.

OF US USERS PLANNING TO SPEND MORE, 67% WILL BE GOING OPEN - COMPUTERWORLD POLL

There's more bad news for IBM Corp and other manufacturers dependent on proprietary systems in a survey among US users conducted by Computerworld magazine - and object-oriented technology has not yet made much of an impression on major users. The paper, which thought the headline results from the survey should be disseminated more widely than in only its own pages, reports that despite the recession, many large US companies will be putting more money into information systems in the next 12 months - and the majority will be going open. The poll is among what Computerworld tags the Premier 100 most effective users of computers among the Fortune 500, and the paper found that almost 75%, including all retailers polled, expect to install new systems to gain a competitive edge over the next 12 months. The paper also found that 58% have increased spending on computers in the past 12 months, up 3% over last year's figures - presumably they mean up three percentage points. And of the ones planning to buy new equipment, 67% will be moving to open systems. As for emerging technologies, imaging systems, local area networks and expert systems are seen as the most important. Overseas expansion is a priority, with 62% saying they will be expanding overseas in 1991 and 1992; 92% say it's "very likely" or "somewhat likely" that their company will redesign a business process around computers in the next 12 months. For many, the recession has put technology in the spotlight - "in the past, we got less than our share of corporate funding," said William Dimoulas, vice-president of information systems at Long Island Lighting: "Now we're probably getting more than our share."

FRONTLINE'S DISTRIBUTION DEAL WITH SUN "UNDER THREAT"

Industry gossips were suggesting last week that Frontline Distribution Ltd, Basingstoke, Hampshire, may be about to lose the right to distribute Sun Microsystems Inc desktop products in the UK. Unix system supplier Frontline, which last April signed a deal establishing it as one of Sun's two master resellers in the UK - the other being Technology plc, Warrington, Lancashire - is now in negotiations with Sun over renewal of that contract, the outcome of which is expected later this month (UX No 278). Frontline, which says it has done around £5m of business on Sun workstations over the past twelve months, denies the tongue-wagging: Sun said it could not comment whilst negotiations are proceeding. There was understood to have been friction between Sun and some of its distributors earlier in the year over the level of discounting being offered on certain low-end workstation models - figures of up to 50% were bandied about - before the launch of its entry-level Sparcstation IPX and ELC kickers (UX No 341). Other Sparc vendors have suggested in the past that the Sun/Frontline partnership was not long for this world.

ALPHA MICRO GOES BIG ON THE 88000 WITH BOARD PACT WITH OPUS, LAUNCH OF OEM DELTAS

Alpha Microsystems Inc, Santa Ana, California, has duly launched its series of RISC business systems, the Series 9000, to migrate its 600 AMOS/Pick/Business Basic-oriented resellers to Unix. Based on the 88100 Delta systems OEMmed from Motorola after their deal back in August (UX No 346), and a VMEbus, the family includes both single and multi-processors ranging from 33 MIPS to 67 MIPS with two processors, 134 with four. The company is supplying System V 3.2. Pricing starts around \$23,000 for an AM-9040 entry-level system supporting 10 users and including 16MB of memory and 300MB of disk. The high-end configuration supporting 256MB of memory, 10GB of disk and supporting 260 users is approximately \$208,000. A typical configuration for 64 users with 64MB and 1GB of disk is \$52,500. Alpha has also signed a letter of understanding with Opus Systems Inc of Mountain View, outlining a proposed business relationship under which Opus agreed in principle to license Alpha Micro as the exclusive distributor of its RISC-based family of add-in boards based on the Motorola 88000 architecture as turbochargers for the Amos, Pick and Business Basic markets. Pricing and delivery are to be announced in mid-October. Alpha Micro and Opus also agreed to join forces to configure a special entry-level system with "attractive pricing", which will be used to start users on Unix System V for the 88000. The company has returned to profitability. For the six months ended August 25, it reported net income of \$239,000 on revenues of \$24.4m compared to a loss of \$3.6m on revenues of \$27m a year ago.

ITT SHERATON HOTELS UPGRADE TO HEWLETT-PACKARD UNIX FROM NCR UNIX

ITT Corp's ITT Sheraton Corp, the Boston-based global hotel operator, has gone to Hewlett-Packard Co and ECI Computer Inc to implement what it claims is "the hotel industry's most advanced worldwide information system", giving the two companies a contract valued at more than \$14m. As part of a multiyear plan to integrate its proprietary central-reservations and property-management systems, ITT Sheraton plans to implement an open systems environment using HP 9000 Series 800 business servers installed at most of the nearly 450 Sheraton Hotels worldwide, enabling them to retrieve important customer data quickly from the company's Reservatron IV system, and also - it is hoping - manage their daily business operations more efficiently; Reservatron IV enables a customer or travel agent to make reservations anywhere in the world by using the company's toll-free telephone numbers. The loser in the award of the contract is NCR Corp - Sheraton's proprietary hotel-management software ran on Tower 600 Unix machines.

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MIPS Computer Systems Inc's 64-bit R4000 can address 18.4 quintillion bytes: that's 18,446,744,073,709,551,616.

Groupe Bull is to sell Menlo Park, California-based Alex Technologies' interface software on its DPX range of Unix workstations: Alex allows users move character-based applications across to graphical environments running Motif without changing the underlying code or re-programming with the X-Windows toolkit: Bull already offers the rival X-Windows-based desktop managers from Visix Software Inc and IXI Ltd.

Tektronix Inc, Wilsonville, Oregon, has introduced TekXpress XP26, a 17" colour X-terminal, functionally identical to the 19" XP27: with from 5Mb to 37Mb memory it is priced at \$4,750 and ships this month.

Sun Microsystems Inc's SunPro has announced new versions of its Sparcworks debugger and toolset, and enhanced C++, C, Fortran and Pascal Sparc compilers for SunSoft Inc's Unix SVR4-based Solaris 2.0 operating system environment.

Meanwhile SunSoft this month introduces some new software designed to ease the workload of system administrators: Backup Copilot is an automatic backup and restore package, DiskSuite is a disk mirroring and management system - they work on both Solaris 1.0 and Solaris 2.0. DiskSuite costs \$1,000 on desktops and \$2,500 for servers - Backup Copilot is priced at \$800 for workstations, \$1,500 on servers.

Canon Inc seems to be doing rather better with NeXT Inc's machines than NeXT is itself: it has sold 400 of the things to Osaka University, Newsbytes reports, making it the biggest single order for NeXT, and the machines will replace IBM Corp mainframes at the university.

Bipolar Integrated Technology says is now free to ship its implementation of MIPS Computer Systems Inc's ECL R6000 RISC part to customers other than MIPS itself: industry sources see the move as a sign that the Beaverton, Oregon-based chipmaker has now overcome the ECL manufacturing problems which plagued it for over a year.

Unix will lose one of its most distinctive and powerful features over the next two or three years, according to US reports. The Unix superuser - su - is expected to become an optional extra to future SVR4 releases, not a standard integrated feature. The superuser login, a widely-used Unix programming shortcut, allows Unix users to access hard-to-reach files and perform tasks quickly. The plan to phase out superuser is reckoned to be a direct response to the increasing demands for security - on top of functionality - in Unix, so that the operating system can make further headway in the commercial marketplace.

Solbourne Computer Inc has been invited by Unisys Corp to bid on a contract for OEMmed Sparc-compatible multi-processing workstations: Sun Microsystems Inc has previously been the sole source supplier to Unisys for Sparc systems, and comes in the same breath that Sun announced its first multi-processing efforts - see front page - for which Unisys has been a beta-test site; a decision is expected next month.

The last remaining Apollo Computer Inc co-founder still at Hewlett-Packard Co has left the firm following the reorganisation of HP's workstation division that took place earlier in the year: Michael Greata was Apollo's chief technologist prior to its acquisition by HP.

The first fruit of AT&T's merger with NCR Corp is an integrated network management product - StarSentry - a suite of programs running on NCR's System 3000 series that allows users to manage remote system from a central location. It comes out of NCR's recently formed Network Products Group, which is headed-up by Bill O'Shea, combines NCR's client network management system with AT&T's server-based manager, Accumaster Integrator and can monitor Unix, OS/2 and MS-DOS environments.

Alliant Computer Systems Corp, Littleton, Massachusetts, is reported to be working on a massively parallel processing system based upon the same Intel Corp i860 RISC part that it uses in its existing parallel processing systems: apparently a prototype is being readied for a supercomputing show in November.

Uniformum is rechristening its hard-to-pronounce monthly magazine CommUNIXations: from now on it'll simply be Uniformum Monthly.

SunSoft is reportedly negotiating with Netwise to modify their contract to get Netwise's RPC technology incorporated in Solaris 2 and available regardless of platform, meaning Intel to start with.

Ahh, the irony: Interactive or its remains has been named an IBM Business Partner and will market and install 6000 machines and AIX, an operating system whose development it had a lot to do with in the first place.

All Sun can manage to say right now about the Viking or SuperSparc chip running in its labs is "it's working." How functional it is remains unanswered.

Feedback is starting to come in from independent software vendors who have poked around the ACE operating systems issue: it seems that moving from Microsoft's NT to SCO's Open Desktop or vice versa will require something like three or four compiles. They are not source compatible nor is there any promise that they will be. In addition the interfaces are different. Therefore, in the opinion of one ISV, it's a matter of completely re-engineering. When compared to what SunSoft is promising, Solaris, which will be source code compatible RISC to Intel, seems a more elegant solution.

This week at InterOp, Sun is reportedly going to pop a new iteration of its naming service, NIS+.

Two-year-old start-up Cayenne Systems, a 40-man shop aiming to market object-based hypermedia software that increases user productivity, has lured away Oracle USA's group VP and general manager of its direct marketing division, Thomas Siebel, to be its CEO. Marti Pozzi has been snatched from Gupta Technologies where she was sales director for the slot product ready in the X environment in the next six months.

NeXT follower NeXTWorld claims in its latest issue that NeXT is re-evaluating the decision to base its next generation machines on the Motorola 88110 because of IBM/Apple plans and Moto's perceived attention span: the publication cites unidentified sources for the story and says the company's other options include Sparc, Mips, Intel or the far-off Motorola 68050.

Adoption of the Motorola 88000 RISC among major native players is reportedly so widespread, 88open will be setting up 88open Brazil: something it's not really done anywhere else.

Last week Unigram.X incorrectly turned the amount paid (\$14m) into the percentage bought (actually 4.5%) in referring to the share Novell Inc holds in Unix System Labs (UX No 353).

Transarc Corp, Pittsburgh, Pennsylvania, has won Japanese giant NEC Corp over to its cause: NEC has picked-up Transarc's Encina on-line transaction processing software launched at the Open Software Foundation's DME bash a couple of weeks ago (UX No 352), for use on the Stratus Computer Inc fault-tolerant systems that it markets under its own name, as well as on the other Unix systems it sells.

This CMW business - see page two - is starting to get interesting: national computer distributor Avnet Computer, of all people, is going to be co-marketing Addamax technology, bringing the company into likely accounts. Initial focus will be on a B1/CMW for the Motorola 88k servers Avnet resells to the US government both directly and through VARs. Availability is January.

Sun Microsystems Inc and Apple Computer Inc came close to merging in 1987, when Apple was four times the size of Sun, and again last year, when Apple was twice Sun's size, reports the Wall Street Journal, which was told that the talks foundered when the Sun side insisted that its chief executive, Scott McNealy should be president of the enlarged company, a proposal that Apple chairman John Sculley was reportedly not ready to countenance.

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, October 14-18 1991

Number 355

ACE EMBRACES SVR4 - BRINGS UNIX CAMPS CLOSER

The wave of rapprochement sweeping the Unix industry moved on one step further last week, when, as expected, (UX No 354), the five founders of the Advanced Computing Environment initiative, including Microsoft Corp, DEC and Santa Cruz Operation, none of them special friends of Unix SVR4, conceded to mounting pressure from both inside and outside of the camp, striking a deal with AT&T's Unix System Laboratories Inc for the development of a common set of application programming interfaces that will allow software developed on USL's SVR4 - or the Open Software Foundation's OSF/1 rival Unix offering - to run on ACE's MIPS Computer Systems Inc and Intel Corp hardware platforms under the OSF/1-based Open Desktop Unix environment currently being put together for it by the Santa Cruz Operation Inc and DEC. As well as signing-on with the ACE crowd, USL, which recently swallowed its pride and announced the inclusion of OSF's distributed computing technology in its own Atlas vision of distributed computing (UX No 351), will include interfaces to the Motif graphical user interface - as well as to OSF/1 and DCE - in its ACE SVR4 products. Pyramid Technology Corp, a member of the dissident Apache Group in ACE that has rejected anything but SVR4, is currently working on a reference port of SVR4 for the MIPS architecture on behalf of USL. However, the Apache companies alone could not turn the trick, and bringing SVR4 into the fold required the mediation of ACE founder Compaq Computer Corp working in concert with USL and negotiating on behalf of SVR4 with its fellows. Compaq says it was motivated by the need for a high-volume unified Unix market unencumbered by the religious wars that flair between SVR4 and OSF/1 camps, 90% of whose heritage is identical. It wanted to stop a divergence above the kernel and sidestep an internecine battle with SVR4 for the independent software vendor. Compaq stops short of admitting it will adopt SVR4, saying the issue is still being worked. DEC says it won't touch SVR4 itself, but countenances its embrace by ACE because USL will support OSF technology in its software: third parties could provide it on DEC hardware. MIPS, on the other hand, the company around which ACE swirls, is about to pop its next operating system iteration which, if it retains its numbering scheme, will be called RISC/os 5.0 and will be an SVR4 version. The ACE leaders believe the move, which will have Compaq, DEC, MIPS and USL creating a common set of source-compatible interfaces for SVR4 and OSF/1, is likely to attract new supporters to ACE and strengthen its position - and indeed the position of Unix itself - with both ISVs and end users. If these commitments can be met for ACE's RISC and iAPX-86 hardware architectures, the prospect of a unified Unix environment for the industry at large must be drawing ever closer. Indeed, the breakthrough is the closest the industry's been to being unified since May 1988 when OSF came into existence and announced its plans to re-write Unix.

Common desktop metaphor planned

As for ACE's tortuous progress towards a graphical front-end for its Open Desktop environment (UX No 348), Compaq Computer Corp - which has expressed a preference for Hewlett-Packard's Visual User Environment - SCO - which favours IXI Ltd's X.desktop manager - and USL - which has a Mac-like front-end under development for its Unix Lite - say they are now working on an application programming specification for a desktop manager which they will take to the ACE membership. Apparently, it will embrace all three metaphors, plus Visix Software Inc's Looking Glass, but the aim is to do away with this eventually and espouse a desktop manager - possibly some merged technology - that will go on Unix everywhere. ACE has pledged to adopt this common desktop manager even though it doesn't know what it is, but the issue looks like replacing operating systems as the new minefield.

DEC TAKES A CLOSER LOOK AT FELLOW ACE MEMBER COMPAQ

Highly-placed sources within the ACE Consortium claim that Digital Equipment Corp is taking a close interest in Compaq Computer Corp - not with an all-out purchase in mind, but with a collaboration that would go further than a strategic alliance. Such a move would give Compaq the direct sales arm that it needs to break into the high-end server market. It would also rationalise things in the ACE Consortium, currently racked with schisms. Something is set to be sorted out by the end of the year. Compaq is due to revamp the high-end servers in its product lines, as the SystemPros are beginning to get a little long in the tooth. Announcements of both high-end machines and a portable are expected at the Networld show in California, a week before Comdex (where Compaq is not exhibiting).

HDS WINS LARGEST EVER X-TERMINAL CONTRACT

The largest X-terminal contract ever awarded, part of the massive \$1.6 billion Reserve Component Automation System (RCAS) contract just let by the US Army, went to Human Designed Systems acting as a subcontractor to Boeing, the primary contractor. Under RCAS, HDS will be supplying the Army National Guard and the US Army Reserve with close to 60,000 terminals over the next 30 months at a value to HDS in excess of \$70m. The award, if it stands, could catapult HDS, a privately held \$10m-a-year Pennsylvania company now in the number six spot, into position as the industry's volume leader. Computer Sciences Corp, which bid ANSII terminals and undercut Boeing but still lost the bid, immediately protested the award. Arrangements for a hearing are underway, but Boeing could not say whether deliveries, set to start right away, would be halted. Unlike many government contracts which are little more than "hunting licences" for the winners and are thus designated IDIQ or Indefinite Delivery, Indefinite Quantity, HDS said its contract was FFP or Firm, Fixed Price meaning that there was no question how many boxes would be delivered. The award, whose quantities equal all the X-terminals shipped last year according to IDC and Dataquest figures, represents another watershed for X-terminals, HDS said, in that the units are not replacing workstations and will be used for office automation, a commercial application that could easily have gone to PCs. Uniplex, which is supplying the software, is thus another big winner as are DEC with its DECsystems and Zenith with its 80486 boxes running SCO's ODT. RCAS is reputed to be the largest of several government contracts currently pending. If the recent \$1.4 billion TMAC award is overturned (UX No 353), HDS, which is being bid by the protestors IBM and Lockheed could also stand to benefit. HDS said Boeing selected its boxes over NCS, Tektronix and others because of their unique modularity and price/performance.

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SUN DELAYS SPARCSTATION 2 TECHNOLOGY FOR CLONE MARKET...

Sun's plans to release its 40MHz Sparcstation 2 widgetry to cloners failed to materialise on schedule last week (UX No 354), reportedly delayed at least in part by a reluctance by AT&T's foundry to supply its gate arrays to the effort. LSI Logic, one of the channels Sun will be using to license the technology, makes the arrays for Sun. But Tera Microsystems and now Fujitsu too, Sun's two other prospective licensing channels, obviously need another source - without it the entire program would be jeopardised. LSI's reassurances, however, that it will be able to provide the goods caused Tatung Science & Technology to rush out an announcement that it will preview a 40MHz unit at Comdex next week. The system, the CompStation 40, which will be formally announced at Unix Expo, will be priced at \$10,000 with a 19-inch monitor, \$5,000 under a similarly configured Sparcstation 2. The Tatung box also has an additional Sbus slot, greater memory and internal storage capacity than the Sun 40MHz IPX for \$2,000 less. The base configuration includes three Sbus slots, 8MB RAM, a 207MB hard drive, choice of either Solaris 1.0 or Motif/X 11 R4/X.desktop bundled and a single-slot graphics accelerator card. With a 15-inch monitor, the box will be \$9,000. Maximum on-board RAM is 64MB expandable to 128MB with add-on cards, up to 680MB internal storage and room for one 3.5-inch floppy. Tatung will offer both Sun's GX graphics accelerator and Weitek's more affordable one. Deliveries are supposed to start by the end of the month.

...AS SUNPRO HANDS THE SUN COMMON LISP OVER TO LUCID...

Sun Microsystems Inc's SunPro unit is handing its Common Lisp implementation over to Menlo Park, California-based Lucid Inc, already a leader in Common Lisp for Unix. Lucid will acquire exclusive rights to Sun Common Lisp, which will be renamed Lucid Common Lisp. The company is offering it immediately, but SunPro will continue to offer Sun Common Lisp until the end of the year, although its customers can receive support from Lucid immediately. "In response to evolving market requirements, both partners agree that a single source supplier for the language will best meet the needs of the Lisp community," Lucid comments. Financial terms were not disclosed.

...AND REFUSES COMMENT ON ANALYSTS' DOWNGRADES OF PROFIT ESTIMATES

Sun Microsystems Inc treasurer Tom Meredith declined to comment on earnings estimate changes last week by analysts at Goldman, Sachs & Co and Prudential Securities Inc. Goldman analyst John Levinson cut his estimate for the first quarter ended last month to 32 cents a share and Prudential analyst Laura Conigliaro reduced her estimate to 30 cents - still up on the 26 cents a share Sun did this time last year. Meredith says that Sun instituted a policy nine months ago of not providing guidance to the Street on earnings - a wise but very unusual step taken because of the epidemic of shareholder law suits over financial statements that later turned out to be over optimistic or pessimistic. But the new policy is unusual because many Wall Street analysts rely on the companies they follow to tell them whether their guesses are on target or not.

FIRST NCR-AT&T JOINT

NETWORKING PRODUCTS ANNOUNCED

As briefly reported last week (UX No 354), NCR Corp has now begun the integration work necessary between its own hardware lines and those of new parent AT&T, under the so-called Open Networking Environment (ONE) strategy, and added several new products of its own. The products involved include StarGroup software, StarLAN and StarWAN networking hardware; and StarSentry network and systems management - along with a new SNA communications processor family, and WaveLAN wireless networks based on LAN Manager for Unix. The AT&T StarLAN family of network adaptors, intelligent hubs and network hardware gives NCR a suite of products for multi-vendor connectivity for twisted pair, coaxial and fibre-optic wiring. The StarWAN range includes bridges for interconnecting Ethernet, FDDI and Token Ring LANS, and routers for wide-area networks using services such as T3, X.25 and Switched Multimegabit Data Service. The StarGroup software has been integrated with NCR's existing OSI-based products for client/server networking, and now runs on all models of NCR's Intel-based Series 3000 systems. StarSentry offers centralised control and integrated support of multi-vendor networks. Of the new products, Stargroup Lan Manager Server 2.0 is the newest version of LAN Manager for Unix, developed jointly by AT&T and Microsoft - it includes all the functionality of standard LAN Manager 2.0, with which it is compatible, and allows for communications and interoperability with MS-DOS, Windows, OS/2, Mac and Unix-based systems on LAN Manager, Appletalk, PC LAN, LAN Server, Banyan, Token Ring, Ethernet, unshielded twisted pair, coaxial or fiber optic wiring, over OSI, TCP/IP or NetBeui protocol stacks. Support for Lan Manager for Unix is also available over WaveLAN high-speed wireless local-area networking.

SNA support

NCR's SNA/Open GateWay hardware and software allows SNA users to access IBM 3270-based applications on a Unix system. The new communications processors add to NCR's Comten 5600 family for SNA customers who need to interconnect LANs: the 5630 is a low-end model with channel-connect and LAN concentrator abilities; and the Multiple Communications Adaptor Module (MCAM) is a new MicroChannel-based system for supporting emerging transport technologies such as ISDN, Frame Relay and SMDs. Along with MCAM, Comten support for 16/4 Mb Token Ring and ISDN support was added in addition to Ethernet. Other enhancements include additional TCP/IP host applications (such as access to host line printers), expanded routing and API support for CICS and IMS programmers. New StarSentry systems management applications include DOS Management and OS/2 End Node and Server Management for remote administration and monitoring of DOS and OS/2-based PCs, and Software Management for remote distribution and installation of software files to DOS, OS/2 and Unix computers, version tracking and inventory. The applications run under a unified graphical user interface under System Manager.

CADENCE TAKES OVER AT VALID LOGIC

Valid Logic Systems Inc - in which IBM Corp has an 8.3% stake and an option to go to 49.9% - has agreed to be acquired by its San Jose electronic design automation sibling and neighbour, Cadence Design Systems Inc. The agreement called for Cadence to pay 0.323 of its own shares for each Valid out, valuing the company at \$198m at the current Cadence price. The two companies are seen as a good fit, and their combined sales for 1990 add up to \$390m, knocking on the door of Mentor Graphics Corp, which did \$435m. Valid is strong in circuit board design software, Cadence in chip design. Cadence will lay-off 10% of the combined workforce of 2,800 people, which will lead to a big extraordinary charge, likely leading to a loss for the quarter in which it is taken.

MOTOROLA LAUNCHES THE SECOND PHASE OF MULTIPERSONAL BLITZ

Motorola Inc took the next step in its campaign to make its 88000 RISC machines major players in the commercial computing market when the Commercial Systems Division added three new models of its MultiPersonal Series 8000 family of systems and servers last week. The new models are based on the new Motorola MVME187 single board computer, which reduces the components of an entire Unix computer to one board. The new Models 8220, 8420 and 8620 are designed as scalable network servers in support of Motorola's MultiPersonal Networking software products, also introduced yesterday. They grow from support for four users up to 500 and sell for a claimed \$236 per MIPS. They use the 25MHz MC88100 RISC and run the System V/88 implementation of Unix System V.3.2. The company claims that over 1,000 applications are available. All are rated at 38 MIPS, have 16Mb to 64Mb of main memory and 180Mb to 520Mb disk expandable to 100Gb, but come with three, six and 12 VME slots respectively. Base prices are \$9,000 for the 8220, \$11,500 for the 8420 and \$18,500 for the 8620. The company's new suite of integrated desktop communications software for the MultiPersonal Networking family includes SMB/ix, Motorola's SMB Server for Unix, which supports MS-DOS and OS/2 micros on the RISC servers. PC Interface is a local network software product using low-level RS-232C. The company is offering LAN Manager/X for Unix. There is a NetWare Compatibility Module enabling a NetWare client micro to retain all NetWare's capabilities, while using Motorola systems as NetWare servers. In addition, the module provides programming interfaces based on IPX, SPX and NetBIOS, so that applications developed under Unix can communicate with NetWare clients. Pacerlink enables Macintosh and MS-DOS computers to communicate with the RISC servers, accessing Unix applications and resources, transferring files to and from the servers, store data on the server and access print services. PacerShare and uShare enable the servers to act as AppleShare-compatible file servers for Macintosh and MS-DOS, dynamically translating Macintosh and MS-DOS file formats into native host files, so the clients can share files among themselves and with the servers. Powerfusion is an alternate networking product that connects installed personal computer local nets to the Motorola servers, and acts as high-performance bridge between closed, proprietary networks and open system network environments. And Motorola is supporting its Altair wireless Ethernet network on the kit. And MicroAge Computer Centers Inc, Tempe, Arizona, announced that it is to distribute the MultiPersonal Series to large Macintosh installations.

ICL WINS ONE HORSE RACE WITH MOD CHOTS CONTRACT

The ICL-led Topix consortium has won the contract for the Ministry of Defence Corporate Headquarters Office Technology System - not a surprise, really, since the ICL team were the only ones left in the bidding, following the British Telecom-led consortium's withdrawal back in February (UX No 320). BT said its commercial interests "were best served elsewhere". The other consortium members are BICC, Coopers & Lybrand Deloitte, Data Logic and Hewlett-Packard. The contract is in the form of a fixed price enabling agreement, with the MOD ordering system to match the implementation programme for 30 sites throughout the UK. Value is said to be in the order of £250m over the next five years. Over 10,600 ICL secure terminals will be linked via fibre optic cable to several hundred HP 9000s and ICL DRS 6000 Unix-based servers - all using a version of Unix System V Release 4, developed by Topix, with additional security features. Other components include a secure version of ICL's OfficePower software, and a guard gateway device to secure the GOSIP-compliant communications.

UNIX SYSTEM LABS RELEASES MULTI-PROCESSING SVR4 MP

Unix System Laboratories has announced the general availability of SVR4.1 MP, the multi-processing release of its Unix operating system, for Intel Corp 80386 and 80486 architectures. Reference platform for the release is Compaq Computer Corp's System Pro: scalable versions for Wyse Technology Inc's series 9000i and Corollary Inc 486/smp and C-bus II will follow, whilst NCR Corp, Unisys and Everex Systems are already working on their own implementations. Motorola, Unisys, Dolphin Server Technology, Omron Advanced Systems, Encore Computer and Samsung Software America are porting the thing to their respective Motorola 88000 RISC environments, whilst Intel, Oki Electric Industry, Stardent Computer and Stratus Computer are working on a version for Intel's i860 RISC part. Applications developed for Unix V.3.2 and SVR4 will run unchanged on SVR4 MP, which can accommodate symmetric or asymmetric architectures of up to 16 processors. Existing SVR4 licencees can get the thing at source level for \$50,000, new licenses are \$150,000, and until the end of the year, SVR4 MP is on offer at \$115,000.

CRAY RESEARCH STEPS IN FOR FLOATING POINT SYSTEMS

The Beaverton, Oregon-based Floating Point Systems Inc has had a very unhappy coming of age. The 21-year-old company, which likes to be known as FPS Computing these days, filed for reorganisation under Chapter 11 of the US Federal Bankruptcy Code last week, but as we went to press, Aegan, Minnesota-based Cray Research Inc stepped in with a \$3.2m bid for the \$1bn firm. The deal, for all assets except land and buildings is expected to be complete by mid-November. FPS is known most recently in the Unix world for its massively parallel Sparc RISC minisupercomputer system.

BULL LAUNCHES TUXEDO-BASED TP MONITOR, DISTRIBUTED DATA ACCESS

Bull last week added another two bricks in its Distributed Computing Model strategy, launched earlier this year at Hannover. Open Software/TP is Bull's implementation of AT&T's Tuxedo transaction processing model, with additional features such as a Cobol interface, support for GCOS, IBM CICS and Oracle Version 6.0, batch processing and application restart. It plans to offer some of the functionality back to Tuxedo developers Unix System Labs. Distributed Data Access is built on top of Ingres Star, and provides transparent access to multiple databases on Unix, Bull GCOS, IBM MVS and DEC VMS-based systems. Both fit into the application services component of Bull's DCM, work on top of the Open Software Foundation's Distributed Computing Environment, and rely on standards such as SQL and the X/Open DTP/XA interface, which database companies are currently incorporating into their products. Although an Open Software Foundation member, Bull opted for the AT&T Unix System Labs Tuxedo product some 18 months ago, when NCR Corp's Top-End and the new OSF-favoured Encina product from Transarch Corp had not been announced. Bull said that Encina was currently little more than vapourware at present, but said it would track the progress. Bull's next task is to merge the two products to provide a fully distributed transaction processing facility, sometime in 1992. The company also offers systems integration services to customers implementing distributed, multi-vendor, transaction processing systems.

UNIX IN GERMANY AS SEEN BY "THE GRANDFATHER OF THE COMMERCIAL UNIX MARKET"

by Sue Norris

Without sounding too bigheaded, Hans Strack-Zimmermann describes himself as the grandfather of the commercial Unix market in Germany. Having headed up the Unix research and development operation at Siemens Data Systems for 10 years, and having been involved in the birth of various Unix user committees in Germany, he ought to be in the know. Today he owns his own company in Munich, called iXOS Software GmbH, which technically is a spin-off of Siemens - when Zimmermann left Siemens, he took half the development team with him, leaving the company no choice but to procure products from iXOS. iXOS is now three years old, and the company's main business is in Unix development tools and applications software, particularly OSF/Motif graphical user interface-based image and archive systems for Unix servers. The Munich company, which now has 60 staff, last year turned over the equivalent of \$5m, and is expecting \$7m this year. This projection doesn't include the company's new east German operation, which has now been in business for just over a year and is already profitable.

Leipzig

The Leipzig subsidiary, called iXOS Anwender Software GmbH, was started up with a handful of local Unix experts, who have spent their first year operating from a student apartment. The problems of setting up in the east are not people-based, says Zimmermann; rather they are practical problems, like finding office space - iXOS Anwender has been lucky enough to fall upon a fur factory in the last month. Even telephones are a luxury - communication with the Munich office had to be conducted by means of a cellular car phone for a long time. Zimmermann feels he has learnt a lot about the east from setting up the subsidiary. The first rule, he says, is not to mess around in areas that we know little about - here, he is referring to the eastern culture and eastern needs, which of course are bound to be different from those in the west. The answer is to employ local staff. iXOS Anwender is a totally different company from iXOS in Munich. The Munich office, says Zimmermann, is a "software boutique", with a clean, crisp corporate image. Here, the main business is the "expensive, high-tech stuff", with a good customised product service. By contrast, the eight-person Leipzig operation is, in his words, a lot more down to earth. It sells bundled financial control systems to surviving East German businesses, its customers mainly industrial ones, such as a raw wool factory. To date, the customer base in eastern Germany for iXOS totals about eight, but Zimmermann insists this is enough to make business worthwhile. When asked about possible plans for expansion into the rest of Eastern Europe, Zimmermann puts up his guard - "East Europe is a very painful past for us", he says.

"We must be very tactful with Poland, the Soviet Union and the like". And, he points out, "their economies don't call for aggressive software sales... I've learned to think about they have experts out there, what their culture is, etc... We're in the process of opening our eyes, but we've no specific plans yet". He goes on to say that he has been impressed with Poland - its abilities and its level of knowledge of the German language, suggesting that this may be one site of future expansion. Speaking more broadly about the German Unix market today, Zimmermann notes that although many large software houses - such as SAP AG and Software AG - are moving in, they still have a lot to learn. Unix is a culture, says Zimmermann.

And software companies must take time to understand it. He cites SAP as having impressed him in this area.

Interest

A lot of large institutions, he remarks, have over the last year begun to get interested in Unix - banks, for example. And the major car manufacturers were sniffing around some time before that. But, he says, what these customers wanted initially was OS/2. But OS/2 never happened. And, with the rift between IBM Corp and Microsoft Corp, he goes on, the large organisations are thinking twice about investing in OS/2, and are instead thinking towards Unix. Suddenly, it's real. So, the demand for Unix in Germany is there now and, judging from the turn-out at last month's Unix in Deutschland exhibition in Wiesbaden, near Mainz, Unix is something that's soon going to explode out there in a big way.

Start-ups

But what about the small independent German software houses - how do they establish themselves in the market when the banks just aren't prepared to risk investing in "new" technology? Zimmermann admits that this is certainly a problem for any start-up company - unless they can become contracted into a large development project, these companies don't stand a chance, especially as Germany does not have the culture to foster start-up companies. The vast majority of Germans would much rather work for a large "safe" company than go off and start up from scratch on their own. What will probably happen more and more in the future, Zimmermann suggests, is that there will be a lot of mergers and takeovers, as some of the big software companies, previously with no experience of Unix, decide that the easy way in is to buy in the expertise. "But that does not mean that I am up for sale," he adds quickly, with a twinkle in his grandfatherly eye. "We may consider a co-operative though". The French, he says, understand the German market. Led by the dominant continental, Serge Kampf's giant Cap Gemini Sogeti SA, they are putting in a lot of money, buying up 51% stakes in small companies. French and German management cultures are not dissimilar, Zimmermann explains - they both have low staff turnovers. In the future, we will see their intervention more and more.

AIX EXPO '91 SANTA CLARA, CALIFORNIA

At AIX Expo a couple of weeks ago IBM held a demonstration of its speech recognition technology project. Unlike many current voice systems, the IBM system recognises thousands of words. The demonstrator had first trained the system by reading it about 100 sentences. During this time, the system created a voice profile of the speaker. The program was then able to recognise just about any word that he spoke, although it was necessary to leave a slight pause between words. In a test which involved reading from an article in the AIX Age newsletter (published by Nims Associates of Dallas, Texas), the machine was able to recognise 23 out of 25 words. The demonstrator then called up a window which showed what words were considered for each utterance. Of the two words that were missed, the correct words were numbers 2 and 6 respectively on the list of possible choices. The intention is that after identifying the wrong word, the operator displays the window of choices and indicates which was correct. The system uses this information to improve its model of that speaker's particular voice. At this time, IBM has no firm plans for offering the voice recognition system as a commercial product.

AIX self-training courseware is now available from Courseware Technologies. The software consists of interactive self-paced products that run under either DOS on a personal computer or under AIX on an RS/6000. There are tutorials that teach about AIX, ranging from beginning to advanced. The cost is \$1,200 for up to five MS-DOS users, and \$2,200 for up to nine RS/6000 users.

Perceptics Corporation a Knoxville, Tennessee mass storage integration company has just announced support for AIX and the RS/6000. Perceptic offers an integrated optical storage facility with a capacity of 10.2 gigabytes (standalone) to as much as 1020 gigabytes (jukebox system). Prices range from \$7,000 to \$300,000.

Locus Computing Corporation of Inglewood, California, exhibited a sneak preview of PC-Interface for the Macintosh running on the RS/6000. This software system (which already runs on SCI, ISC and Sun Unix's) allows Macintosh users to access all manner of networks services, including virtual drives, printers and VT-320 terminal emulation. The system requires no changes of special software for the Mac. The connection is made over either an Ethernet or RS-232 serial connection. The RS/6000 product will be released in January of 1992. Prices are expected to range from \$800 to \$15,000.

NAUG, the National AIX-RISC Systems/6000 User Group met on October 2nd. The meeting was organised by a board of seven people, headed by Ed Taylor of Pencom Software and included David Flack of Unix World magazine. The group plans to start an international organisation, and anticipates a computerised bulletin board system, newsletter, bi-monthly meetings and an annual members' meeting. Membership cost \$50 per year, \$25 for students: telephone: 512 343 1111.

**WHAT TO WATCH IN THE NEXT FEW YEARS:
ANALYSIS OF THE APPLE/IBM AGREEMENTS**

By Harley Hahn

There's a riddle that goes: "what do you get when you cross Apple and IBM?" Up until this week, the answer was "IBM," meaning that an Apple/IBM collaboration would result in the attenuation of Apple as a separate entity. But now the premise of the riddle has become real and the question deserves a real answer. What do you get when you cross Apple and IBM? You get a better Apple, a better IBM, as well as two brand new companies. The announcement of October 2nd is of overwhelming importance for two reasons. Firstly, IBM and Apple are large, powerful players. The fact that they are making so many agreements is significant in itself. Secondly, and more importantly, is the vision: if you read and listen closely, you will find a version of the future in which human beings have a new generation of tools for thought and for creation. This is a vision of awesome promise and transcends the new products and commercial considerations of either company.

(1) Watch for the POWER PC chips being used for small Unix-based personal workstations, faster than anything available today. Although IBM and Apple will sell such machines, there will definitely be other players.

(2) Keep one eye on Bill Phillip, IBM Vice-President and General Manager of the Advanced Workstation (RS/6000) Division. He is the point man for the next few years. Keep your other eye on the two people who are chosen to head the new multimedia and object companies. These will be very important jobs.

(3) As work starts on PowerOpen, it will become clear that the project will require massive amounts of highly skilled programming. Watch IBM form new alliances to help with the work. In particular, look to Interactive System Corporation as becoming part of the show.

(4) Do not forget Microsoft. It has what is arguably the largest and best personal computing programming factory in the world. They will shift gears and become a leader.

(5) Finally, watch Phil Hester, the visionary behind the RS/6000, become IBM's hardware superstar of the 90s (the superstar of the 80s being Chet Heath). Hester's name will be remembered long after Gates, Jobs, Wozniak, Norton, Akers and Sculley are forgotten.

NOW APPLE AND SONY MOVE CLOSER

The New York Times has firmed up last month's story about Apple and Sony's developing relationship, saying that the two are negotiating alliances approaching in scope the ones between Apple and IBM Corp. The interest of the two companies is in incorporating Apple's basic user interface software with Sony's next generation of consumer electronics products in the hope of finally coming out with products like a video cassette recorder that grown-ups are able to program.

IBM LAUNCHES IBM OEM EUROPE, PITCHES FOR A 5% SHARE OF THE OEM MARKET BY 1995
IBM Corp is formalising its original equipment manufacturing activities by establishing IBM OEM Europe. It is part of a worldwide division targeting a market estimated to be worth some \$100,000m by 1993. IBM currently holds around 1% of that market, and it plans to increase that to 3% by 1993, 5% by 1995. The company says that it has been involved in OEM activities since 1981 when it started supplying disk storage devices to Siemens AG, but it believes that there are compelling reasons to expand its activities. Not least of these is profit. OEM margins are high, and increased demand for IBM products means that volume production should reduce costs.

NOW NON-STANDARD LOGICS WADES INTO GUI BATTLE - TARGETS US OEMs WITH WISH...

From some points of view it might be a little late in the day but there's another contender wading into the desktop management arena claiming its technology is superior to Visix or IXI. Paris-based Non Standard Logics is at least as old as either of its competitors but has so far failed to attract much attention outside its home market, except in these pages (UX Nos 349, 345, 298, 284, 276, 222), having apparently disdained to chase the American OEM: until now that is. It's got its first worldwide bundling deal under its belt. Atari is putting it on its upcoming 32MHz 68030/SVR4 TT/030 Unix/X workstation which will be shown next week at Comdex and will go on sale in the first quarter after applications become available (UX No 298). Atari has bought off on both NSL's Wish2 object-oriented iconic shell and its mouse or keyboard-driven Wx2 text editor, a standard feature with the software. For developers there's also XFacemaker2, an interactive Motif-compliant GUI development tool that uses real Motif widgets. Developer tools include the Free Software Foundation's compilers and debugger. Atari says it has no reluctance to employ an obscure manager since it sees no rising standard as yet. NSL has ported the Wish2 desktop to other systems including the Sparc and MIPS-based boxes, anticipating fourth quarter availability. Future ports include IBM, Hewlett Packard, DEC, Bull, 386/486 Interactive and SCO. The more widely used XFacemaker is already available on all the major platforms. The company, which has opened an office in Santa Barbara, California, is considering a number of sales channels including bundling the manager together with Unisoft's rendition of SVR4. Features include an avoidance of proliferating windows, design for NFS distributed computing, on-line help and roots in C. The company expects to have a full word processor next year. The new Atari box, by the way, features either 8MB or 18MB memory, a 200MB or 340MB drive, Ethernet board, 19-inch monochrome screen and NFS.

...AS IXI CORP RECORDS \$1m OF BUSINESS SINCE JUNE

Meanwhile, UK desktop manager firm IXI Ltd, Cambridge, says it did the equivalent of \$3m its last fiscal year ending in August and will have pre-tax profits of 5%: its spanking new American operation, IXI Corp, with offices in California and Minnesota, has reportedly done \$1m worth of direct business since June, focusing on large end users where it's pushing the Sun and Hewlett-Packard versions of X.desktop on the theory that the Fortune 500s don't want to be tied to hardware merchants for their GUIs. The US numbers did not impact UK turnover.

NO LONGER AN "NCS BIGOT", VXM's DISTRIBUTED TECHNOLOGY SUPPORTS SUNSOFT NAMING SERVICE

Balans, the distributed batch queuing and network load balancing software from VXM Technologies, now supports the new SunSoft ONC distributed naming service NIS+, announced last week at InterOp. VXM delayed shipping Balans until NIS+ was ready. According to VXM president Franco Vitaliano, who described his company as an erstwhile "NCS bigot," NIS+ coupled with the Netwise RPC beat OSF's DCE Location Broker hands down thanks to features such as security and access rights, greater scalability to very large networks and hierarchical directories. VXM's turnaround was so complete Vitaliano said, "our developers now refuse to go back to using NCS." NIS+ will be embedded as an integral part of the Balans distribution binaries. Users of other network naming services can co-exist, making Balans-IDS one of the first interoperable distributed network applications available. Balans/NIS+ will be initially available on Solaris 1.0 in late Q1, costing less than \$400 a node on medium-sized networks, the company said, with Ultrix and HP/UX to follow. Balans-IDS will be sold primarily through VARs and systems integrators. Nissho Electronics may pick up an exclusive option to market the software in Japan.

ORACLE IMPLEMENTS PARALLEL SERVER VERSION OF ORACLE 6.2 ON NEW MEIKO SPARC BOXES

Oracle Corp has announced the first system running its Parallel Server implementation of version 6.2 of its relational database for Bristol-based Meiko Scientific Ltd's Computing Surface, with versions for other environments including those of Parsys Ltd and nCube Inc to follow. Parallel Server, announced in March, is designed to overcome the performance overheads associated with high volume transaction processing applications by using parallel technology to escape the curse of bottlenecks and contention problems. Meiko - founded in 1985 by former Inmos International Plc scientists - has switched from the world of Transputers and the Occam assembly language to Sparc-based microprocessors running binary-compatible SunOS 4.1, pitching parallelism as a high-performance architecture that looks just like the one Unix users already know and love. Both companies have combined these parallel approaches into the Relational Datacache, whose beta test users include National Westminster Bank Plc and British Telecommunications Plc - the latter intriguingly muttering about looking at it as "part of a platform strategy for network management". Selling points include portability, since Oracle claims ordinary Oracle applications can be implemented for the Datacache; scalability, since adding a node to a parallel set-up is supposedly easier than balancing workload in a symmetric multiprocessing configuration; and price-performance. Soon every Oracle employee will share founder Larry Ellison's love affair with the massively parallel computing future - Ellison's nCube sideline company announced an Oracle benchmark of 1,073 transactions per second earlier in the summer at a price per transaction of \$2,482, less than that of an IBM Corp MVS mainframe. Pricing is per user and costs no more than Oracle's usual Unix version, with an additional Meiko fee, though Oracle is also pushing the product to VAX users and as a networked database server - "the transition tool to open systems from the VAX/VMS background," it claims. All the implementation was done at Utrecht in Holland.

CDC ADDS NEW MULTI-PROCESSING MIPS MACHINES TO 4000 SERIES

Control Data Corp, Minneapolis, Minnesota, this month debuts three new multi-processing InfoServer systems in its 4000 series, which are sourced from MIPS Computer Systems Inc. The high-end, 4680 - previously only available as a uni-processor machine - is CDC's variant of MIPS' RC6280, based upon the Sunnyvale, California-based firm's R6000A ECL RISC part. It comes with a SPECthroughput rating of 205.5 in four-processor configurations. With two CPUs it reaches 112 transactions per-second using the TPC-B test suite, supporting up to 820 users. A four-processor box with 128Mb memory is priced at \$325,650 - upgrades from uni-processor systems are available. New also are the R3000A-based 4370 - with up to four CPUs it has a SPECthroughput rating of 112.8 - and the rack-mounted 4375, which comes with up to eight of the RISC parts and is rated at a SPECthroughput mark of 184.8. A two-processor 4375 supports up to 491 users and is claimed to do 52 transactions per-second using the TPC-B benchmark. A single-processor 4370 with 32Mb RAM and 663Mb disk is priced at \$56,500: an eight-way 4375 with 128Mb memory and 633Mb disk comes in at \$225,500. All run CDC's EP/IX version of MIPS' RISC/os symmetric multi-processing Unix implementation, come with TCP/IP and support OSI, FTAM and X.400 applications. CDC says the VME DAS disk array subsystems - originally designed for its mainframes - are now available for the multi-processors: prices start at \$18,400.

CISCO, SYNOPTICS TO DO RUBSYSTEM TO COMBINE ROUTERS, HUBS

For those that are already confused by the proliferation of routers and hubs, here's the Rub - seriously, Redwood City-based Cisco Systems Inc and Santa Clara-based SynOptics Communications Inc have signed a letter of intent for joint development of a "fundamentally new" network system that integrates router and intelligent hub technology. They are calling it the RubSystem, and say it will enable organisations to build networks significantly larger and more complex than those used today, with Cisco supplying the router and network management technology and Synoptics the advanced hub and its own network management to create a system with high-performance routing capabilities. The basis of the new system will be SunNet Manager from Sun Microsystems Inc's SunConnect. The two say that they will develop multiple hub, router and management products that encompass Ethernet, Token Ring and Fibre Distributed Data Interface wide area network technologies in parallel design efforts over the next two years, starting with jointly designed network management applications. Meanwhile, Ungermann-Bass Inc is reported to be readying Sun Microsystems Inc Net Manager, Hewlett-Packard Open View and other Unix versions of its OS/2-based network management applications that run over the Access/One hub.

SCAN-OPTICS DEBUTS UNIX BOXES

Scan-Optics this week is due to unveil a brand new line of Motorola 68030/68040 boxes at its distributors conference in Palm Springs: A shift away from its proprietary Business Basic supermicros, the new VME-based Sonix tabletop and floor-mount stuff runs System V.3 while retaining Business Basic language and file structures, key entry applications and proprietary LAN. The line, which goes into beta in worldwide sites next month, is meant to replace the company's old System 3200 and provide a bridge into the Unix growth market. The line will support the company's high-end OCR products and its new Unix-based SabreView imaging subsystems.

MIPS USES SECUREWARE FOR B1 SECURE RISC/os

MIPS is using SecureWare technology in its SVR4 iteration of RISC/os, now in beta, to give it Orange Book C2 and B1 ratings. The irony of MIPS' current situation will be staying viable long enough to find out whether ACE will work. It's facing huge losses, systems sales are depressed (a reason for it to turn to SVR4?) and ACE revenues won't kick for a while. It's been reorganising and giving a golden handshake to a lot of talent while hiring new talent at the same time. One of those who left was Bill Jobe, originally executive VP of sales, marketing and service, and the man who put many of the company's crucial deals - DEC, Prime, Bull, Tandem, CDC - together. He stepped into a new role as president of MIPS Technology Development, a venture capital operation, after Chuck Boesenberg came over from Apple as MIPS president. The VC operation, having made two investments, Vitesse Semiconductor and X Windows display house Athenix, has been shelved in the belt-tightening.

ADDS TAKES ON DISPLAY BUSINESSES

It's been decided that the AT&T and NCR VDT businesses should be combined under the aegis of NCR's terminal subsidiary ADDS which will do all the manufacturing and product design from now on. The addition of AT&T's multisession/multihost 730+ X-terminals will give ADDS a high end. There may be some eventual rationalisation at the low end, perhaps with the AT&T 750CX, but for the moment the company is saying both the AT&T product line and its own 3413s and 3414s will continue. ADDS also maintains there is no overlap with their Unix system terminals and that both the ADDS 4320 series and AT&T 615, 705, 710 and 715 will go on. AT&T will discontinue manufacturing at its sites in Mexico and California and use the facilities and staff for other production needs. Meanwhile, AT&T's former director of its display terminal and printer business unit, has been named VP and general manager of the X-Station unit.

ACE CARDS

No one at DEC - or among the other ACE/USL negotiators for that matter - could lend credence last week to reports printed in *Computer Systems News* that DEC was drafting plans to propose VMS as yet another operating system for ACE. DEC has said, though not very publicly, that it would be willing to license VMS to other vendors. It also has project Alpha, its own Risc development effort designed for VMS. Alpha boxes, ranging from the desktop through to mainframe-class machines, are meant to supplant the VAX product line over time, with the first due out next year. CSN said DEC is determining whether Alpha can be merged with the ACE architecture.

Just because ACE went for SVR4 doesn't mean the Apache Group can now fold its tent and go home: also known as MIPS/Open (UX No 343), the bunch is likely to formally acknowledge its existence and turn into an ACE special interest group with USL one of the ring leaders.

Besides picking up SVR4, ACE last week also expanded its spec to include a common install procedure and Silicon Graphics' 3D graphics environment consisting of the Iris graphics library, ISO PHIGS and PEX as well as X11: It will pick up Posix 1003.4 when it becomes available.

Embracing SVR4 means ACE loses absolute binary compatibility: Compaq says the issue is technically solvable and suggests the repair effort will start this week. On the other hand, it is said that embracing SVR4 solves certain inconsistencies inside of ACE in the kernel and interface that could have become glaring.

Also according to Compaq the OSF/1 side of the house will have more work to do making the necessary accommodations to the new dual-kernel approach such as incorporating SVR4 interfaces not in OSF/1 while USL will simply have to add "four or five system calls." DEC says this is SCO's problem, DEC having done its bit. But no one seems to think it will impact ACE's timetable.

Compaq says it hopes the new accommodation will have an impact on Unix camps outside the ACE Initiative.

USL will not only make SVR4/ES ACE-compliant but also its anticipated "Unix Lite" for the desktop.

Odd isn't it how it took a non-Unix company like Compaq to begin to heal the Unix breach. If there's an unseen hand in this, his name is John Paul who, let us remember, was once seconded as development director: his tenure didn't affect his vision.

Obviously SVR4 in ACE threatens SCO's position at least as far as being the sole source of Unix for ACE. SCO's reaction to SVR4 generally continues to border on rabid (UX No 353) and so it will apparently not be distributing the ACE SVR4 software: they didn't give us a chance to ask, however, being the only company in this not to return our phone calls last week. It was also hard to tell what SCO was thinking from the ACE press release since the canned quote from SCO chief Larry Michels bore no relationship to the matter at hand. Apparently SCO can't swallow its pride the way USL did when it agreed to support all that OSF technology.

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NCR is gearing up to announce a multi-processing Unix SVR4 implementation for its Series 3400 and 3500 systems: meanwhile its massively parallel 3600 will debut - in a limited configuration with eight Access Module Processors, two application processors and a 10Gb database - at the Unix Expo International show, which runs from October 30th to November 1st in the Jacob K Javits convention centre in New York.

Auspex, which until now has sold only direct, is starting to sign integrators like TRW Systems Development to go after the federal agencies: plans are for six this year, seven or eight next and that they contribute 15% of the firm's revenues initially; 33% by 1993.

In December, Silicon Graphics Inc, Mountain View, California, is expected to introduce a B1 secure version of its Irix Unixlike: trusted Irix/B has been under development for two years, and US Defense Department B1 security is now being required in an increasing number of Government procurement contracts.

Datapoint Corp, now headquartered in Paris, has moved into the multi-processor Unix server market with two new servers and an X-terminal, all sourced from Taiwanese-owned Wyse Technology Inc. The servers, based on the 9000i and 5000i are the 4925, built around multiple 80486 processors with support for up to 300 users, and will be available in Europe - where Datapoint does most of its business these days - this month, and the 4733, using 80386s, which supports up to 100 users and ships in November. Both servers run under symmetric multiprocessing Unix System V.3.2.

Tera Microsystems Inc, Santa Clara, California, has appointed former Star-vent Computer Inc chief architect, Dr Glen, Miranker as vice president of engineering.

Corollary Inc, Irvine, California, has added a SCSI processor to its 486/smp multi-processing subsystem: the 486/smp SCSI uses a 33MHz Intel Corp 80486 part, SCSI 2 adaptor and is compatible with the existing 386/mp SCSI module - prices start at \$6,000, upgrades are available from \$3,000.

Hewlett-Packard Co's workstation division is to begin selling its Series 700 systems through dealers that will provide multi-system integration services across a range of markets: HP has signed MicroAge and Intelligent Electronics as master resellers to recruit up to 75 of their franchise dealers for the programme.

The Apple/IBM/Motorola team have in mind to create a routing section to promote their anticipated PowerOpen/Power PC architecture industry-wide. Something along the lines of 88open, we understand. Since the talk of trying to make the PowerPC chip pin-compatible with the 88000 (UX No 348), is apparently true, the notion of using 88open itself as the entity is believed to be in the hopper.

Meanwhile, the long-awaited 88110, due to be announced next month, has been designed using HCMOS and superscalar technology: peak performance should be in the region of 100 MIPS, with sustained around 70 MIPS to 80 MIPS. Altogether very much like the SuperSparc, aka Viking, chip coming from Texas Instruments and Sun except it's less complex with under 1.5m transistors (versus Viking's 3.5m) on a 0.08 micron wafer.

One of our listening posts in New Zealand reports that IBM is downsizing its local operation by 30%: all staff have been offered voluntary redundancy on favourable terms. At the start of 1990, IBM New Zealand had 750 staff. Now they have around 630 and are shooting for 400 by the end of the year.

Following its decision to set up Open Systems Solutions, a systems software operation in California, Fujitsu Ltd has now bought a 40% share in Australia's Softway Pty, a Leading Unix system software house Down Under.

NEC is reportedly shying away from Unix on its mainframes insisting the operating system is better suited to workstations and supercomputers with Hitachi, which has tried for some time but with little success to sell mainframe Unix, seconding its opinion.

Addamax has ported its secure SVR4-based operating system to Okidata Microsystems' new 7300 family of i860 boxes announced last month (UX No 352): as part of Oki's Act.sess independent software vendor programme, Addamax's Compartmented Mode Workstation (CMW) software is one of a reported 100 packages supporting the 7300. It features a trusted X-Window system and supports both Open Look and Motif.

The 42-member SQL Access Group Consortium backing multivendor database interoperability has a new chairman: research and development section manager for Hewlett-Packard's database laboratories, John Robertson, takes over from Informix chief Roger Sippl.

Sparc now has a Thai recruit, Tavon Computer, which reportedly got a grant from its government to develop a Sparc workstation.

Olivetti showed off an R4000 ACE machine at the chip's introduction in San Francisco the week before last: it's not a commercial implementation but has been designed to jumpstart software development and will start going out to ISVs this month. It includes 4MB of memory expandable to 64 MB, a 1.44MB floppy, four 32-bit EISA expansion slots, an Ethernet port, support for stereo audio and a 1280 x 1024 screen with 24-bit colour. Meanwhile, the ACE Initiative appears to be orchestrating a concerted push to recruit Taiwanese PC merchants.

Sunnyvale, California-based MIPS Computer Systems Inc warns that preliminary financial information indicates that technology revenue - from licensing its RISC designs - for the third quarter will be lower than previously expected, although product revenue should meet the company's expectations, but the technology business shortfall will significantly increase the loss from operations that was feared.

Ask Computer Systems Inc's Ingres Corp is shunning the US National Computer Security Center evaluation for secure databases that Oracle Corp, Informix Software Inc and Sybase Inc have all signed up for: instead, it says it is going for the European Information Technology Security Evaluation Criteria for level E3 rating, which is similar to the US government's B1 rating.

MIPS Computer Systems Inc's RISC architecture is receiving growing attention in Japan, and the latest company to license the design is Nippon Kokan KK, a member of the Advanced Computing Environment initiative and Convex Computer Corp's partner in Japan. The steelmaker has signed with one of MIPS' licensees, Integrated Device Technology Inc, for rights to fabricate versions of the R3000 version of the RISC, starting from the middle of 1992 at its new Electronic Device Research Centre in Ayase.

ModComp last week cut the tags on its Unix Real/Star systems and peripherals 17% to 60% trying to get below other real-time vendors such as Harris, Encore and Concurrent and most of garden-variety workstation houses that don't have real real-time systems: ModComp said non-real-time boxes have been taking business away on the basis of price alone. Its pricing now begins around \$30,000.

Circle your calendars: October 29 is the day the Object Management Group trots out its massively merged Object Request Broker.

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, October 21-25 1991

Number 356

DESTINED TO WORK TOGETHER: USL AND NOVELL PLAN JOINT VENTURE, REVEAL BONES OF MASS DISTRIBUTION ALLIANCE

Unix System Laboratories Inc dropped another shoe last week, announcing, as anticipated (UX Nos 354, 353, 350), the skeleton of a mass market distribution arrangement for SVR4 with Novell, its largest stockholder outside of AT&T. Word of their agreement, currently still only a memorandum of intent, followed within days the acceptance of SVR4 as part of the ACE Initiative (UX Nos 354, 353). Novell and Unix System Laboratories said they intend setting up a joint venture to develop and market products and services "to enhance NetWare and Unix System V Release 4 interoperability." Citing SEC restraints, the new partners declined to discuss any of the specifics of their intentions - even their proposed division of control over the joint venture - before a definitive agreement is complete, sometime in the next 60 days. All they would say, in fact, was that they will be moving sales, marketing and distribution resources into the new unit, staffing and funding it sufficiently to bring initial products to market rapidly. The money and the manpower are likely issues of further negotiation. Sources outside the two companies, however, believe the venture is being designed to handle "Destiny," the internal code name for Unix System Laboratories' anticipated Unix Lite or Desktop Unix effort, the miniaturised version of SVR4 meant for Intel 386/486 boxes. If so, the venture will be Unix System Laboratories' first experience of the shrinkwrapped binary market. Destiny is expected to ship in the second quarter and the venture is not expected to be its only distribution point. However, the venture also need not limit itself strictly to binaries, one source speculated, figuring that it might resell source code to some of the OEMs with which Novell has long-standing relationships. The venture is presumed to be focused on the client/server aspect of the Intel market, which accounts for Novell's interest in it for NetWare, whose various pieces will apparently be integrated into the venture's offerings. Novell has some 5,000 authorised resellers on its books considered to be reasonably technically competent outlets because they install networks and are therefore prime candidates to move Unix.

TOSHIBA SIGNS TO MAKE MIPS R3000, R4000 RISCs

Early last year, there was talk that MIPS Computer Systems Inc wanted Toshiba Corp to fabricate R-series RISC chips for MIPS to sell under its own name, and later it emerged that Toshiba was an architecture licensee to the general R-series design (UX No 325). Now all the talk has come to fruition with an announcement from Toshiba America Electronic Components Inc that Toshiba Corp's Semiconductor Group has entered into a licensing agreement with MIPS under which Toshiba becomes a MIPS Semiconductor Partner, obtaining the right to design, develop, manufacture and market MIPS' R-series, including the R3000 and R4000 (UX No 342). The move is despite Toshiba's favouring of the Sparc in workstation products up to now, and of the fact that there is already one Japanese licensee in the shape of NEC Corp. Toshiba plans to bring its own devices to the world market in early spring 1992. Toshiba will also develop and diversify product lines to include its own designs of devices based on the R3000 and R4000 architectures, and offer chip sets integrating peripheral components around the cores of the two parts.

SEQUENT PARALLEL NETWARE SERVER WILL SUPPORT 1,000

Sequent Computer Systems Inc, Beaverton, Oregon last week introduced its Sequent Information Server multi-processing relational database computer running a parallel-enabled version of Novell Inc's NetWare. Developed jointly by the two companies, NetWare for Sequent Information Server is the first version of NetWare specifically designed to support as many as 1,000 concurrent database users. It will be available in January 1992 at from \$25,000 to \$2.5m depending on the size of the system and the software will be available for existing Sequent Symmetry systems at the same time at from \$1,500 to \$17,500 depending on system.

OSF GIVES UP BOARD SEAT AT X/OPEN, SEEKS BACKSEAT ROLE

The Open Software Foundation is downgrading the status of its relationship with X/Open Co Ltd, the international standards-setting body that it joined in back in May 1989, at the same time as its then bitter enemy, Unix International (UX No 231). OSF - currently a member of the X/Open board - will relinquish its shares on December 31. OSF cites its charter as a not-for-profit supplier of technologies and X/Open's current process of re-structuring (UX No 346), for the change of heart. However, OSF was toying with the idea of pulling out of X/Open as long a go as last year, ostensibly for financial reasons (UX No 318), and X/Open believes finances are the main issue behind its current decision. The burdened cost of an owners' share in X/Open runs a company around \$1m a year, and OSF has experienced attrition among its founder members, its largest financial supporters. OSF admits "cost is a factor." Users may consider the amount a small price to pay for the influence wielded over the X/Open process by a board member. However, X/Open has also been something of a thorn in OSF's strategy over the last twelve months, trying to bar it at every turn from passing off its products - DCE, DME and Motif - as standards. This is a situation, insiders believe, OSF has had trouble accepting, though X/Open has evenhandedly refused standards status to the Unix SVID. Currently, OSF remains publicly committed to X/Open's criteria, and could take a seat on X/Open's 20-member Independent Software Vendor council - a role for which it has petitioned. The ISV council is allowed one board member. On the other hand, OSF may decide to start distancing itself from the organisation sometime in the new year. The telltale signs would be a bucking up of its AES framework upon which the OSF/1 operating system rides, a backing off from X/Open's XPG portability guide, and any movement towards a branding and certification process of its own. Meanwhile, X/Open is reportedly expecting further attrition amongst owners next year due to merger and acquisition activity and belt-tightening.

SUN GIVES LSI, TERA AND FUJITSU

THE GREEN LIGHT FOR 40MHz SPARC 2

Sun finally went ahead last week and authorised LSI Logic, Tera Microsystems and Fujitsu to resell the LSI-made uniprocessor-designed 40MHz chip set that Sun itself uses (UX Nos 355, 354, 343), as well as jump-start Sparcstation 2 board designs. The move makes the playing field a little more level for low-end Sparc cloners, who have complained of being unable to compete effectively against Sun's technological lead. Rights to distribute the Sparcstation 2 board design means other companies like Tera will be able to come up with instant Sparckits just like LSI did in the first go-round with the Sparcstation 1. Sun's motive in turning its technology loose is believed to be partially defensive: heading off advances into its clone base by the ACE Initiative, if not the Apple/IBM league. Sun will also be licensing its prized GX Graphics technology to cloners both directly and through the chip vendors. In addition, it has authorised Sony, its CD-ROM supplier, to sell those drives to the Sparcettes. Tera, which is calling its LSI/Sun line the TS-2, deferred pricing until after a pow-wow with its supplier. LSI, which will be offering Sparckit-40/SS2 motherboard manufacturing and graphic manufacturing kits, said production quantities of the chipset will be available next month, priced at \$844 in quantities of 100 and the kit at \$5,000.

VERTOS IS LATEST TAIWANESE SPARC CLONER

Vertos is another young start-up with two Taiwanese investors, including PC clone vendor Elite Group Computer Systems, and another unidentified concern with manufacturing resources outside the US apparently at Vertos' disposal. Vertos, currently with only 10 people but "ramping up quickly," is already divided into two business units: a PC Systems Division and an Advanced Systems Division responsible for emerging marketplaces and hence the Sparc effort. The PC division will be building its own Intel boxes but has also been designed to absorb Sparcs as they become commodities. Right now, however, Advanced Systems is responsible for the company's anticipated 25MHz LSI-based Sparcstation 1 clone, expected to go into beta after Comdex, and a Sparcstation 2, whose chip is still subject to evaluation. Vertos expects to develop three channels: high-end technical PC VARs whose margins are narrowing, the regional and even national distributors Sun cut off and the European market where it's projecting 50% of its business will lie. Initial volumes of course will be small. In light of its European aspirations, it's figuring on ergonomic value-adds. Like Sparktrum, Vertos too is interested in the notebook market.

...DTK WILL TRY HARDER THIS TIME AROUND

Nothing much has been heard from DataTech Enterprises, the \$200m-a-year Taiwanese PC maker better known in Europe and the US as DTK Computers, since last Comdex when it was part of the vanguard of companies trying to break into the low-end Sparc clone market (UX No 310). This year it's back for its second try. In addition to the SSM/40, a Tera-based machine of shadowy specifications, it also plans to show up with four other Sparcstation clones. The bottom-end 16 MIPS Station 1 uses an LSI 25MHz CPU, 8MB standard main memory expandable to 64MB, 207MB hard drive expandable to 414MB, three SBus slot, a 19-inch colour monitor and Solaris 1.0. The thing can be upgraded to a 28 MIPS Station 2 which runs an LSI/Sun 40MHz chip. List is \$6,300 and deliveries are set for the second quarter. The company also has two Cypress-based boxes, the 21 MIPS/33MHz Station VME with three VME slots bundled with Sun/OS 4.1.1 and Open Windows for \$7,000 and a 28 MIPS/40MHz Station 2 VME running Solaris 1.0. Delivery is slated for the first quarter.

TERA CLAIMS FIVE "DESIGN WINS"

Tera Microsystems also announced five "design wins" for the 40MHz version of its microCORE chipset, its home-grown Sparc implementation (UX No 354, 347, 344). Three of the companies, Datech, Hyundai and Trigem, are familiar names already active in the Sparc clone business. The other two, Sparctrum and Vertos, are new to the marketplace. How solid these "wins" are, however, remains to be seen. All five firms apparently intend to have working prototypes of a Tera-based system at Comdex this week, but for most of them the project is a dry run, testing how well the silicon performs. LSI, Fujitsu and Cypress are being evaluated as well.

SPARKTRUM WILL USE THE TERA/WEITEK SET

Six-month-old Sparktrum Microsystems, however, has no doubt it will be using the Tera/Weitek implementation. The San Jose, California-based company is a joint venture with two Taiwanese firms, components maker Conquer Electronics and another that remains unidentified. Sparktrum expects to turn up at Comdex with its first product, the SK400 Color Workstation, a Sparcstation 2 clone which it expects to sell direct (30%) and through high-end PC VARs (70%) bundled with some software it's trying to arrange. Its distribution channels are still in negotiation too, but it's figuring on volumes of 50-100 units a month starting next quarter. Down the road it is toying with the idea of using Tera for a Sparc notebook, figuring it might be able to design a \$3,500 100MB 7.5-lb monochrome unit in the third quarter, followed by a \$6,000 colour version.

CERAM HAS TURBOSWAP SPARC BOOSTER

Privately-owned Colorado Springs, Colorado-based Ceram Inc's Swiss operation, Ceram Electronic SA, Marin, has introduced an accelerator card for Sun Microsystems Inc Sparcstations, which, it claims, can improve application performance by between 2 and 20 times. The 1990 start-up firm's TurboSwap cards expand system memory in a workstation, and are available in 40Mb and 80Mb configurations. Each uses one SBus slot in the cabinet and up to four can be configured at a time: no prices given.

VISIX SCEPTICAL OF ACE INTERFACE EFFORT

Compaq and Unix System Laboratories, the new ACE cronies, may have notions about creating a common application programming interface, API, that covers such desktop managers as IXI X.desktop, HP VUE and Visix Looking Glass as a waystation on the road to a universal solution (UX No 355), but they haven't seen fit to mention the fact to Visix. To call him sceptical would seriously minimise Jay Wettlaufer's reaction to the idea. Visix's chairman says he doesn't know what an API for desktops is, or how it can be defined. Giving Compaq and Unix System Laboratories little credit for knowing what they are doing, he says he is going to try to ignore their efforts, estimating them a "waste of time." Although he gives their premise little to no chance of succeeding, if it did, he says, it would stifle innovation. After nine years in the Unix business, Wettlaufer is ready to branch off into Windows, NT and Macintosh in that order, with some new distributed multiplatform Visix technology code named Pegasus that will come to market as Galaxy. He's currently sitting at the helm of a company that's worth \$12m a year and growing at the rate of 80% a year, but his business plan says it should be doing \$25m, a situation shared by other Unix software houses, he says. The reason: Unix just can't cut it. It had the world in the palm of its hand a few years ago and blew it. It failed to create a software development environment that people can use and would write to. Hence, there is no software; there are no channels; boxes aren't sold. If he had to do it over again, he would go for the high-end graphical PC market where "people appreciate quality." He's determined not to miss the second chance: the next few years will see Microsoft capture 90% of the desktop; IBM/Apple the other 10% and Unix zip, he says.

APACHE GROUP SET TO COME CLEAN

Between now and Unix Expo, ACE's renegade Apache Group, aka MIPS/Open, is set to come out from behind the curtain and formalize its existence probably as MIPS/SVR4. It is believed it may add to its ranks with some new adherents from the SCO/OSF/DEC side of ACE. It's been proselytizing among Independent Software Vendors now for months and should turn up with an ISV support programme and a shrinkwrap plan. Oracle, Informix, Ingres and perhaps even WordPerfect should announce their participation. Sources inside Apache, a name they would now like to distance themselves from, indicate a fracture of ACE was averted by the Initiative's decision two weeks ago (UX No 355) to accommodate SVR4. Luckily it never came to an ultimatum.

HITACHI HAS VOTING FAIL-SAFE UNIX ON 68040 BOX

Hitachi Ltd has followed Tandem Computers Inc in using the voting system of fault-tolerance for its first shot at a fault-tolerant Unix machine. The new Hitac FT-6100 uses three Motorola 68040s - but unlike the Tandem Integrity S-2 machine, it can also be used as a non-fault-tolerant multiprocessor. The company has gone back into the past for Unix, using its System III-based HI-UX, with real-time, fault-tolerant and interactive multiprocessing functions added. Oracle Version 6.0 is offered as the relational database. Communications supported include TCP/IP and Network File System plus Hitachi's HDLC implementation of SDLC, and Ethernet-compliant CD-105 and FDDI local networks. Pricing starts at a daunting \$1.13m, with deliveries starting January.

FUJITSU DEBUTS SPARC BOXES IN JAPAN

In Japan only, Fujitsu has reportedly unveiled its range of Sparc workstations which go to 58 MIPS (UX No 307). Called the DS/90 7000 series, the family comprises everything from laptop to servers. Using 25MHz, 33MHz and 40MHz Sparcs, the boxes run Fujitsu's SVR4-based UXP/DS Unix, according to the *Japan Industrial Journal*. A high-end 7830 server with two CPUs costs 6.55m yen - \$49,000 - whilst the laptop comes in at around 1.4m yen, or \$8,250.

SANTA CRUZ HAS LAN MANAGER FOR UNIX, MULTIVIEW 3.1

Santa Cruz Operation Inc has a string of new and upgraded products headlined by its packaged version of Microsoft Corp LAN Manager for Unix. To the standard LAN Manager, Santa Cruz has added Unix System client support, IBM-compatible NetBEUI transport support, virtual terminal facilities for Unix System log-ins, co-residency for multiple transport protocols, and multiprocessor support for systems with the Santa Cruz MPX multiprocessor performance extension to its Unix System V and Open Desktop. It can be used over backbone networks already using Santa Cruz's TCP/IP or OSI transports. The product integrates servers running its Unix V implementations with any combination of MS-DOS, Windows, OS/2, Xenix, SCO Unix V, and Open Desktop clients. A five-user starter pack for five users is \$1,300; adding 10 more users is \$1,500 and an unlimited-user upgrade is \$5,000. The company now has release 2.0 of its Open Systems Interconnection software in four bundles - SCO OSI for Unix, including FTAM, Virtual Terminal, X400 User Agent, LAN Transport, NetBIOS Support, TCP/IP Interface and Drivers for local net boards; SCO X400 for Unix, an add-on with X400 Mail Transfer Agent, X400 Reliable Transfer Service and Gateway to Unixmail; SCO OSI for MS-DOS - FTAM, X400 User Agent, LAN Transport and LAN Card Driver; and SCO OSI Development System for Unix, with programmatic interface for Application layer, Presentation and Session layers and Programmer's Guides; no prices. And the company has added the 3.1 release of Macclesfield, Cheshire-based JSB Computer Systems Ltd's MultiView DeskTop, the latest version of the Microsoft Windows application that enables users to view multiple MS-DOS, Windows, Xenix, and Unix applications simultaneously in multiple, configurable windows on a microcomputer. It's \$300 for two users, \$1,800 for 10.

MOTOROLA ADDS 68040 AND 88100 DELTASERIES MODELS...

Motorola Inc's Computer Group in Tempe, Arizona has at last started building the 25MHz 68040 into a family of multi-user systems and servers launched as the DeltaSeries 4000 family - the name appears to have collapsed into one word. The company also expanded its DeltaSeries 8000 RISC-based machines with new models using the 25MHz M88100 single board computer. The four 4000 machines run Motorola's implementation of Unix System V/68 Release 3.0, Version 7. The new DeltaSeries 8000 systems support System V/88 3.2.3 and will provide compatible migration to M88000-based System V/88 4.0. The new families use the MVME167 and MVME187 single board computers respectively and the DeltaSeries 4000 systems are rated at 26 MIPS on Dhrystone 1.1 measurements, with prices starting at \$9,470. The single processor RISC models are rated at 38 MIPS on the same benchmark and they start at \$7,000. DeltaSeries 4000 shipments start in mid-November, and the 8000s started shipping this week.

...AS DATA GENERAL ADDS SINGLE, DUAL MID-RANGE AVIIION SERVERS

Data General Corp continues to plug what are becoming imperceptible gaps in its AViiON line of Unix servers with the launch of the AV 4300 series, with uniprocessor and 4320 dual processor versions. They use the 25MHz version of the 88000 RISC and come with 16Mb to 128Mb of memory, 332Mb to 8.4Gb of disk. The uniprocessor is rated at 29 MIPS with maximum user load of 159, the dual at 58 MIPS with 261 users. The AV 4300 with 16Mb and 332Mb disk, plus tape cartridge is £13,000. The company also has a new 1.4Gb full height 5.25" disk, £9,520.

CONCURRENT PROMISES NEW 3200 MINI, ENHANCES OS/32

Troubled Tinton Falls, New Jersey-based Concurrent Computer Corp promises a more powerful Series 3200 mini and a new high performance memory system. The new processor and memory system will be fully compatible with Concurrent's Model 3280 and Micro3200 systems. The company has also come out with a new release of the real-time OS/32 for the minis: 9.1 is designed to exploit the Auxiliary Processing Units in Series 3200 multiprocessor configurations more effectively and adds multiple foreground task support, a new screen editor, doubling of the number of tasks that can be executed on the system, tripling of the number of development environments and enhanced password management. The operating system is now in compliance with the US National Computer Security Centre C2 security level. Real-time performance is increased with optional disabling of service calls, task manager optimisation, and enhanced utilities for multiple record read and writes. The decision to develop a new CPU keeps faith with users of the 25,000 3200s in use.

VISIONWARE PREVIEWES PC-CONNECT FOR DEC'S VAX/VMS

VisionWare Ltd of Leeds has previewed a Digital Equipment Corp VMS operating system version of its flagship product PC-Connect - up till now the program has been available only for integrating Microsoft Corp Windows-based personal computers with Unix machines. PC-Connect for VMS will offer Dynamic Data Exchange links between Windows and VMS applications and a VMS version of the Windows Notepad. Other features planned are an "easy-to-use" Windows front-end for file transfer, copy and paste between VMS and Unix systems and between VMS and Windows applications, local and remote printing, and an iconic desktop that can launch applications resident on up to 14 VMS hosts concurrently. Up to seven windows can be opened onto a single VMS host, regardless of whether the user is connected over a serial line or a network. The company did not give a price or an availability date.

UK TELECOMMUNICATIONS AGENCY HAS FOURTH RELEASE OF GOSIP

The fourth version of the UK Government OSI Profile, GOSIP, has just been published, in a different format from its previous incarnations as the Central Computer & Telecommunications Agency attempted to change the way that the profile is perceived. The new specification also fills a number of technical gaps, but leaves many of the differences with US GOSIP unresolved. The nice thing about Open Systems Interconnection standards, a wag once remarked, is that there are so many to choose from - each of the seven layers contains a number of options. GOSIP specifies a subset of OSI standards which are recommended to government and public bodies to ensure interworking. In the past, however, vendors have been irritated by the way that some purchasers have blindly followed GOSIP recommendations; reading the specs and then demanding them all, whether appropriate or not. The CCTA acknowledges the problem and has consequently split GOSIP documentation into two sets - one for suppliers, with the detailed profile specifications, and the second for procurers; a more realistic view of what is available today, liberally laced with warnings that OSI procurement requires technical knowledge. "There were mistakes on both sides" said Stephen Harrison of the CCTA. "We almost mis-sold it... and gave vendors the impression that we were de-skilling procurement". Local government seems to have been the biggest culprit - often demanding total GOSIP conformance. The UK computer and telecommunications advisory body is also altering the way in which GOSIP will be updated in the future. Don't expect GOSIP 5 for several years, instead of re-issuing the total document in one fell swoop the organisation intends to issue discrete updates to the various modules as required - and FDDI should be one of the first. As for technical changes, and starting from the bottom up:

Network services - layers one to four: the Ethernet over twisted pair 10BaseT standard has been added, as had an interim Fibre Distributed Data Interface specification. Interim acceptance means that government can buy FDDI, but should beware the changes which may still take place in station management software. Likewise 16Mbps Token Ring is still under study. A few amendments have been made to clear up the differences with US GOSIP over Connection Oriented versus ConnectionLess networks, but, says the CCTA there is little prospect of total harmonisation in this area. The message is that users should decide which is appropriate to the majority of their networks and stick to it.

Network and System management was one of GOSIP 3.1's weak points - it had only advisory notes on the emerging standards. The new version has an interim specification based closely on Common Management Interface Protocol and Common Management Information Services. Two sub-recommendations are made: a basic set of management services based upon the CMIP/CMIS core and enhanced management which requires all of the protocol's features, except for extended services.

FTAM File Transfer, Access and Management now has a stable spec with international standards almost agreed. The number of document types supported has been substantially increased (previously only sequential text files could be used) - a variety of optional binary document types is now added.

Message handling: work is underway to include Electronic Data Interchange handling within the message handling specs, but the results are still up in the air at the moment. Previous versions of the profile included specifications based on both the 1984 and 1988 X.400 standard, but with some chunks of the specifications missing; for instance UK GOSIP 3.1 did not require the christian name to be specified in addresses - which could prove tricky if you worked in a large organisation and your name was Smith. Some of these holes are now addressed in the 1984 spec, which is now classed as stable. However GOSIP is recommending that users adopt the 1988 standard when it becomes available.

UBS' SHULMAN PEERS INTO THE SNAKEPIT

Wall Street watcher Marc Schulman has emerged from his latest foray among the industry's leaders with some interesting reconnaissance on Hewlett-Packard's unannounced Snake, Bushmaster, whose debut as the 710 has been pushed back from November to January, he says, because of the company's insufficient supply of TI floating point chips, a shortfall that has been stymieing deliveries of the rest of the series (UX No 352). In his report "'Tis The Season For Computer Stocks," Schulman speculates - with some precision, we reckon - that the 710 will come in at around 50 Specmarks (10-12 MFLOPS), somewhat under the 59.5 Specmark rating (18 MFLOPS) of its bigger brother, the 720. He attributes the difference in performance, as well as the difference in price, to a slower floating point. Its speed in calculation-intensive application such as financial modeling, though stodgier, will still be 150% to 200% faster than Sun's, he says. In windowing-intensive applications like a trader workstation it'll be as fast as a 720. Schulman may be on less firm ground on the box's pricing which he expects could be as low as \$5,000 with only 8MB; \$7,000 with 16MB. Hewlett-Packard has said the thing is slated to be under \$10,000 and as far as we can make out their plans haven't firmed up yet. Meanwhile, 700s are still experiencing at least a 12-week lead time even though TI put a Japanese facility to work on those scarce floating points on September 15th and Texas has increased its output. The picture is improving weekly but the \$21,000 720 is still hurting.

QUARK DEMONSTRATES PC WINDOWS DESKTOP PUBLISHING

Quark XPress, the desktop publishing package which dominates the more sophisticated end of the Macintosh DTP market, was shown running on a PC under Windows 3 at the recent Business Computing Show in London. But it is unlikely to worry Aldus, the developers of Pagemaker, too much: according to Publishing Magazine, the PC version is likely to stick at the high-end, with Quark likely to recommend a 486-based PC with 8Mb RAM, or at minimum a 386 with 3Mb. Aldus recommends a 4Mb 386, but will run on a 286 with 2Mb. XPress/PC is due out next year - Unix versions for platforms such as Sun workstations and the IBM RS/6000 are also on the cards.

RED BRICK CLAIMS EASE OF USE BREAK-THROUGH FOR GOLD MINE SQL FRONT END

Red Brick Systems Inc, Los Gatos, California has a data access technology called Gold Mine that, it claims, fundamentally changes the way businesses can use data to perform analysis and make business decisions. Gold Mine is claimed to accelerate the query processing speed of traditional relational database management systems a minimum of 10 times, and enhance the expression capabilities of industry standard Structured Query Language databases. Gold Mine can be implemented in three ways: as a stand-alone server, attached to an existing relational database management system or integrated into future relational databases - it supports existing standards, including relational table structure and SQL, without affecting existing relational database technology, Gold Mine is a software technology that can be implemented on any hardware system that can support a relational database, including IBM mainframes, DEC VAXs and Unix machines. Red Brick has developed a set of SQL extensions called Reduced-Instruction SQL - RISQL - that addresses the difficulty of expressing basic business questions in SQL and provides access to Gold Mine. The extensions embodied in RISQL simplify the composition of queries appropriate to data analysis and decision support. Relational data is often inaccessible because SQL queries are too difficult to compose or too complex to debug and maintain. Reduced SQL off-loads to the server many calculations required for data analysis, improving system performance by eliminating network traffic and cutting application memory and processor needs.

SHOW REPORT - UNIX IN DEUTSCHLAND

by Sue Norris

Some 190 exhibitors - including 145 big names - took to the Wiesbaden venue of the German Unix User Group's "Unix in Deutschland" show last month. Although there was a token appearance from representatives of Australian and Spanish firms, it was of course the US that had the best go at upstaging the home-grown German presence. The Taiwanese, too, made a suitable splash. Over 7,000 visitors passed through, 900 of which were interested enough to attend seminars. The Rhein-Main Hallen, 2,500 square meters of which were occupied, spanning 3 halls, seemed to be fairly buzzing, and as an incentive the organisers, Network GmbH, were offering a trip to Jersey in the Channel Islands for the company with the best-voted user software.

Unix International Germany workgroup

The newly-established Unix International Germany workgroup, UI AkD eV, made its first public showing at GUUG this year. The German organisation has grown to 16 members, from 12, since it formed on August 27. The new member companies include Prime Computer, Pyramid Technology and Sybase. GUUG is reportedly working with Unix International Europe in Brussels towards strengthening the message of Unix and open systems in Germany. The workgroup's aims, as outlined by the group at the show, are the promotion of the acceptance of Unix Systems V and connected products. A further "crucial" aim is to rewrite in German much of the literature associated with Unix. Membership of the German Unix International workgroup is independent of central membership. Sadly the only true German member of the organisation is value-added reseller ComFood Software GmbH of Munster, unless you count TA-Olivetti, Olivetti's Triumph-Adler manufacturing activity in Nuremberg. The rest are, of course, local subsidiaries of the big US names, with the exception of ICL Plc. Dr Thomas Gruter from ComFood emphasised the importance of translating Unix for the German market if the concept is to really take off over there. The company has bought its Unix licence from Unix System Labs and has translated the operating system into German. The result is Eurix - a European Unix, which can be easily translated into any foreign language. ComFood claims to have 1,000 customers of the product, all of them in Germany. These include Siemens-Nixdorf, AEG, and the German equivalent of British Aerospace. The international product, which uses X/Open-compatible commands, has recently been upgraded to Unix System V.4.

Ploenzke

Ploenzke Informatik GmbH & Co KG, a 22-year-old data processing and management consultancy specialising in Unix, CASE and proprietary systems, present at the show, was eager to talk about a Unix development tool which the company is currently working on. The tool, whose working name is ET, was originally designed during the course of an application development project for the Deutsche Bundespost Telekom. Ploenzke has been working on a real-estate software package for the Bundespost for two years now. The project, worth the equivalent of \$4m, necessitated the sideline development of ET. The tool, says Ploenzke consultant Klaus Schnatz, generates 40% of the code, so that creating applications is a very quick process. ET manages files and versions of those files, takes care of user authorisation as well as document generation. Schnatz feels the market is lacking such a product - there are, he says, many project management tools around, and lots of fourth generation languages, but there is nothing to link the two. Complexity of big projects such as the Telekom contract, says Schnatz, is one of the biggest Unix problems in Germany. Where there are many applications developers working in parallel, there is nothing in the way of management tools to help the developers keep track of each other. So Ploenzke had to build its own product, to aid the development of the Telekom product.

And, having found the product personally invaluable, Ploenzke is now to bring ET to the commercial market, to try and bridge the gap in the market. Telekom has just signed its acceptance of the Ploenzke-developed real estate product. Meanwhile, the first version of the commercial ET is now up and running, just awaiting test and re-design. It's based on Rosi SQL, a development environment designed by Halstenbach Angewandte Computer Technologie and marketed by Unix systems integrator Garmhausen & Partner. Rosi is a fourth generation database programming language with an SQL interface. Rosi, which runs under Unix and Xenix and offers windows, dynamic menus, permanent on-line help, supports Informix, Nixdorf's DDB4 and Oracle relational databases. Ploenzke says it hasn't really explored the possibility of marketing its ET application development tool in the UK, but the consultancy, which has subsidiaries in the Netherlands, Spain, Switzerland, and Austria, is planning to set up over here some day and says it may take up the opportunity then.

PCS Computer Systeme GmbH

Munich-based PCS Computer Systeme GmbH, the Mannesmann AG company in which DEC took a 65% stake last December, was demonstrating the 64-bit Intel 80860 RISC-based Cadmus FX.1 Firebox co-processor. The Firebox cartridge, which operates in a Unix V.4 environment, is the size of a cigarette box, has a performance rating of 40 MIPS and 80 MFLOPS, and offers 64Mb memory capacity. The thing can be built, says the company, into large Postscript printers for speeding up operation, and into scanners for document compression. And PCS is currently developing a "small Unix solution" for the FX.1. "Small Unix" is a shrunken version of Unix V.4 for dedicated processes being run on the FX.1 workstation subsystem. It requires 5Mb memory capacity, so can be used with EPROM storage, with a loading time of under 10 seconds.

Dr Materna

Dortmund-based Dr Materna GmbH claims to be the largest independent software house in Germany. The company is 12 years old and has 150 staff, with subsidiaries in Frankfurt, Hamburg and Gera. Dr Materna has a 50% stake in Comstar GmbH and owns 100% of Team GmbH in Paderborn. It started life as a consultancy, offering training and software development for midrange and mainframe computers, but now focuses on software development for commercial dataprocessing applications. The company prides itself on the products it has brought to market, such as its HyperDoc document archiving system, which is the press archives of the Dusseldorf state chancery, and by the Deutsche Bundespost. Other home-grown products include DX-Union, an office software package which integrates MS-DOS and Unix under Windows 3.0 by combining parts of each operating system under a uniform interface - this was demonstrated for the first time at the show. The software enables the personal computer user to sit in a mixed network and seamlessly access either DOS or Unix applications.

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SIEMENS-NIXDORF UNVEILS NEW RISCs

The gap left in Siemens-Nixdorf Informationssysteme AG's multi-processing Unix system strategy line by the withdrawal of Sequent Computer Systems from the OEM business (UX No 341), looks set to be filled by its existing RISC system supplier, Pyramid Technology Corp. Today, Monday, SNI will unveil the RM600, thought to be the one-to-four processor S series MServer based upon MIPS Computer systems Inc's R3000A part that Pyramid launched back in April (UX No 329). Pyramid already supplies servers to SNI as the Nixdorf Targon/35 family, which SNI has said it will gradually phase out, however an interface platform, possibly linking the old to the new, is also to be revealed. SNI may also announce plans for systems based upon the desktop version of MIPS' newest part, the 64-bit R4000SC, which SNI is fabricating. It is also working closely with Pyramid on the design of systems based upon the R4000MP multi-processing MIPS part: Pyramid says it'll have R4000MP systems out at the beginning of 1993.

Applied Information Sciences Inc of Landover, Maryland and its main subcontractor Unisys Corp are dancing in the streets over the award of a \$400,000 contract that could grow to \$5m from the Texas Rehabilitation Commission to develop the pilot phase of the Automated Disability Examiner Workstation project, which employs open-systems computing standards to achieve state service-efficiency and cost-reduction objectives; the project will use U 6000/65 Unix systems.

Providence, Rhode Island-based Cadre Technologies Inc has introduced Teamwork/OOD and Teamwork/OOA - object-oriented design and analysis applications which generate C++ code - for Sun Sparcstations: prices start at \$2,775.

Wang has plucked Donald Caset, VP of Lotus' Spreadsheet Division, to be its new executive VP and chief development office, the top research and development slot.

CompuAdd Corp's 25MHz, 15.8 MIPS Sparcstation SS1+ (UX No 351), is now available in the UK priced at from £3,800 with 8Mb RAM, 100Mb disk and a 19" mono monitor.

Groupe Bull SA, which already has an agreement with IXI Ltd to market the UK, Cambridge-based firms' X.desktop manager on the DPX/2 range, is also to offer IXI's Deskterm product, which allows character-based applications to run in a graphical windowing environment.

Also included in Unix Systems Labs' SVR4.1 multi-processing release (UX No 355), is Silicon Graphics Inc's Iris GL graphics library, for which USL has taken a licence: fast becoming a de facto standard for three-dimensional graphics, Iris GL is also to be a part of the ACE initiative's application programming interface, and has recently been taken up by DEC, Microsoft Corp and Compaq Computer Corp (UX No 352).

SunConnect has introduced NetWare SunLink, a Novell Inc NetWare connectivity package that allows MS-DOS, Microsoft Windows OS/2 and Macintosh NetWare users to share data, files and print services with Unix systems: running on Sunsoft's Solaris 1.0 operating system, SunLink is out mid-1992, no prices given.

Announcing third quarter net profits of 30 cents a share, IBM Corp last week said it was now expecting that 20,000 people would have left the company by the end of the year, up from the previous target of 17,000 for 1991.

Unisys Corp has added an entry-level model to its U 6000 series of Intel Corp 80486 servers running Unix SVR4. The U 6000/35 uses a 33MHz part and is rated at 30 MIPS, comes with from 8Mb to 64Mb RAM, 168Mb to 1.3Gb disk, SCSI, six EISA bus slots, TCP/IP and will typically support between 12 and 40 users. Available now, prices start at \$14,000.

Novell Inc is making noises all over the place of late, and it has now signed with New York-based JYACC to support the firm's JAM front-end on its NetWare SQL network database: JAM/DBi for NetWare SQL is priced at \$400.

Outside of either Unix Systems Laboratories or Compaq it is rumoured that the newly allied twosome have a written agreement that will make SVR4 Compaq's "most favoured" operating system: reportedly they'll keep it quiet a while longer. If so, it's a serious hit for the Santa Cruz Operation.

Sun president Scott McNealy says SunSoft will be going around to OEMs like IBM asking them to put Solaris 2.0 for Intel in their price books.

We made contact with the Santa Cruz Operation and, no, they're not planning to carry SVR4 for ACE: they're going it alone with their own implementation.

Outsiders peg Unix Systems Laboratories vice president of Open Software Solutions, Joel Applebaum, as a likely candidate for the management team at the USL/Novell joint venture and figure Novell's Unix guru Grover Righter will join him.

We've heard that the best way to describe Microsoft's Windows NT operating system is by calling it VMS on a Mach kernel.

Interactive said last week that its Unix V 3.2 system, which it started shipping November 1st as Interactive 3.0, has been recertified by Unisoft as fully compliant with the most recent Posix standard: Interactive has been Posix since release 2.2 in 1989 but it's just got its XPG3 credentials.

AT&T Co's third quarter figures showed a loss of \$1,799m after the company took a restructuring charge and other hits totalling a daunting \$4,000m. The figures include those of NCR Corp, and most of the charges relate to the acquisition of the computer company and the closures it necessitated in its own computer operations - \$1,500m was for AT&T Computer Systems closures; AT&T said the restructuring will lead to significant financial benefits, will not affect its ability to pay dividends, and that it still expects to report a profit for the full year.

And AT&T has cut 300 jobs at its Little Rock, Arkansas, computer manufacturing plant - more than a third of the workforce - and is transferring control of the plant to its Communications Products Sourcing and Manufacturing division: it had been part of AT&T Computer Systems, but is not amongst those operations being transferred to NCR.

Trigem will be amongst the Sparc vendors with new wares at Comdex this week, offering SDT systems using 25MHz and 40MHz Sparc processors and a choice of OSF/Motif, Open Look, X-Windows and Open Windows. They will include a low-cost Sparc "PC-killer" with super-VGA colour screen, and a new portable, the Ferrari, with a 9.5" diagonal VGA resolution colour screen or 1024 x 768 mono.

DEC confirms that although it still sells Unix System V.3 on the VAX in the US and Canada only, it is not selling AT&T's latest iteration, Unix System V Release 4 "on any processor, anywhere".

The Open Software Foundation says it will be making some announcements about its micro-kernel-based OSF/2 operating system early next year.

Looks like Apple and IBM will be trolling for supporters next week at Unix Expo. They have scheduled a special session open to all and hosted by IBM's Advanced Workstation Division president Bill Filip and Apple COO Mike Spindler who will be chatting up their PowerOpen operating environment. It is set for Wednesday October 30 between 9.30 and 10.30 in Room 1 A06 at the Javits Center.

Observers now say OSF means IBM, DEC and OSF staff, and not as much HP as it used to.

As the supply side reforms into five distinct open systems camps - ACE, OSF, Novell/USL, Pink and SunSoft/Interactive - arm-chair strategists wonder whether Sun will decide to sell off pieces in SunSoft to bolster support and harness committed distribution.

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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DEC PREVIEWS MAXIME ACE WORKSTATION AT COMDEX

DEC was at Comdex last week with what its boys were calling an "engineering adventure," an ACE prototype code-named Maxime that is due to come out as a low-end DECstation 5000 priced between \$4,000 and \$6,000 depending on the ultimate configuration. Currently the thing runs on a MIPS Computer Systems Inc R3000 chip, the R4000 being in such short supply. Not knowing when R4000-based versions will appear, DEC will apparently start shipping it as a DECstation 3000. What we saw had 8Mb internal, 450Mb disk, ran Ultrix 4.2 and IXI Ltd's X.desktop manager. Other ACE boxes also saw the first light of day at Comdex, and Microsoft's NT put in an appearance too - see pages two and seven.

IBM WORKS ON SON OF AD/CYCLE FOR AIX

IBM is planning a version of its proprietary AD/Cycle application development platform for AIX, according to Bob Libutti, IBM Corp's PRGS director of market strategy for worldwide marketing. Speaking in the UK at Sapiens' third international user conference held in Brighton last week, Libutti said son of AD/Cycle will be a separate, but linked CASE development environment specifically for AIX. The environment will have functional commonality with AD/Cycle via the Information Model, Repository and database, and IBM is understood to be investing internally to build the database and repository for AIX. There will be some common tools supporting both the AIX and the AD/Cycle environments. When asked if IBM really thought it necessary to provide an AD/Cycle II for AIX, which is ostensibly an open system, Libutti replied, "the AD/Cycle paradigm put a direction in place to organise and work around, the same thing is needed in Unix."

OSF RELEASES SNAPSHOT OF ANDF TECHNOLOGY

The Open Software Foundation has released the first snapshot of its Architecture Neutral Distribution Format software announced back in June (UX No 337), the core components of which are being provided by the Electronics Division of the UK's Defence Research Agency, formerly the Royal Signals and Radar Establishment. The DRA's Ten15 Distribution Format high-level intermediate language compiler is intended to ease the problem of having to develop software for a particular processor architecture by allowing applications to ignore the underlying CPU technology and run on all types of computers, from laptops to mainframes. If all goes to plan, hardware vendors should be able to change their underlying architecture without losing access to existing software libraries. Software developers will be able to concentrate on the functionality of their software instead of the issue of developing versions on different architectures. And users will have the benefits of ease of distribution of a wider range of mass market applications and better protection of investments. For the \$1,000 snapshot fee, OSF members get the ANDF specification, on-line documentation, an ANSI C producer, ANDF "reference installers" and debugger support for MIPS/Ultrix, Intel 80386/SCO Open Desktop and DEC VAX/Ultrix platforms, together with "installer-contributed ports" for Sparc/SunOS and Motorola 680X0/HP-UX. Other releases will add support for OSF/Motif and OSF/1. General availability of ANDF 1.0 is expected sometime in 1993. The stuff works by compiling application source code into neutral ANDF code - supposedly as difficult to reverse engineer as today's binary code - which is sold on to resellers, or users, and then converted to executable code by the "installers" bundled with machines. To make ANDF a success, support from software vendors is key. OSF says it'll initially win backing from small software firms and end-users experiencing ANDF through the use of public domain shareware and games. In turn they'll encourage the bigger software houses to back the technology.

TADPOLE'S SPARCBOK NO. 2 TO APPLE, DESPITE PC BIGOTS

Tadpole's Sparc notebook, SparcBook, came in second in the Comdex race to win a "Shelly" as best portable at the fair, bested only by Apple's new Macintosh PowerBook - a remarkable showing for both of them considering that Comdex is such a PC bigot. Tadpole was previewing a colour prototype it expects to start shipping in February. It uses a 9.5" 640 x 480 Sanyo screen built using passive matrix technology. It comes in at around 7.5lbs: the colour configuration runs at about \$2,000 more than its black and white sister. Tadpole chairman and CEO Robert Gilkes continues to predict that he will sell 10,000 of the SparcBooks in the US alone next year and says he's already had 1,000 serious enquiries. He sees the SparcBooks being heavily used in distributed management information systems, including those in the finance, defence, field service, insurance and banking markets.

REMEMBER, REMEMBER

THE FIFTH OF NOVEMBER

On November 5th 1605, Guy Fawkes and his fellow plotters attempted to blow the Houses of Parliament sky-high. That gunpowder plot failed. But the day before the UK Open Systems show hits town on Wednesday November 6th, at London's Olympia, at least twenty-three user organisations, representing all walks of life in the information technology business, meet in the capital, where they are expected to deliver an open systems rocket to manufacturers and suppliers. Previous meetings were held in Dallas and Vancouver earlier in the year (UX Nos 314, 336), but the London gathering will likely send the strongest message yet to the industry, calling for the accelerated delivery of open system products and coalition between rival technology factions. The meeting is expected to formulate a common message on open systems which the organisations can take back to their respective markets and countries. The collective procurement clout of these groups runs into billions of dollars. John Spackman of the European Telecommunications Information Services unit is to chair the meeting - which is hosted by UniForum UK - and user bodies represented will include the User Alliance for Open Systems, the Petrotechnical Open Software Corporation, the Group of Ten, X/Open, the Sigma group from Japan, the European ISDN User Forum, the World Federation of MAP/TOP users, FUSO - a new forum for users of open systems in France - and Unix user groups from around the world.

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NEW WORKFLOW SYSTEM "GOES BEYOND STAFFWARE, WORKHORSE AND RHAPSODY"

Grossenbacher Elektronik AG, a sizable 110-year-old privately held Swiss concern whose heritage lies with industrial automation, recently branched off into computer integrated manufacturing (CIM) with its first CASE tool, a package called PACE that it believes represents a new generation in graphical modelling. The software is targeted at three market segments, the hottest of which is workflow management. Designed in conjunction with the Swiss Federal Institute of Technology in Zurich, PACE is based on high-level Petri-Nets, combined with object-oriented data modelling in SmallTalk, and features an interactive GUI based on multiple windows and context sensitive menus. On the workflow side, the company says PACE contains the hooks to depict organisational structures (groups, departments, divisions) graphically through icons; simultaneously model information (orders, mail, production flow) flowing through those structures; simulate and statistically analyse workload, efficiency and profitability; interface with office automation functions to produce documents, print, send E-mail, activate batch processes, or do SQL functions to a database; generate the code for the PACE-defined and modelled applications; and implement the workflow on the target system. Strategic product manager Alfred Escher says PACE goes beyond anything currently available, including London's StaffWare, Dublin's Workhorse and the AT&T Rhapsody systems. PACE will work on both Unix and DOS machines, he says, as well as in networked environments. Grossenbacher envisions the software used on the factory floor for industrial automation programming, in operations planning and at the administrative and organisational level as an expert system tool. PACE has been in 30 pilot sites, attracted the attention of hard-to-please Deutsche Bundespost and is just now being released. Grossenbacher is looking to build a worldwide multi-channel distribution network for PACE, and will be in the US this week scouting out OEMs, distributors and large accounts at Unix Expo. It believes some parts are still missing from its workflow functionality, such as a specific set of user interface functions and standard hooks to major OA packages. To fill in the gap it will be looking to partner with software houses and VARs who will take it into vertical markets. Grossenbacher could re-distribute such verticalised software more widely. Demo software is available for a fee. The package will list for 15,000 Swiss francs or around \$10,000. In the next iteration, the company intends making the software real-time. Currently PACE contains an integrated graphical editor, interactive simulator and visual animator. It is equipped with hierarchical nets, reuseable subnet libraries and interactive syntax consistency checks. Several debugging facilities are provided.

INDEPENDENCE TECHNOLOGY HAS OLTP WORKFLOW MANAGEMENT SYSTEM

They always come in pairs, so it should be no surprise to see Fremont, California-based Independence Technologies Inc also touting workflow management system software at the show. Available from December, iWork is said to be the first workflow management system designed for Unix on-line transaction processing environments. The client-server system, which has its own graphical user interface, runs on top of ITI's iTran or other Unix OLTP systems, and, being scalable, is said to manage information flow at individual, departmental and enterprise-wide levels - "from several individuals to several thousand", according to ITI president Kal Krishnan. iWork treats each piece of work as a separate object, letting users define attributes such as priority and classification, security needs and distribution. Each object is tracked so that current location and status and historical details are available. Supervisors can manage and control work in their area and establish logistic and routing queues day to day - they can also assign and adjust security authorisation levels. Reports on task loads and audit trails are available, and critical work-load situations can be assigned, giving advanced warning of bottlenecks. Prices start at \$25,000 along with the iTran transaction processing monitor, but the system is also available as a standalone package, or as an upgrade to existing iTran or other OLTP systems.

COMDEX TO ADD UNIX SHOWCASE NEXT SPRING, FALL

Despite criticism, even in the Wall Street Journal, that Comdex has grown way too big, show organiser Sheldon Adelson feels differently. As the meeting place of the industry, the thing to do is segment it, he told Unigram.X last week, as they've done by adding multi-media and networking satellites. With his Unix solutions show now defunct, the next showcase to add will be Unix, starting at Comdex/Spring in Chicago, April 6-9 and again at Comdex Fall in Las Vegas next year.

RDI BRINGS IN NISSAN CAR DESIGNERS FOR PROFILE "CONVERTIBLE"

Sparc laptop pioneer RDI pulled off one of the most stunning new product designs at Comdex last week, the RDI Profile, a sexy slim-line Sparc workstation that hangs on the wall. Called the world's first convertible, the thing can also sit conventionally on the desk in 50% of the space a typical workstation takes up. Cleverly, RDI went to Nissan Design International, the car design people, for this one. Right now it's a 17.4 MIPS 25MHz LSI Sparc machine, using a motherboard RDI laid out, but it could just as easily be a PC or a Mac, the company said. It plans to license the design. As is, the Profile houses a 207Mb drive, 3.5 inch floppy and 8MB RAM expandable to 32Mb. The screen is a thin film transistor colour LCD with 640 x 480 resolution or a monochrome at 1152 x 900. Unlike RDI's battery-fed BriteLite, the 15lb Profile is mains powered. Pricing is still up in the air, but should come in at around \$10,000 when it starts to ship in January. The company also said it has started shipping its supertwist 1152 x 900 screen option for the BriteLite. Piggy backing Sun, RDI has signed Access Graphics, Cal-Abco and Epson Canada as distributors for the Brite Lite.

EVEREX IS SURPRISE NEW ENTRY TO FAULT-TOLERANT MARKET

Everex surprised even staffers manning its Comdex booth last week by displaying a 486 fault-tolerant machine dubbed the MPFT 2001 that is through engineering prototype and due for full production in Q2. Currently it's a uni-processor with all the hardware fully redundant, with memory a maximum 128Mb, mirrored in 32Mb increments. It achieves a 10ns switchover, according to Everex chairman Steve Hui. It is intended for the mission-critical Novell LAN and Unix markets. Symmetric multi-processing should be available in another six months. Pricing on the uni-processor will apparently be in the \$16,000 to \$20,000 price range.

TWINHEAD DEBUTS 31 MIPS TWINSTATION

Twinhead, which a year ago was tinkering with a 20MHz knockoff, this year wheeled out a 31 MIPS MBUS-based 40MHz Cypress machine, built around its own proprietary five chip ASICs. It says it's been working on the thing for at least 18 months and won't go lower down the food chain. It's already got a multiprocessing design ready waiting for software. The unit, the Twinstation, is a Sparcstation 2-Compatible due to ship by the end of the year. Pricing is still unfixed but promised to be lower than Sun's. Twinhead has also designed its own Mbus/Sbus interface. The company is waiting on its Comdex results to sort out distribution: it says the upgrade story of the Mbus is attracting attention.

PROTOTYPE NT RUNS ON PROTOTYPE BOXES, INTEL ALPHAS NOW OUT

NT was previewing on the Comdex floor running on a souped up 61 MIPS 75MHz 486DX machine which Intel achieved speeding up a 50MHz and labelled prototype. It was also on an Acer 50 MHz R4000 Box and the R4000 PWS 4000 from Olivetti, neither of which are commercially available yet. Also discretely off the floor in a room adjacent to the main convention center, it was on a four-processor NCR machine called Jupiter built out of four 50MHz 486 parts, a symmetric multiprocessor NT is said to support. And in what it calls a "sanity check", Microsoft has had Alpha versions of the Intel NT out with about two dozen ISVs. It has not done the same with the MIPS version, it being premature, an unusual case of the software being ahead of the hardware. Still, proper MIPS tools are 30-60 days away. However, apparently another batch of Intel Alphas were being handed to 80 strategic ISVs last week under the proviso that they commit to developing on it - not just play with it. Eventually Microsoft intends to deliver both operating systems, compilers and what-not on a single CD Rom.

NOW VISIX WINS MIPS BUNDLING DEAL

Visix Software Inc has won a new bundling deal for its Looking Glass user interface technology, this time with MIPS Computer Systems Inc for the Unix V.4-based RISC/os side of the MIPS business. Terms of the licensing deal were undisclosed. The product will be bundled as part of MIPS' RISC Windows software. Visix hopes the deal will include all of MIPS' OEMs, including such companies as Prime, Control Data, Bull, Kubota and Digital Kienzle, but a MIPS spokesman said that terms and conditions had not been settled, and it would be up to the individual OEMs whether or not to take the product. MIPS has had both the Visix and IXI desktop manager products available from its catalogue, and still plans to sell the IXI product as part of the SCO Open Desktop package on ACE-compliant systems. It is also planning to ship Microsoft Corp's NT.

...AS VISIX HAS NEW ADVANTAGE UP ITS SLEEVE

Meanwhile, Visix is preparing to launch its latest product at Unix Expo in the US, and at the London Open Systems show the following week. Looking Glass Advantage provides a graphical front-end to all the Unix shell commands utilities, which up until now have been a bit of an embarrassment on graphical desktops - they won't work if you double-click them. While competitive products attempt to get round the problem using drag and drop, Advantage allows the developer to create a command dialogue and associated icon for all the variables of complex utilities such as grep. Dialogues and icons are stored together as a file and can be placed anywhere on the system, where they can be double-clicked to run. Visix, which compares the product to facilities offered on the NextStep interface, says the product is ideal for system administrators, or for those wanting to automate repetitive tasks. Cost is \$2,495 for the development system, with no run-time fees. The product will be available to all Visix OEMs.

STRATUS'S HIGH-END 80860-BASED XA/R FOR UNIX, VOS

Marlborough, Massachusetts-based Stratus Computer Inc has expanded its 80860 RISC-based XA/R family of fault-tolerant FTX 2 Unix System V.4 and VOS computers with launch of the Model 300, to provide a high-end model way above the single machine currently available, the Model 20. The XA/R Model 300 is available immediately and shipments have already been made. The changes are in the disk and the number of lines supported: the Model 300 comes with up to 256Mb of duplexed memory, 18.7Gb of duplexed disk - more than double that of the Model 20, and up to 1,500 communications lines, more than double the number on the 20. Prices start at \$343,000 or (yes) £343,000. Stratus also introduced an enhanced 128Mb memory board for the XA2000 and XA/R Series with four times the memory previously available on a single board, at \$1,225 per Mb. And there is a new input-output processor subsystem for mid-range and high-end XA2000s and XA/Rs, providing up to twice the previously available bandwidth. It is from \$28,500, now.

OBJECT GROUP REQUEST FOR INFO ON METHODOLOGIES

The Object Management Group in Framingham, Massachusetts has issued a new Request for Information to solicit documentation of object technologies in the areas of object-oriented analysis and design methodologies and tools, to help the Group define its technical direction in these areas. It is at present soliciting information only on object analysis and design methodologies. Areas of interest are application development life cycles; object analysis and design methodologies where a methodology is defined as a process and a set of associated objects resulting in systems conforming to the Object Model; analysis and design objects; and tools to support any of these. It wants white papers with an electronic version in MS Word, PostScript or ASCII.

IBM WARNS THAT NEW RS/6000s**GRAPHICS WILL BE LATE...**

IBM Corp says that the new RS/6000 Power Gt3, Gt4 and Gt4x graphics subsystems, High-Performance Disk Drive Subsystem Adaptor and Serial Optical Channel Converter have been delayed until February 28, 1992. The products, announced in March and July 1991, were previously planned to be available this month and in December.

...AS IT BUYS 50% OF DANISH UNIX SOFTWARE DISTRIBUTOR

IBM Danmark A/S has acquired a 50% stake in Uniware Danmark A/S by subscribing for new shares in the company, the other half of which is held by Sophus Berendsen A/S via its SC Metric A/S subsidiary. Uniware is a software importer specialising in Unix and other widely-used non-manufacturer-proprietary operating systems, and is the Danish representative for Uniplex Ltd, Informix Software Inc, Island Graphics Inc, Liant Software Corp, Lotus Development Corp, Locus Computing Corp and Chase Research Inc. It employs 29 at its Vedback base. IBM says it made the investment to strengthen collaboration with the company and to increase the supply of Unix applications on the market.

TANDEM OFFERS FAULT-TOLERANT ETHERNET FOR INTEGRITY UNIX BOX

Tandem Computers Inc, Cupertino can now offer users of its Integrity S-2 fault-tolerant Unix computers - look for the single model to evolve into a family with R3000 RISC-based additions today, Monday - a fault-tolerant Ethernet connection as an option. The Reliable Ethernet option extends the Integrity fault-tolerant architecture to the subsystem that links to 802.3 Ethernets by using two standard controller modules to connect to the same local net. If one path fails, it automatically switches to the other; an Integrity takes up to two. The software costs \$3,000 plus \$75 monthly or \$5,700 for a five-year paid-up licence.

CRAY LAUNCHES ITS FIRST Y-MP-COMPATIBLE MINISUPER

Cray Research Inc last week unveiled its entry-level Y-MP supercomputer, a true Cray derivative of the Supertek Computers Inc S-1 mini-Cray X-MP, which Cray acquired when it bought Santa Clara-based Supertek in June last year. The Y-MP-EL system, to ship in December at \$300,000 in single-CPU configuration and \$1m with the maximum four CPUs, replaces the XMS interim product, which Cray launched a year ago in a hurried attempt to get out a minisupercomputer. Whereas the XMS was fundamentally a Cray-tweaked version of the SuperTek product, the Y-MP-EL retains only around 30% of the original SuperTek design - it conforms with the standard Cray CPU and memory architecture, and runs all Y-MP applications under Unicos, Cray's version of Unix. All XMS customers are being offered the new minisupercomputer as a straight trade-in, at no extra cost. The entry-level machine features 256Mb to 1,024Mb memory, one to four VMEbus-based input-output subsystems, up to 40Gb disk, expandable to 200Gb with the addition of an auxiliary cabinet. It has a sustained performance of 106 MFLOPS per CPU and a clock speed of 30ns. The thing is intended to stand in the office, is air-cooled and consumes 6KW power (the equivalent of an electric cooker), and measures 5' by 4', with a footprint of just over 11 square feet. So far, 18 orders have been received, though most of these are XMS replacements, including General Motors Corp's Lotus Cars Ltd, British Aerospace and the Ministry of Defence Research Agency in the UK. Watch out for the very high-end C-90, to be launched before the end of the year, likely as the Y-MP/16, which sustains a maximum 10 GFLOPS, with 16 processors each doing 1 GFLOPS peak.

ATARI V.4 DEVELOPER'S KIT GOES ON PRE-RELEASE

Atari Computer Corp was demonstrating a pre-release version of its ASV Unix System V Release 4 Developer's kit, aimed at software developers looking to port existing applications onto Atari's Motorola 68030-based TT030 personal workstation. The kit includes developer's tools such as the GNU C and C++ compilers, X-Windows, OSF/Motif interface and the XFaceMaker2 and Wish2 desktop manager tools from Non Standard Logics (UX No 355). It's out generally from the first quarter of next year.

SHOW PREVIEW: UNIX EXPO '91, NEW YORK

VISUAL'S LATEST X-TERMINAL IS UNDER \$1,000 MARK

Visual Technology has a new addition to its family of eight X-terminals, and plans to show it off at Unix Expo this week. The TX100M, priced at \$995, features a non-interlaced display, high-resolution and support for local clients such as terminal emulators and window managers. Coming standard with a 14" grayscale monitor with dual-screen resolutions of 1024 x 768 at 62 Hz and 864 x 648 at 72 Hz, the TX100M uses a 16.6MHz 658020 with 2Mb memory (expandable to 10Mb), has a "Motif-like" XDS window manager, virtual screen panning and the option of 1 or 2Mb of flash read-only memory, allowing multiple, customised fonts to be stored within the X-terminal itself. Other features include an optimised X scheduler, an on-line help function and an X-optimised implementation of TCP/IP. Visual is taking analyst Stephen Auditor of the X Business Group at his word: he predicted that up to 500,000 ASCII terminals would be replaced by X-terminals over the next two years once technology providers could deliver a reliable, under \$1,000 solution. Visual claims it has just that, and offers a two-year warranty and 24-hour replacement guarantee to back it up.

CA AND HP TO LAUNCH SYSTEMS MANAGEMENT TOOLS

Sending out boxing gloves with the invitations and promising the attendance of "smokin'" Joe Frazier on the booth this Thursday, software giant Computer Associates is planning to roll-out its first Unix products in the area of systems management, information management and business applications software, in a joint announcement with Hewlett-Packard. The fruits of a deal that was first revealed last January (UX No 317) are expected to be software covering areas such as production control, storage management, security, control and audit, data centre administration and performance management and accounting. CA, a long-term player in the IBM mainframe world, has more recently brought PCs running Windows into its domain, and is now gunning for heterogeneous, multi-vendor sites.

SPECIALIX ADDS NEW I/O CONTROLLERS, DOS-UNIX SOFTWARE

Specialix International, which now claims to be the world's third largest manufacturer of PC-Unix input/output add-ons - vying for position with the likes of Digiboard, Computone and Equinox - is using Unix Expo to introduce two new products, including its first software release. XIO is a new mid-range line of I/O controllers using a host card based on a 25MHz Zilog Z280 chip (the existing SI line uses the 20MHz chip), in conjunction with new modular terminal adaptors each containing two Cirrus Logic CD1400 UARTs. When plugged into a 386 or 486 PC, Specialix claims that system speeds of 38.4 Kbaud are achieved with all ports running simultaneously. Individual devices can run at up to 115.2Kbaud, says the company. A 128 port limit with four host cards is cited, though the average number is likely to be between 30 and 40 users. The terminal adaptors will connect to RS-232 serial, RS-422 serial or parallel ports. Available from November, XIO host cards, for AT, Micro Channel and EISA systems, cost from \$2,000 for an 8-port AT system. For top-end systems, Specialix fields its Transputer-based RIO multi-port I/O system for 40 plus user configurations. The new software release is Aterm, a bi-directional DOS/Unix terminal emulator that allows for hot-keying between the two environments. The software is resident on both the Unix host (Intel-based running SCO or Interactive) and a DOS PC via serial connection. It supports ANSI colour terminals, graphics, multiple screen display and a menu-driven user interface. Screen and key maps can be loaded individually to support multiple and function key combinations used in applications such as Word Perfect and Lotus 1-2-3. Specialix in the US now resides in Campbell, California.

SOFTWARE THROUGH PICTURES NOW AVAILABLE FOR SCO/INTEL

Interactive Development Environments, San Francisco, has developed a version of its Software through Pictures CASE products for SCO's Intel-based Open Desktop environment, in a move which it hopes will position it to win substantial business from Advanced Computing Environment customers. The product is already available on MIPS-based hardware, including workstations from ACE member DEC. Software development is one of the strategic market areas that the ACE Consortium is targeting. Demoed at Unix Expo for the first time, Software through Pictures Release 4.2 will become available in the first quarter of next year, priced from \$5,000 to \$21,000.

SYSTEMS CENTRE PRINT SPOOLER OPTIMISES PRINTER RESOURCES

The Unitech division of Systems Center Inc, Reston, Virginia, will launch a new print spooler in New York this week. Print.Unet is described as a network print spooler for heterogeneous Unix environments, aimed at simplifying print queue management and optimising shared printer resources. Using OSF/Motif as its graphical user interface, the monitor allows users to submit or modify print jobs, check status, view and prioritise jobs in the queue. Users on one host can send a job to a remote host for execution, with job submission, queuing and printing all able to take place on different platforms. Access control lists specifically who should have access to the queue. Available in December for most Unix platforms, the product supports most printers, but needs a Berkeley socket interface to TCP/IP. Pricing from \$5,000 for a ten-node network. The company also has a new release of its Backup.Unet product, version 2.0, which also includes the Motif GUI and adds support for optical Jukeboxes.

The relationship between Oracle and SCO, strained since SCO chose Ingres as the bundled database for Open Desktop a few years back, looks set to get back onto a better footing this week at Unix Expo: the joint technology and marketing announcement will, amongst other things, end the charge SCO had been making to integrate its products with the Oracle database.

Network Computing Devices Inc, Mountain View, California, will unveil an X-terminal that communicates over serial lines with the host computer, rather than across a local area network: with 2Mb RAM, the 15", monocolour NCD15s is \$1,250.

X/Open is attempting to jump-start its Systems Management programme with the publication of an initial "Problem Statement" document, which attempts to define what X/Open calls a "large and confused area". It is designed to establish a starting point for future discussions and provoke feedback from the market. The 40 page document summarizes the plethora of standardisation efforts working in this area, and puts over the view of the X/Open Systems Management Group that there is a need for the convergence of network and systems management, although the two areas do not entirely overlap. The document costs \$40 from X/Open.

NCR, Wyse and Microport are three of the companies that will be showing Unix System Labs' newly released SVR4MP multi-processing software for Intel-based systems (UX No 355).

A new umbrella group covering international Unix user groups is to be announced at Unix Expo on Thursday, in an event held atop the World Trade Center in New York: Uniforum and EurOpen, the conglomeration of European Unix user groups, will host the event.

GOSSIP HAS DEC AND COMPAQ IN A HUDDLE - AND A MERGER WOULD MAKE GOOD SENSE FOR BOTH

by Tim Palmer

There has been a deafening silence since we revealed behind-the-scenes talks between Digital Equipment Corp and Compaq Computer Corp intended to lead to a close bilateral alliance between the two companies going far beyond their joint participation in the Advanced Computing Environment initiative (UX No 356). There has not been a whisper in the mass circulation public prints - but then it took months before the goings-on between IBM Corp and Apple Computer Inc began to surface outside the pages of Unigram. At the time we ran the DEC-Compaq story, the signals we were getting were that the alliance would fall short of a partial or total takeover by DEC of Compaq, but we now hear that at the Systems show in Munich last week, Compaq people were talking openly of takeover by DEC.

Such a move would put a few noses out of joint at DEC's commercial partners, because at present, DEC buys most of its personal computers sold in the US from Tandy Corp, and gets its European ones from Ing C Olivetti & Co SpA, which also supplies notebook computers for worldwide sale. Nevertheless, such agreements can readily be terminated at the pre-set break points, and DEC has long been convinced that it ought to have a much larger share of the personal computer marketing than it presently commands - while the IBM-Apple alliance demands a very convincing response from DEC, and getting Compaq on board would be a satisfactory first step. Although the gap in turnover between IBM and DEC has narrowed dramatically in the last decade, it is still uncomfortably wide, and DEC would clearly like to be looking at an annual volume of \$25,000m within the next three years, and taking in \$3,000m of annual Compaq sales would be a big step in the right direction. The company is still uncomfortably dependent on the VAX for the bulk of its business at a time when proprietary architectures are coming under growing pressure - and its MIPStations have stubbornly remained also-rans in the workstation market, where Hewlett-Packard Co and Sun Microsystems Inc still hold sway and IBM may very soon become a serious contender in terms of market share. DEC can bring Compaq key design skills as the two companies get to grips with designing workstations for the still very ill-defined Advanced RISC Computing environment, and can give the Houston company the direct sales entree into large accounts that it lacks, while giving DEC access to an additional blue chip dealer network.

Anti-trust

On anti-trust grounds, the fact that DEC now buys in most of its personal computers means that there should not be any serious objections raised to a merger - and one aspect that makes the thing attractive to Compaq is the fact that DEC was saying earlier this year that its personal computer sales were really doing rather well - it would have been nice if those sales had been of Compaq machines. It should of course be remembered that far more such alliances are discussed between companies than ever make it into the newspapers, and that most of them ultimately come to nothing: it wasn't until the other day that most of us learned that AT&T Co had run Hewlett-Packard, DEC and Apple through its computers before deciding to bid for NCR, so DEC-Compaq may well be another one that comes to nothing. If it does come to fruition, what do we look for? One possibility is that DEC buys a 10% stake in Compaq in the form of newly-issued shares, and says that it will buy more from time to time in the market with a ceiling on its holding of perhaps 30%. DEC has plenty of cash in its coffers, so could afford such an investment relatively painlessly.

But DEC is wisely extremely conservative with its cash, so, rather more likely, if Compaq management is amenable, would be an outright takeover in the form of a share exchange, taking advantage of the fact that Compaq's share price is even more bombed out than DEC's as a result of the deep depression in the personal computer business: a premium of about 35% to market price should be enough.

...AS COMPAQ REORGANISATION CUTS

STAFF, REPORTS \$70m LOSS AFTER CHARGES...

Compaq Computer Corp came out with a shock \$70.2m loss for the third quarter on sales down 18% at \$709m and announced that it will cut 1,450 jobs from its 12,000-strong workforce - 150, or 12% of its 1,200 European employees will go - in a restructuring that will split the company into two divisions. The loss arose from a pre-tax charge of \$135m to cover the costs of the lay-offs, and the market seems to be inured to bad news from personal computer manufacturers, so much so that the shares were up 62.5 cents by mid-morning that day at \$34.375. The restructuring is intended to reduce the company's cost structure in the face of "continuing softness in world economies, an ongoing slowdown in the personal computer industry and a period of intense price competition". Compaq says it expects to begin realising cost-reduction benefits "immediately, and anticipates that the restructuring actions will help reduce future operating expenses over the long term". The two product divisions will be personal computers and systems. On the economy, the firm says the economic and market environment remains unsettled as price competition cuts revenue per unit and hurts Compaq margins.

...WHILST DEC CHIEF OLSEN

GETS AN ATTACK OF THE BIG BLUES

DEC's Ken Olsen was in sombre mood for his cover story interview in *Information Week* last week, in a piece preparing for the launch of upgrades to its proprietary VAX line, due this Wednesday. "The impression that the mini-computer is dead is nonsense", he said, explaining a drop in DEC's share of the market from 19% in 1987 to 15% today. "IBM took it away from us. When the AS/400 first came out, it had a lot of problems. But they kept tweaking it, put a lot of money into it, and now look how it's doing." IBM has taken over DEC's dominant position in the mini market, and now has a 20% share, according to Dataquest figures. Along with the new VAXs will come Release 5.5 of VMS, which will be Posix-compatible as of January next year, according to VMS marketing manager Richard Kittle. On retirement, the 65-year old Olsen said; "I haven't made any plans to retire. Choosing a successor is the kiss of death." And on the accuracy of the press he said; "never believe anything you read. Anything you've read is wrong, and that's a safe assumption". Oh well, as you were.

SUN HANDS HIGH-END VISUALISATION PRODUCTS OVER TO VICOM...

Sun Microsystems Computer Corp has decided that the growth rate at the high-end of the graphics and visualisation market does not warrant its continuing investment, and it is re-focusing its efforts to concentrate on mid-range, higher volume areas such as document imaging, desktop publishing, electronic pre-press and multi-media. That means that it is licensing its VX and MVX visualisation accelerators and boards to Fremont, California-based Vicom Systems Inc, who will exclusively sell the boards on Sun workstations from January of next year. Sun introduced the boards, which use Intel Corp's i860 processor, back in August last year (UX No 295), claiming 40 MIPS and 60 peak MFLOPS double precision for the uni-processor VX, and up to 160 MIPS and 240 peak MFLOPS for the four processor MVX. Vicom will ship the boards as its flagship products, committing to maintain compatibility with Sun's XGL software libraries and SunVision visualisation software. Vicom will keep on its own high-end products, which include the Gould Deanza and Pixar products it has acquired over the last few years, products that were sold in direct competition to Sun. As for Sun's other graphics products, it is now licensing its GX broad-based graphics product-line direct and through Sparc-chip foundries LSI, Tera and Fujitsu (UX No 356), so that Sparc clone-makers can have access to the technology, which it might consider also doing for the 3D GS and GT accelerators. As for the recent moves by Silicon Graphics to license its GL graphics libraries (UX No 352), Sun's Anil Gadre, SMCC vice president of systems product marketing, called the move "interesting". But he added that he'd "already heard of two different companies thinking of putting libraries of GL on top of XGL, but it makes no sense for us to change our whole graphics strategy. XGL is object-oriented for our next generation, fits in well with our windowing system, and is multi-threaded to run on the new multi-processors. We can't get that out of GL".

...AS SUNSOFT MULLS SUPPORT FOR OSF TECHNOLOGY

Sun Microsystems Inc's SunSoft division, which is already committed to supporting the Open Software Foundation's Motif graphical user interface and Distributed Computing Environment technology - they were included in Unix International's Atlas distributed computing framework - says it would only take "a minor set of changes" to its Solaris Unix operating system to accommodate OSF's AES, Application Environment Specification, upon which the OSF/1 operating system rides. SunSoft is still evaluating whether it wants to do that. OSF's AES and Distributed Management Environment, along with Silicon Graphics Inc's Iris graphics library are the remaining components that SunSoft would have to adopt if it is to conform to the planned application programming interface spelt out in the agreement between the Advanced Computing Environment and Unix System Laboratories (UX No 354). Conforming to the API could put SunSoft's third-party application lead at some risk, since independent software vendors could more easily support multiple architectures. But that doesn't worry Sunsoft - "if it makes our platform more exciting (to customers)," said a spokesman quoted in US press reports, "then that's great. (The ACE/USL deal) is an opportunity to enhance ties to some of the SVR4 vendors in ACE." Wags suggest this may mean Compaq Computer Corp marketing the Intel Corp-based desktop version of Solaris that SunSoft is currently putting together via an outstanding research and development tie-up it has with Interactive Systems Corp, which SunSoft recently acquired (UX No 350).

HP's OpenODB BUILDS ON EXISTING RELATIONAL DATABASE TECHNOLOGY

Rather than go to one of the small specialist companies that have developed object-oriented database, Hewlett-Packard Co has developed its own, together with an object-oriented version of SQL, and is calling it HP OpenODB. The Palo Alto company, the first major manufacturer to come out with its own object database, reckons it has the most advanced such product for large multi-user environments and claims that it will enable new complex business applications to be developed and maintained "at a fraction of current costs". Nor does it intend to keep the thing to itself - it says that it can be implemented easily on other vendors' hardware "because of its object-oriented Structured Query Language or OSQL. HP has been working on its OpenODB database for several years under the code name Iris, and cognoscenti describe it as an object-oriented overlay for an existing database, which implies that it is built on Allbase. The new OSQL builds on current database technology by enabling programmers to use languages such as C, Cobol, Pascal, Fortran and C++ to write applications: it takes existing SQL features used in relational databases and adds object-oriented capability so that the OpenODB database manager will offer the commercial-grade functionality of current relational database managers "such as HP Allbase/SQL". The company is touting OSQL as meeting the needs of users that require simple access to data, full data management capabilities and the ability to use existing applications and the data stored in them - and it hopes to persuade the American National Standards Institute and the Object Management Group to confer "industry standard" status on OSQL. The company reckons that OpenODB will reduce the costs of developing and maintaining applications because more of the application is stored in the database itself. Information stored in HP OpenODB includes re-usable code such as ongoing company functions that cross department lines; these programs can be written once and used in multiple applications - well, that's one of the key purposes of object-oriented technology. Relationships enable data and applications to be linked in the database, not just the application portion; processes such as manufacturing control systems or worldwide sales distribution, service and support functions; and inanimate and people-related data - such as parts, customer information, employees or suppliers. The company says it believes object databases will prove most effective when used by individuals or small workgroups of no more than 10 people, which it says explains why early applications have been in the technical engineering area with a computer-aided design and manufacturing focus. A developer's release of HP OpenODB is set for delivery in December on HP 9000 Series 300, 400 and HP Apollo Series 700 workstations and HP 9000 Series 800 Unix machines, and on the proprietary HP 3000 900 business systems and servers, at a target price of \$100,000 on all systems.

...AS HP WRIGGLER ILLUDES SUN HEAT

Hewlett-Packard was due to announce its next PA RISC Snake workstation - the 710 - at Adus/UK, the annual HP/Apollo workstation user society meet in Solihull, Birmingham last week (UX No 353). And apparently, so keen was a competitor to discover the details of the latest wriggler, that Prime Computer Inc's Computervision operation in nearby Coventry received a desk message from the president of a certain Californian workstation supplier, asking it to send along a keen pair of ears, and to report back pronto. Unfortunately, as later reported (UX No 356), HP decided to put the announcement back until January, so the signatory of the message, one Scott McNealy, didn't get the Snake spec. However, for the benefit of Mr McNealy, and anyone else interested in the illusive Snake, the performance marks and prices quoted in Unigram's later report (UX No 356), were run past an HP snake charmer, who confirmed that they are on target, as far as the latest thinking in HP's marketing department goes. Speaking of which, by the time the young snake reaches the ripe old age of nine months - hasn't HP worked out what to do with the thing yet? - the firm is also expected to have announced its own RAID system, redundant array of inexpensive disks, based on the HP disk technology that everyone else is using for their own RAIDs. And, not to be left out where supporters' clubs are concerned, HP is also forming an independent organisation that'll promote its Precision Architecture RISC technology. HP and PA licencees will form the supporters club, which will pitch itself against the Advanced Computing Environment initiative, Sun Microsystems Inc's Sparc International, the 88open group which promotes Motorola Inc's RISC, and IBM's PowerPC processor.

SIEMENS LAUNCHES PYRAMID S SERIES AS ITS RM600

Although Siemens-Nixdorf Informationssysteme AG chose to restrict the announcement of new high-end Unix multiprocessors to a German trade show on Monday of last week, the firm duly unveiled its Pyramid Technology Corp-sourced boxes the following day in the UK and elsewhere as expected (UX No 356). SNI's RM600 systems are based upon the one-to-four-processor model in Pyramid's S series of MIServers launched back in April (UX No 329), running SNI's own Sinix V5.41 implementation of Unix SVR4. The departmental computers, which are built using MIPS computer Systems Inc's 33MHz R3000A RISC, are rated at 35 MIPS in single-processor configurations, up to 140 MIPS with four CPUs, come with up to 512Mb RAM, 75Gb disk and support up to 400 users. Prices start at £100,000 and go to over £1m. Siemens says the RM600 will be its strategic relational database platform for 100-plus users, and address the move towards downsizing by offering "mainframe performance at a mid-range price." However, the firm chose not to - and says it has no immediate plans to - take on the rest of Pyramid's S series, which, accommodating up to 12 CPUs and going to 300 MIPS, would more realistically compete with its own BS2000 mainframes. SNI is also working closely with Pyramid on the development of systems based upon the multi-processing version of MIPS' latest 64-bit RISC part, the R4000, which SNI is fabricating in Europe for the Sunnyvale, California-based chip outfit. These systems are not expected before 1993. SNI also previewed Sinix API, an application programming interface, which will be formally introduced later this month. Sinix API is intended to offer application portability and unified software development platform across SNI's entire range of Unix-based computers. The API embraces Open system Interconnection and X/Open standards, along with SVR4 Streams, LAN Manager, systems management, programming languages - C, C++, Cobol, Fortran, Pascal, Ada, Lisp and Prolog - OSF/Motif and X-Windows interfaces, TCP/IP and SNA communications, a data dictionary, fourth-generation languages and SQL databases. Although SNI says the API is non-partisan and will be extended to include other technologies as they come along, there are already anomalies. SNI, a founder member of the Open Software Foundation, is not offering compliance with OSF's Application Environment Specification, which would allow users to implement the OSF/1 operating system on their SNI boxes should they so choose - "and there are no plans to do so," says Andy Smith, SNI's UK product marketing manager. This comes despite the recent thawing of relations between the various hostile Unix camps which, most recently, has led to agreement on the creation of a set of interfaces which should allow MIPS RISC and Intel Corp system users to run Unix SVR4 and OSF/1 applications side-by-side. On the other hand, in choosing the Motif graphical user interface, and OSF's implementation of remote procedure call technology for its distributed processing strategy - as enshrined in OSF's Distributed Computing Environment - SVR4 supporter SNI has spurned the olive branches held out by Unix International and Unix System Laboratories which define technologies that will allow users to develop to Motif, or to Open Look, and to the OSF RPC, or to the more popular Sun Microsystems Inc-derived RPC. SNI's Sinix range goes from Siemens' WX200 workstation, through the Intel 80486-based MX300 and MX500 (multi-processor), to the Motorola Inc 68040-based Targon/31 and Targon/35 - Pyramid's older MIServer system based on a proprietary RISC - from the Nixdorf side of the equation to the RM600. SNI says it will continue with sales of the Targon/35 for now - it has some 1,000 in the field - whilst there now remains only a "residual" OEM relationship with Sequent Computer Systems for its National Semiconductor-based technology, now well past the sell-by date.

THE OBJECT IS THE AIM FOR SEQUENT

Sequent Computer Systems Inc has put in place an Object Technology partnership program, believing that its Symmetry 2000 series of multi-processing database engines are well-suited to the creation of a large-scale object-oriented development platform. Initial members of the program are Instantiations Inc, ParcPlace Systems, Reusable Solutions, Taylor Consulting, Tigre Object Systems and Versant Object Technology, each of which will be porting their respective object technology to Sequent systems. Training and consultancy for applying object-oriented technology on the Sequent machines is available through the program. And early next year, Sequent will release its own object-oriented software, Ptx/Object, which, it is thought, may bring Sequent a chunk of the \$1,300m Small Multiuser Contract US Defense contract: a subcontractor on the contract has been negotiating with Sequent for two years to develop object-oriented technology for the project.

TROUBLE FROM MARS, TATUNG TAKES OVER SALES & MARKETING

As we went to press, news came in about troubles at Sparc clonemaker Mars Microsystems, which produces the Mariner 4 range of Sparcstation clones (UX No 294). Mars was backed by Tatung America, who were not available for comment on the Thursday night, but it is understood that Tatung has taken over sales and marketing of the Mars range, while some research and development is still continuing in the Pennsylvania-based firm. Tatung has its own CompStation range of Sparc-based systems.

ALTOS CLAIMS FIRST WITH MODULAR CPU FOR UNIX

Perhaps showing off its true colours now that it is part of the Acer Group, Altos Computer Systems chose Comdex rather than Unix Expo for the launch of its new System 4500 EISA-based product line, which again follows the PC trend by offering what it claims is the first modular CPU designed for Unix. The CPU subsystem, which uses a 20MHz i486SX processor with support for an i486SX math co-processor of the same clock speed, has been implemented onto an easily plugged-in board. CPU upgrade boards for the machine, to include 33MHz and 50MHz versions of the i486DX, will be available during the first quarter of next year, said the company. The 4500, which has six EISA slots, comes in three models: the 45411, 45820 and 45844 - the difference being the amount of memory (4 or 8 Mb, expandable to 64 Mb) and hard disk size (from 110Mb to 440Mb). All include a 3.5" 1.44Mb floppy, 5.25" cartridge, 10 serial ports, a parallel port, 14" colour monitor and super VGA controller. Support for 256Mb main memory will come with 16Mb DRAMs, and disk storage can reach up to 11Gb using expansion cabinets. For networking, the box supports four Ethernet channels and five SCSI-2 channels. Available immediately, prices will be in the range of \$9,400 for the entry system depending on individual resellers.

BULL BUYS A 75% STAKE IN SWEDISH UNIX SYSTEMS COMPANY DIAB DATA

Stockholm, Sweden-based manufacturer of D-NIX real-time 68000 family Unix multiprocessors Diab Data AB has rather slipped out of the news of late, but the company is back with a bang with an announcement that Groupe Bull SA has bought a 75% stake from Telinvest AB. Telinvest is the industrial investment arm of Sweden's national phone company, Televerket. Telinvest will retain 25%. Financial terms were not disclosed.

ORACLE HAS ENHANCED CASE OFFERINGS

Redwood Shores, California-based Oracle Corp has enhanced its software engineering offerings with a new release of its multi-user CASE*Dictionary repository, version 5.0. The company also added CASE*Generator for SQL*Forms/SQL*Menu V2.0 and CASE*Generator for SQL*Reportwriter/SQL*Plus V1.0, which create screen and menu-based applications and reports directly from definitions held in the repository, for "error-free systems," Oracle claims. CASE*Dictionary V5.0 and CASE*Generator V2.0 and V1.0 will be out by year-end on Sun Sparcstations and under DEC VAX/VMS, but on pricing, Oracle says only that it is hardware-and user-based.

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LADDIS, supporters club for the de facto Unix Network File System networking standard, have come up with a benchmark for evaluating NFS performance, which, they say, is expected to be adopted by the Systems Performance Evaluation Cooperative in its SPEC series of benchmarking tests next year: if you were in any doubt, LADDIS stands for Legato Systems, Auspex Systems, Data General, Digital Equipment, Interphase and Sun Microsystems.

X/Open has added Teradata as an associate member of its systems vendor council, and DHL to its User Council: X/Open is building up to its Xtra '91 Conference at the Hyatt Regency in Reston, Virginia, between November 13th-15th, where users will thrash out their requirements for open systems.

Fujitsu Ltd, Fujitsu Microelectronics Inc and Cadence Design Systems Inc, San Jose, have embarked on a multi-year, multi-million dollar technology partnership agreement to develop and market an advanced ASIC design system for Fujitsu's commercial and internal markets. First products are set for 1992.

Digital Equipment Corp is tipped to do an OEM deal with Intel Corp on its 80860 RISC-based iPSC line of multiple instruction-multiple data massively parallel machines. Electronic News notes that the Intel machines would complement the single instruction-multiple data parallel processors from Maspar Computer Corp that DEC now markets.

Sequent Computer Systems Inc, Beaverton, Oregon, which lost \$23m in the quarter after charges, is having to cut its 1,600 to 1,700 strong work force by about 20% to reduce quarterly expenses by \$6m.

NeXT Inc follower NeXTWorld magazine claims in its latest issue that NeXT is re-evaluating the decision to base its next generation machines on the Motorola Inc 88110 because of the IBM Corp Apple Computer Inc proposals and Motorola's perceived attention span: the publication cites unidentified sources for the story and suggests that the company's other options include the Sparc, MIPS Computer Systems Inc's RSeries RISC, Intel Corp's 80860, or the far-off Motorola 68050 part.

Ingres Corp has added Amdahl, Prime and Sequent to the list of firms committed to helping with implementation of Ingres products on their Unix kit: the three join Bull, DEC, Data General, HP, IBM, ICL, Motorola, NCR, SNI and Sun.

But Ingres has lost its most favoured status as relational database supplier to ICL Plc now that Oracle UK has extended its joint worldwide marketing agreement with ICL to cover the UK; Oracle will do an implementation of its eponymous database for ICL's Unix-based DRS 6000 and DRS 3000 lines and to VME, with first fruit a DRS 3000 version of its Financials package due early next year; Oracle will also resell DRS servers as part of the deal.

IBM Canada Ltd and Toronto-based SHL Systemhouse Ltd have a new technical and marketing support agreement expected to be worth over \$100m; SHL Systemhouse will provide technical support for the RS/6000 and participate in a co-operative marketing agreement on Unix-based systems integration contracts.

Hewlett-Packard Co has versions of two programs that originated under MS-DOS - the CorelDraw presentation graphics package at \$900, and Lotus Development Corp's 1-2-3 at \$700, for its HP Apollo 9000 Series 700 series of HP-UX Unix workstations.

IBM is hoping to change people's perception that it will only sell its own kit by advertising its systems integration skills: the company claims that around 40% of a typical IBM project goes to non-IBM sources, and boasts that it recently automated 625 stores in the US Zales Jewellers chain, integrating Dell PCs running AT&T Unix with an IBM 3090 host.

Don't expect the new Apple Quadras to be the last high-powered Macs before the PowerPC Risc family is introduced in 1993: Apple is expected to introduce a Motorola 68050-based system before then, according to MacWeek, with a lower cost 68040 and a performance kick for the Quadra 900 machine due next Summer or Autumn, the paper hears.

Sun Microsystems Inc has reported first quarter net profits up 2.6% at \$26.7m on turnover up 11.5% at \$754.9m; net earnings per share rose 4% to \$0.27. Sun doesn't give guidance to analysts so it is more than likely to wrong-foot them with its figures, and it did it again this time, with only 27 cents a share against Street forecasts of 30 cents and up, and a very modest 11.5% increase in sales - but margins held up, leading analysts to assume that the firm has been holding its prices rather than mixing it in the gutter with discounters.

Stratus Computer Inc, Marlborough, Massachusetts, has announced a Unix-based system for managing cellular phone networks. The Cellular Management System runs under Stratus' FTX Unix implementation on both its XA 2000 and Intel Corp i860 RISC-based XA/R fault-tolerant systems, front-ended by Sun Microsystem Inc workstations. The system is currently under evaluation by US telecomms provider PacTel Cellular, Walnut Creek, California - there are reckoned to be some 5.3m cellular subscribers in the US.

Chicony Electric, one of those low-profile PacRim Sparc Hopefuls of last year, has dropped out of the clone race citing competition from Sun and the price plunge: "there's no market," it said.

Microsoft said it is working with the US Government to certify NT as C2-Level secure with future releases enhanced to B-Level.

Reports that the MIPS R4000 MP version is bugged are perfectly true, say sources: that's why that unintended uniprocessor chip with the large external cache came into existence. How long it will take to sort things out is anybody's guess.

Former Opus President Mark Johnston has surfaced: he's running Hyundai's brand new workstation division, as executive responsible for its soon-to-fly Sparcettes and reporting to Hyundai America President Y H Kim.

Acer's R4000 ACE prototype has been built out of LSI-made chips. Acer Director of Product Marketing, Olend King, said only a few companies like his own and Olivetti would be making massive amounts of ACE boxes - OEMing the things to others in the initiative.

Software developers can rest a little easier at night: Software Security has brought out an Anti-Piracy Dongle, the Activator/ws for Sparcstations. It currently fits in the serial port. They're working on one for SCSI. Price is \$85, quantity one.

Altos is encouraging its ISV partners to port their software products to run under X-windows through its AXAP Altos X-Software Availability Program, and reports that Basis International Open Systems Holding Corp, Personalised Programming Inc and SI Inc are amongst those signed up: Altos has some X toolkit and conversion software offerings waiting to be launched by the end of the year.

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London, November 4-8 1991

Number 358

UNIX LITE AND EASY MAKES UNDERCOVER DEBUT AT UNIX EXPO

Unix System Labs has been working hard behind the scenes to prepare Unix for its latest push into the desktop marketplace, and is now able to demonstrate early versions of the software, which it was secretly doing at Unix Expo last week. The provisional name for the product is EZ (easy), and it is likely to ship from the second quarter of 1992, for machines configured with a minimum of 4Mb RAM and 60Mb disk. Implementation of desktop Unix has been made easier by the long-term effort at USL to modularise Unix, which has involved extensive reviewing and re-writing of the original Unix code at USL - a task set to benefit all future Unix releases, and will first appear in the recently launched ES extended security edition. As for EZ, at the lowest level fits the C2 secure foundation module, with two layers of modules on top. The first set includes utilities, graphics and networking, and the second a development platform, security and administration stuff. Aside from the foundation that's six modules to pick and choose from. Absolute minimum configuration is 6Mb, and with everything it is 130Mb. The foundation module is expected to sell for \$300 and the six modules for \$800, though prices have not been fixed, and might well come in lower.

Novell-USL joint venture plans multiple ports

EZ source code from USL will be sold in three ways: to distributors, OEMs and to the Novell-USL joint-venture. Tuxedo, OSI and C++ will also be supplied to the joint venture, which is said to be planning Intel iAPX-86, i860, Sparc and MIPS/ARC ports, and will add-in NetWare and Portable NetWare too, and plans to re-vamp those products to fit into the client/server world with USL's help. From the joint venture, finished binaries will go to Novell and USL, though it is unclear whether Novell itself will be selling EZ. USL will also sell the binary to OEMs and distributors along with the raw source offering. Also demonstrated at the show was an early version of its Open Look intrinsics toolkit, which now offers a choice of Motif look and feel - Moolit. Unix EZ will include its own desktop manager, promising object-oriented features and functionality.

OMG REVEALS RESULTS OF DISTRIBUTED OBJECT COLLABORATION

"Ninety days of tyranny" was how Object Management Group president, Chris Stone, described the Summer period during which six companies were forced to sit down and piece together their respective technologies which form the Object Request Broker, ORB. For the object-oriented, ORB is really the end of the beginning, a compromise between different approaches to doing object-oriented development work. If the future is object-oriented, then ORB is its start-point, allowing messages to be passed between objects, regardless of the type of host computer system or network. In the object-oriented paradigm, everything from applications to a print queue, an E-mail message to a graphic, is regarded as an object. The ORB is a high-level specification which sits on top of distributed computing approaches like Sun Microsystems Inc's Open Network Computing Framework and the Open Software Foundation's Distributed Computing Environment, the first stage in OMG's plan to create a distributed application environment. ORB combines the two main approaches to objects that featured in the original submissions. The dynamic method in which objects can be added to ORB on the network in real time is supplied by HyperDesk Corp and DEC. The static model, which defines application objects when the ORB is set up on the network, originates from the joint HP/Sun/NCR/Object Design Inc submission. ORB gives developers a choice between the two methods - it has an interface for each - though each of the six firms say they will incorporate both topologies into their ORB-compliant products. A development language - the Interface Definition Language - merges the two elements, allowing object-oriented developers to write just one set of code. There are, however, performance differences between the two approaches. The ORB specification, which also includes an Object Adaptor and an Interface Repository, is out in January of next year, and costs \$50,000. ORB will be followed by the Object Model specification, a common language allowing objects to communicate with each other, in the first quarter of next year; specifications of object services will start shipping during the third quarter of 1992. First products - see page 4.

STEVE JOBS PLANS NEXT MOVES

Industry bad-boy Steve Jobs stormed into Unix Expo last Wednesday, used the keynote speech for an extended demonstration of NextStep, and slammed the Object Management Group's efforts (see this page) as "hundreds of people working on three percent of the problem." Jobs agreed that "where standards make sense, let's use them", but went on to claim that Next "has something much better, and will share it freely. Remote Objects, part of the next release of NextStep, includes the concept where a process can send a message to any other process in the same address space - and we will be extending that to any process on any machine. It's much cleaner, and will be available within six months". And Jobs revealed that the NextStep environment was now running on four processor families internally, but would not confirm reports that Intel and Sparc versions of NextSteps are on the cards. Jobs also said that he would be taking Next public within the next year and a half. Although he would not disclose sales and profitability, Jobs promised that when he did reveal the figures ("give me one or two more quarters") they would be impressive. He gave the Wall Street Journal an estimate of \$60m sales this quarter, putting the company on target to reach \$150m this year.

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UK's TRIVISION SPARC CLONER OFFERS RADSTONE, SGI GRAPHICS

The latest UK Sparc player is Cheltenham, Gloucester-based Trivision Systems Ltd, which has put together a high-end workstation aimed at graphics, imaging and CAD/CAM applications. The VPXstation is rated at up to 160 MIPS, and uses boardmaker Radstone Technology PLC's Vision-Master graphics accelerator subsystem enclosed in a Sun Sparcstation-1-type box. Trivision is licensing Silicon Graphics Inc's Iris GL library, which it will offer on the VPXstation next year, and is forming a joint venture with Radstone to develop SPX, a high-end Sparc-based graphics board. VPXstation is offered with 20MHz or 40MHz Sparc RISCs, from 8Mb to 64Mb RAM, 205Mb to 850Mb disk, 4Mb to 64Mb video memory, SCSI, Ethernet, 20" colour monitor, SunOS 4.1 and the Motif GUI.

ACUCOBOL OPENS SQL DATABASES TO COBOL

Acucobol Inc, San Diego, California, has announced Acu4GL, a Cobol-to-SQL translator which allows software written in Acucobol-85 2.0 to access relational database systems. The first release, due by the end of the year, will support the Informix OnLine and SE databases: Ingres, Progress and Oracle ports will follow. The firm says Acu4GL eliminates the need to add embedded SQL statements to existing Cobol programmes, and can be used in conjunction with other 4GL tools such as report writers and query tools: no prices were given.

ABACUS MAC-EMULATOR FOR UNIX WILL APPEAR FIRST ON NEXT

Abacus Research and Development Inc, the Albuquerque, New Mexico start-up that is attempting to reverse-engineer the Apple Computer Inc Macintosh so Unix machines can run shrink-wrapped Mac applications (UX No 351), is releasing Executor-MSW for NeXT in December. This allows Mac-formatted floppies to be used to transfer the Mac version of Microsoft Word 4.00D to NeXT Computer Inc boxes, on which Word files can then be edited and transferred to and from the Mac. It is the firm's first step towards a full Mac emulator, which will cost \$700 on the NeXT machines, though ARDI says it doesn't yet know when this will be available, citing limited development resources, and is actively seeking new sources of venture funding to complete the job. If none is forthcoming ARDI president, Clifford Matthews, says it'll use profits from its existing products to grow to the size needed to finish the task.

SOLBOURNE: NEW TOP-END THIS QUARTER

Solbourne Computer will extend its systems upwards again later this quarter, probably going to 16 CPU max, up from 8 now. It is also looking at a low-end clone box to OEM, it isn't going to go any further down than its 4000 desktop thingy, says VP Sales and Marketing, Mark Stevenson. He also reckons Sun will get a box under \$3,000 next year, and is still strangleholding the clone market. It has been casting eyes around at other OS solutions for the Sparc, because it has to drag along behind Sun, and has been talking - only talking - with ICL about its MP SVR4 stuff for Sparc. He reckons ComputerVision signed up for Solbourne MP kit (UX No 354), because it doesn't like the Sun Galaxy stuff.

CHINA'S STONE SPARC-MAKER HOPES FOR US END-USER SUCCESS

Hong Kong-based Stone Group, described as China's largest privately held computer company with 1991 revenues estimated at \$500m, is going to try to break into the US market riding on Unix's coattails. Like many Pacific Rim concerns, Stone is now a Sparc cloner with various configurations of LSI's instant SparcKit. As a Sparc newcomer, it expects to sell these boxes into China, a market it apparently controls a chunk of, plus other Far East venues, Europe and the US through OEMs, distributors, VARs, VADs and SIs. However, StoneSystems Inc, the firm's new US arm, is hoping to create market pull by focusing on end-user needs. It projects revenues of \$30m-\$40m in the next twelve months, 70% of it from Unix products. It thinks it has added value with its Multi-VGA, a VGA multi-video card meant to replace LANs by enabling four to sixteen monitors to simultaneously share a CPU. Currently available for 386/486 boxes under SCO Unix (or bundled with Stone-made PCs), the company is planning one for Sparcs, expecting to deliver in Q2. Last week, StoneSystems, which intends upgrading Sun's installed base by offering a better trade-in policy than is available from Sun and exporting what it takes in back to China, opened negotiations to do a MIPS machine and may join ACE. StoneSystems also wants to do pure X terminals. However, it has a solution reminiscent of GraphOn/Qume (see page three): Multi-X, priced between \$6,000 and \$16,000, allows a maximum eight users to run Motif-based X windows applications off of 14-inch VGA monitors attached to a single Multi-X controller.

APPLE PREVIEWS SYSTEM 7-COMPLIANT A/UX...

Apple Computer Inc launched the latest version of its A/UX implementation at Unix Expo last week, adding System 7 functionality and increasing Unix and Macintosh integration. A/UX Version 3.0 runs on Macs starting from an SE/30 up, including the newly announced Quadra 700 and 900 68040 machines, which can't decide whether to be servers or SuperMacs. System 7 has a greater affinity with the Unix world, not least because it supports virtual memory, and Apple says that any 32-bit clean Mac applications should run without problems on top of A/UX. MS-DOS applications are also supported, by dint of SoftPC from Insignia. QuickTime compression support has also been added, as well as support for the built-in Ethernet capabilities of the Quadra range. Available first quarter of next year. Apple's multiple personalities - see page 5.

...AS TENON HAS MACH OS FOR APPLE MACS

Tenon Intersystems, Santa Barbara, California, has released MachTen, its Unix development system for Apple Macintosh computers (UX No 341). MachTen is BSD 4.3 Unix, built upon a Carnegie-Melon Mach operating system base (as used by Next and the Open Software Foundation), which allows Macintosh users to run regular Mac applications alongside Unix software, whilst adding multi-tasking, internet communications and NFS to the Mac operating system. MachTen includes the GNU C compiler and preprocessor, Motorola 68000 assembler, Unix libraries and a set of management tools. A Macintosh Toolbox library interface will be added, along with C++ and support for Mach C threads and RPC library. An X-Windows client development environment will be available for MacTen in December, and X-server software and System 7 compatibility will be added during the first quarter of next year.

MATERNA UNITES MS-DOS, UNIX UNDER WINDOWS

Dortmund-based Dr Materna GmbH claims to be the largest independent software house in Germany. The company is 12 years old and has 150 staff, with subsidiaries in Frankfurt, Hamburg and Gera. Dr Materna has a 50% stake in Comstar GmbH and owns 100% of Team GmbH in Paderborn. It started life as a consultancy, offering training and software development for mid-range and mainframe computers, but now focuses on software development for commercial data processing applications. The company prides itself on the products it has brought to market, such as its HyperDoc document archiving system, which is used for the press archives of the Dusseldorf state chancery, and by the Deutsches Bundespost. Other home-grown products include DX-Union, an office software package that integrates MS-DOS and Unix under Windows 3.0 by combining parts of each operating system under a uniform interface. The software enables the personal computer user to sit in a mixed network and seamlessly access either MS-DOS or Unix applications, the good Doktor says.

QUME CORP TAKES GRAPHON X TECHNOLOGY

Printer and terminal company Qume Corp has acquired the technology of troubled X-terminal hybrid manufacturer GraphOn (UX No 344), and in a move likely to put a cat among the X-terminal pigeons is introducing a product based on the technology for \$700. Qume has the technology on a non-exclusive basis, and has adapted the terminal to run both as an X-terminal and as an ASCII/ANSI standard terminal, which allows it to attack the market from the character-based end - something its competitors cannot do. The company is looking for high volumes and is after major distributors to handle the product, which will lever off of the 386/486 server market rather than addressing the higher-end NCD-dominated sector. It expects to get an endorsement of the product from the Santa Cruz Operation. First production runs start January. Traditional X-terminal makers were often snobbish about the GraphOn product, which included the X-server software within the terminal and ran over the serial line - but the economics make sense, at least in its reincarnated form. The QX 14 uses a Motorola 68000 and can emulate DEC, Wyse, TVI, ADDS and PC Term terminals. The screen is 800 x 600 at 78 Hz.

OPEN'S ASPECT FOR MAC, WINDOWS AND UNIX

As Unix Software Labs begins previewing its own independent look and feel user interface technology (see front page), Colorado Springs-based Open Inc says that its new graphical user interface technology, Aspect, allows a single application to work with all the windowing systems - including OSF/Motif, Open Look, Microsoft Windows and Macintosh. And Aspect also has a windowing system for character-based terminals that emulates a graphical user interface for those who have not. The company says that Aspect works directly with the native toolboxes of each GUI to retain the true look and feel of each product. It provides a C-callable applications programming interface and its IDT Interactive Design Tool that can be used for designing the user interface via pointing and clicking, independently from the target environment. IDT has a resource database, which allows a developer to delay the binding of portions of the user interface until run-time, so that the application's user interface can be customised without re-compilation. Development licences are available which allow for the right to distribute without royalty. Motif and character-based versions are first off the production line, with other platforms promised by the second quarter of next year.

**ROD CANION OUSTED FROM COMPAQ,
REPLACED BY PFEIFFER**

Rod Canion, cofounder of Compaq Computer Corp and the company's president and chief executive officer has been ousted from the company. In what looks like a coup by the board, Eckhard Pfeiffer executive vice president and chief operating officer has been elected president and chief executive officer in Canion's place. The surprise move came during a week when Compaq had reported a shock \$70.2m loss and a restructuring that will involve 150 job losses and will split the company into two divisions. When Pfeiffer became chief operating officer in January this year. Previously he had headed up the European operation it was suggested that Canion would concentrate on long range plans for the company. What is not clear at this point is where all this leaves negotiations for a possible merger with DEC was that deal Canion's swansong or Pfeiffer's ace?

HP VISUAL ENVIRONMENT GOES ON RS/6000

Hewlett-Packard Co, which has already implemented its Motif-based mouse-driven Visual User Environment graphical user interface on Sun Microsystems Inc's Sparcstations, has now done a version for IBM Corp's RS/6000 in conjunction with systems integrator Science Applications International Corp of San Diego, which will be marketing the IBM version. Part of Hewlett-Packard's NewWave object-oriented environment, it will run under AIX 3.1.5 up, use IBM's standard X Window stations, and will be available next spring at \$550.

**THINKING MACHINES IN SWITCH
TO SPARC FOR CM5**

Thinking Machines Corp sprung a surprise with the launch of the latest iteration in its family of Connection Machine massively parallel machines: it has forsaken its proprietary 1bit processing element in the new CM5 for Sun Microsystems Inc's Sparc microprocessor. The new machine is claimed to deliver over 1 TeraFLOPS performance peak if people could afford a model with the necessary complement of 16,000 Sparc processors - as each node costs about \$20,000, they would be in for \$320m! The minimum CM5 comes with 32 Sparcs, each with 32Mb memory and costs \$1.4m - no word yet on which implementation of the Sparc is being used. The Cambridge, Massachusetts company says it has a \$25m model on order from the Los Alamos National Laboratory in New Mexico that is to be fitted with 1,024 nodes. The maximum configuration currently conceived has 2,048.

LOTUS ADDS OPEN-LOOK TO 1-2-3 FOR UNIX

Lotus Development Corp has announced an Open Look interface for its 1-2-3-for-Unix product running on Sparc machines. The release is the first graphical version to become available on the Sun - a toggle switch allows for instant recourse to the character-based version. Lotus went to Alex Technologies of West London for the implementation, which uses the Alex language to interpret terminal output from the application and turn it into a graphical interface, with no changes to the application software needed. Alex supports both Open Look and Motif toolkits. Based on version 1.1, the product supports X-Windows, integrates the Lotus C Add-in Toolkit, has a bundled Sybase SQL Server DataLens Driver and supports Lotus Real-time. Available in 90 days, UK launch is this week at the Open Systems show. Alex says it has another major US software house waiting in the wings to announce an Alex-based Open Look product.

NCD PREDICTS X-TERMINAL SHAKE-OUT, PROMISES ITS OWN MAJOR ORDERS

Apart from the major hardware vendors that are offering their own X-terminal solutions - such as DEC, HP and IBM - Network Computing Devices believes that one, or possibly two other runners have the staying power to live alongside it in the X-terminal marketplace of the future. At the last count, the full list ran to 30 hopefuls. Although NCD lost out in the recent US Army contract award to Boeing, which bid Human Design Systems X-terminals (UX No 355), NCD says it is currently negotiating on a couple of very large commercial contracts, at least one of which is thought to be in Europe. NCD is also hopeful that the European Commission may decide to go the whole hog and standardise on X-terminals, which it has been evaluating. Further Motorola 88000-based RISC additions are expected to be added to NCD's product line, and the second quarter of next year will see a software release which will make the terminals easier to configure and plug and play.

PYRAMID FORMS DATABASE DIVISION

Pyramid Technology Corp has formed a new database division, headed up by vice president Deborah Stanley, which will develop new products for commercial database users. Its first outing is FastPak, a set of tools to overcome capacity and input/output limitations when running databases under Unix. Prices go from \$10,000 to \$47,000 depending on configuration. Other planned releases include transaction processing monitors - it has already promised Unix System Labs' Tuxedo by the end of the year (UX No 329) - a fault-tolerant distributed lock-manager and database administration facilities.

MIPS LAUNCHES ECL MULTI-PROCESSOR

As expected (UX No 354), MIPS Computer Systems Inc has duly unveiled a multi-processing server based upon its R6000A ECL RISC. The RC6380 100/400, with from one to four CPUs, has a top SPECthruput rating of 205.5, and has already been announced by MIPS' joint development and OEM partner, Control Data Corp (UX No 355). A uniprocessor system with from 128Mb to 1Gb memory, SCSI, Ethernet and six VME slots starts at \$196,500. The box will run the new version 5.0 of MIPS' RISC/os Unix SVR4 implementation when it becomes available at the end of the year.

DEC STRESSES APPS PORTABILITY, BETTER PRICE-PERFORMANCE THAN RISC WITH VAXES

Digital Equipment Corp accompanied its new VAX 6000 and VAX 4000 models, offering up to three times the performance of the existing models and claimed to offer better price-performance than RISC machines, with a new commitment to openness and applications portability. More powerful VAX clustering, Posix support for VMS 5.5, new NetWork Application Support products with OSI, TCP/IP and OSF DCE support were all included. The models promise a path up to future RISC VAXes due late next year.

AMDAHL HAS NEW RELEASE OF UTS

Amdahl Corp has unveiled the latest release, 2.1.3, of its UTS mainframe Unix. It includes Open Systems Interconnection and has two transfer layer interface-compatible transport providers which support local and wide area networks over Ethernet and X25. The OSI FTAM application enables users to transfer and manage files across OSI networks using the OSI Transport layer, and X400 capabilities will be available early next year. UTS/Advanced Program-to-Program Communication has been added, enabling communications between remote applications using IBM's SNA LU6.2 protocols. Enhancements to the Extended File System include additional mechanisms for storage class selection, improved backup and recovery and support for long file names. Support for the X-Window System is extended to X11.4 and OSF/Motif Version 1.1. UTS Release 2.1.3 will support the 1Gb per-second UltraNet network and it is connected through a maximum of eight striped channels. Also, Amdahl C and Amdahl Fortran, two ANSI-compliant languages, are available for Release 2.1.3, and the company says that C and Fortran programmers can now develop and maintain applications requiring over six Terabytes of online storage. At the same time as announcing the new release, Amdahl confirmed the existence of several pilot schemes with its processors being used as front-ends or nodes in a DECnet. Ken Gorf, director of open systems, says that some Digital Equipment Corp users, especially engineering shops, have run out of steam and exceeded the capabilities of the top-end VAX 9000. The unnamed pilots, two in the US and two in the UK, are migrating large applications from the DEC environment, and Gorf says that details will be available in the first quarter of 1992.

HYPERDESK, SUN, HP, DEC, X/OPEN OFFER SUPPORT FOR OMG

One year old start-up HyperDesk said it would offer its distributors an object management system based on the ORB specification in January, including applications development features and services. SunSoft and HP promised their joint Distributed Object Application Framework, already a year in development, by the second half of 1992, with source code available to developers by the second quarter. DEC, which submitted its NAS Applications Control Architecture Technology (ACA) as part of ORB, said that ACA Services on VMS and Ultrix was "the first commercially available distributed object-oriented software to implement the ORB". As for consortia, X/Open, OSF, Unix International and the Interactive Multi-Media Association all offered support, with X/Open committing to jointly publish the specification as a preliminary requirements document. Notably absent were Microsoft Corp and the new Apple/IBM Taligent venture. Retro-fitting existing object-oriented technology, such as Microsoft Windows or Pink, to the ORB, was described as "non-trivial but manageable", and OMG president Chris Stone predicted that IBM/Apple would offer more concrete information in the future. HP and NCR are amongst those integrating ORB with Windows applications.

CHUCK PEDDLE IS BACK - PLANS EUROPE-WIDE SPARC OPERATION WITH CMS

Chuck Peddle, father of the Commodore Pet, and some of those that helped him start the Sirtus/Victor/Tandon business that was so successful selling PCs in Europe, is back at it again - this time on behalf of Sparcettes. Peddle's company, Thytime, which he set up some years ago to implement development plans he had, has formed an alliance with American distributor CMS Enhancements to exclusively handle European distribution of the CMS Trigem-made Sparc line. Thytime intends setting up operations immediately in France, Germany, Spain and the UK. CMS DEC/Sun manager Agha Mahmood believes the company's efforts could result in \$20m to \$30m worth of Sparcette sales next year. Thytime will also handle CMS peripherals and its Trigem-made high-end PCs as a complement to its one-stop shopping approach. Peddle continues to work on his other technology plans with the idea of using the CMS/Thytime alliance for distribution of the eventual product, which he promises will have important repercussions for Unix.

...AS CMS RAMPS UP ITS US SPARC DISTRIBUTION EFFORTS

Meanwhile, the \$220m-\$230m CMS, which until nine months or so ago peddled only peripherals, not systems, is positioning itself to become a major player in Sparc distribution, anticipating US revenues of some \$40m-\$50m next year from its Sparc clones. The added value won't be in the technology as much as in the packaging. Trigem will stick with making pure Sun knock-offs, probably including a 40MHz Cypress unit. CMS, on the other hand, promises to bundle them together with leading-edge drives and integrate them into specific vertical market applications, creating, for instance, a completely configured desktop publishing platform. CMS is still unsure what the software is going to be. However, its distribution moves have reportedly attracted the attention of Sun's new subsidiaries such as Sun Tech, also interested in moving products through CMS' channels. CMS, which controls some 3,500 distribution points for its traditional business, has set up six major distribution sites and around 13 manufacturers' reps to handle its Sparc business in the US.

SUPERCOMPUTERS TAKE THE SLALOM RUN

The Slalom benchmark - it stands for Scalable Language-independent Ames Laboratory One-minute Measurement - is an increasingly popular benchmark capable of measuring architectures from single processor to massively parallel processing machines, according to Omri Selin's Parallel Processing Report. The benchmark, designed by John Gustafson of Iowa State University's Ames Laboratories, is described as "inherently scalable", in contrast to other benchmarks such as Linpack, which often executed so quickly on supercomputers as to make the results meaningless. 100 or so systems have been measured, and Serlin lists the top performers. Top of the list comes the Intel Delta with 400 40MHz i860 processors, rated at 5700 "patches" (the amount of work achieved in one minute) and 3200 MFlops. The next nine are as follows: Siemens S600 (1 processor), Cray Y-MP8D (8 processors), Intel Delta (256), Cray 2S/4 (4), Cray Y-MP8D (4), NCube 2 (1,024), Cray 2S/4 (2), Cray Y-MP8D (2) and Intel Delta (64). Fujitsu's VP 400 uniprocessor makes it in at number 13, MasPar's 16,384 processor MP-1 at 17, IBM's 3090/200J with vector facility at 21, Alliant's 14 processor FX/2800 at 23, and the IBM RS/6000, not far behind the 3090, at 25. The RS/6000's rating is 1610 patches and 63.5 MFlops.

UNISOFT JOINS ACE SVR4 SUPPORTERS

Unisoft Corp has seen some of its traditional Motorola-based systems software business slip away since Motorola itself has fallen from its leading position in the Unix workstation world, so the London, UK and Emeryville, California-based company is beginning to look elsewhere. Now it has joined the ACE initiative and says it will supply "affordable implementations of ARC-compliant Unix System V Release 4 to vendors selling them on Intel and MIPS processors.

CHRYSLER OPTS FOR 88000-BASED DELTAS

The Chrysler Corporation in the US has opted to use Motorola's RISC-base Delta Series 8000 systems to control material handling and inventory in 19 of its automobile parts manufacturing plants, in a multi-million dollar deal. The new systems, which replace existing proprietary machines, will run inventory control, bar code recognition and printing, receiving and shipping, weighing and measuring, and production counts. They will also support Chrysler's Just-in-Time inventory control programme. Motorola's Computer Systems Division will begin shipping the Delta 8000 Model 8640s, including 900 terminals and 300 printers, in December. It will help move Chrysler's customised manufacturing software over to the new platform, and will provide software including SNZ communication, Cobol compiler and word processing, as well as training. The project should be complete by May next year. The motor industry appears to have a weakness for Motorola's 88000 RISC chip - Ford recently chose the part to use for motor controllers, in a contract which should see some six million parts shipped annually by the end of the decade.

TALIGENT WILL HAVE SPLIT PERSONALITIES

Apple Computer executives have been revealing to MacWeek a little more about how the futuristic object-oriented Taligent operating system will co-exist with existing software. Ed Birss, senior VP of Apple's object-based systems division, tipped as the future chief operating officer of Taligent, told the paper that Apple and IBM would address the problem through a set of Taligent objects called Personalities. These, running under the Taligent OS, should provide full emulation of operating systems including MacOS, IBM's AIX and Apple's A/UX Unix versions, and even OS/2. When an application is launched, the Taligent O/S will know which Personality it should run, and will automatically set up the interface and the application. But what about new features? Taligent should make it easier to develop and customise generic applications, said Birss, with a solid set of objects that allow "new application categories to be developed that aren't possible now, because they are economically unfeasible to develop and support". A 3D version of Apple's QuickDraw application could be an example of an object which Apple or IBM could take and layer into their current operating systems, providing some of the functionality of the fully object-based system. Such objects will even find their way into IBM mainframes, Birss predicts. But there are plenty of issues still unresolved. While Taligent's OS will be available from Apple, IBM, Taligent and authorised third party companies, it is not known if the Personalities will be freely available, or simply bundled in with an Apple or IBM CPU. For instance, will IBM and third parties be able to sell the MacOS Personality on its machines? Birss hints that they won't. "There are certain advantages that Apple and IBM, as founders of Taligent, would have. It's not our objective to foster a clone business". The user interface of Taligent will take "the best of what's available from both IBM and Apple, so that customers don't have to re-learn how to use a Taligent machine". Birss says that Taligent will run on a wide range of machines, including Intel and Motorola CISC-based systems, as well as the IBM PowerPC RISC.

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OSF TO DROP X/OPEN BRAND

Coming on the back of the Open Software Foundation's decision to withdraw from the X/Open board, it has now formally told X/Open that it will drop X/Open branding by the end of the year. As suggested (UX No 356), it is expected to start its own branding programme.

The Santa Cruz Operation Inc is expected to shed around 10% of its workforce this week: no reason has been given, although wags are already suggesting that after Unix System V.4 gate-crashed its ACE party (UX No 355), SCO may be about to pull the plug on Open Desktop for the MIPS RISC ACE crowd and concentrate on the Intel Corp ARC platform.

Saber Software Inc, Cambridge, Massachusetts, has changed its name to CenterLine Software Inc, ostensibly to provide a greater range of possible product lines. However, it is thought that the real reason is a desire not to come into conflict with the US airline company - of the same - Saber - name. Centerline's language products henceforth become known as CenterCode (Saber-C) and ObjectCenter (Sabre C++).

Unify Corp has appointed former Mentor Graphics VP James Hammock as chairman and CEO: Unify founder Nicolas Nierenberg continues as president of the database application firm.

According to IDC, SunSoft Inc's Open Network Computing Environment has an installed base of around 2.2m: it is thought that 1.8m of those are using that version of the remote procedure call it includes. And some components of Solaris 2.0 have begun shipping for release 1.0, including OpenWindows version 3 and Deskset version 3.

X/Open's global user survey, conducted for it by Toronto-based DMR Group Inc, finds that the things computer users most want to see featured in open systems products - across 22 different technology areas - are not being delivered satisfactorily by vendors, even on those that are based upon "independent" standards. X/Open will be discussing this "quality gap" at its forthcoming Xtra T91 world congress on Open Systems which takes place in Reston, Virginia, between November 13-15th.

Mike Swavely, whose resignation as Compaq's long-time North American chief this summer may have saved him from the company's current bloodbath, has resurfaced in the industry after a three-month absence. He's taking over Bull chairman Francis Lorenz's seat on MIPS' board of directors.

Palo Alto, California-based Neuron Data Inc's Open Interface graphical user interface builder - similar to Unix Systems Labs' independent look and feel software interface - is now available for IBM OS/2 version 2.0.

Hummingbird Communications Ltd, Markham, Canada, has released an MS-DOS-based PC X-Windows server for the XGA graphics environment. HCL-eXceed XGA supports Microsoft Corp's LAN manager, NetManage Inc's Chameleon and TCP/IP for DOS from Locus Computing Corp, in addition to those that the firm already supports.

Informix Software Inc has released version 1.1b of its Wingz spreadsheet for Unix, which allows charts, objects and graphics developed in Wingz to be exported to, and used by, Island GraphicsU Write, Draw and Paint applications and Frame Technology's FrameMaker desktop publishing software. It's initially available for Hewlett-Packard workstations running Motif and Sun Microsystems Sparcstations Open Look.

Hewlett-Packard has another addition to its series of PA RISC-based X-terminals: the HP 700/RX Model 14Ci is a 14" colour system offering a resolution of 1,024 x 768 and from 4Mb to 18Mb RAM - prices start at \$3,500.

And HP has secured a \$5m contract from Northrop Corp for 91 of its PA RISC workstations and servers and 285 X-terminals.

Microsoft Corp has a handful of packages ported to the alpha version of NT that it is handing out to select independent software vendors (UX No 357): only a few were identified, including its own Excel spreadsheet, and stuff from Future Soft Engineering and Computervision, with the latter only taking five working days to move from 16 to 32-bit Windows, it is claimed.

The good news for IBM Corp is that the University of California's Lawrence Livermore National Laboratory is investing \$1m in a cluster of 14 RS/6000 Powerserver 550s to create a Unix compute server in the laboratory's Open Computer Facility. The 550 is the most powerful machine in the line, and will be running AIX 3 Unix. The bad news is that the move represents a massive downsizing because the machines replace a Cray Research Inc XMP supercomputer and Amdahl Corp mainframe under UTS Unix.

Interleaf says it will ship an Open Look version of its technical publishing software in the first quarter of next year.

American Airlines was the winner of Unix Expo's first annual award for excellence, awarded to the user "that most exemplifies, illustrates, or advances the cause of open systems": American has over 100 workstations from MIPS, IBM, HP, Sun and others, networked at its Dallas/Fort Worth campus used for planning capacity.

According to UK journalist David Tebbut, IBM and Apple named their object-oriented joint-venture Tallient rather than Taligen, because the latter could have been construed an anagram of genital!

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6-8 NOVEMBER 1991 OLYMPIA 2 LONDON

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, November 11-15 1991

Number 359

UNIX SYSTEM LABS TO SPEND \$1M ON MINORITY STAKE IN FRANCE'S CHORUS SYSTEMES

As we went to press last week Unix System Laboratories was reportedly asking its board to rubberstamp its decision to take a \$1m minority position in the French microkernel house Chorus Systemes, USL's first outside investment. Sources said the deal would cement a new strategic relationship between the pair which will see SVR4 and Chorus Mix, the microkernel product, evolve in tandem. When announced, USL will stop short of saying it is adopting the French technology outright. The deal is believed to be a waystation on the road to such an arrangement. In the interim, Chorus will be appointed a USL value-added reseller, a brand new designation unique to the company. The firms are supposed to co-market the product. USL will share in R&D. The move should help USL in its efforts to leapfrog the Open Software Foundation's microkernel plans and give it and its OEMs a headstart towards a commercial-grade microkernel architecture supporting real-time fault tolerance and massively parallel machines. Chorus, whose technology has been ported to SVR4 with the help of Unisys Corp, is regarded as the only commercial microkernel currently available. OSF, which also considered using it, has opted instead to use MACH technology from MIT.

MIPS TO REVEAL INSTANT ADVANCED RISC ACE KIT

Apparently to jumpstart ACE, MIPS will come up with an instant Advanced ARC kit next week as part of RAP, its new Reference ARC Program. The move closely resembles what Sun has done for its cloners, and what the PC players do for their followers. If the current crop of rumours is to be believed, ACE needs to find the fast track, reportedly being bogged down by development woes, multiple agendas and the financial ills of its leaders such as Compaq, SCO and MIPS itself, all leading to a possible loss of confidence. The kits will come in custom as well as standard vanilla flavours for building machines around the R4000 and ARC's unique firmware-based Hardware Abstraction Layer (HAL). Instant ARC kits, however, do not solve the Initiative's software issues: SCO, supposedly ACE's primary Unix developer, is said to be retreating to its Intel roots (like working on a 586 port) now that SVR4 has been accepted as an ACE alternative, and it now appears that DEC may be doing the bulk of the work itself. Some reports say that DEC, impatient with SCO's slow progress on building an ACE developer's kit from its OSF/1 kernel code, had recalled the work. Speaking at an ACE media roundtable at the Open Systems Show in London last week, SCO spokesman Steve Spill admitted that SCO "may have gone overboard on MIPS initially", but was still involved in joint development work with DEC.

STARDENT SETTLES FOR ORDERLY ASSETS SALE, SHUTDOWN

Stardent Computer Inc, the Concord, Massachusetts graphics superworkstation company formed by the coast-to-coast merger of Ardent and Stellar, has given up what has proved a very unequal struggle since the merger and decided to liquidate. The company had been hoping for a rescue postal order to arrive from its Japanese sugar-daddy Kubota Co, but insists that the decision to liquidate was its own and not Kubota's. Kubota Pacific Computer Inc, which bought the development rights to the Titan R3000-based workstation last year, will be assigned US and European marketing rights as well. Stardent is looking for a buyer for its 80860 RISC-based Vistra graphics workstations. The company announced plans in August to transfer its Application Visualisation System to a new company, AVS Inc (UX No 348), and that effort is proceeding. Stardent chief executive Bill Poduska plans to become chairman of AVS Inc once the spin-off is completed. If the Vistra business is not sold by the end of the year, it will be closed. A new venture staffed by existing employees will be established to support the 500 or so Stellar GS and DS families. Stardent has to go down in history as the second biggest sinker of venture capital after Dr Gene Amdahl's failed Trilogy Ltd: it had received more than \$200m of venture capital by the time it reached its decision to close its doors and sell its assets; sales in 1990 were only \$40m.

MOTOROLA LIFTS VEIL ON

64-BIT SUPERSCALAR - THE 88110

Motorola's 64-bit superscalar piece, the 88110, was "technically disclosed" last week at the Microprocessor Forum in San Francisco, meaning they lifted the kimono on just about everything but price and availability. A similar disclosure will be made in Europe next week at the 88Open general meeting in Amsterdam. Combining all the functionality of the 88100 CPU and 88200 cache and memory management units onto a single chip, the 88110's plus-points include a high degree of parallel instruction execution, and on-chip 80-bit floating point and 64-bit graphics units. A secondary cache controller, the 88410, is also available "for particularly demanding applications", with cache sizes from a quarter megabyte to one megabyte. Implemented in 0.8 micron triple-level metal CMOS, Motorola says it can easily be shrunk to 0.65 micron technology without design modifications. It has less than 1.3 million transistors. The thing was called equivalent, if not better, than the MIPS R4000, but without the R4000's large external cache. A SPECmark of 63 was quoted. Graphical capabilities are said to be five times the Intel i860. Motorola has apparently recently produced its first functional silicon, and won't talk about marketing issues until it has larger, sample quantities of the device available. Rumour has it the yield is pretty clean.

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OPEN SOFTWARE ASSOCIATES BRING NEW GUI SOLUTION TO MARKET FROM DOWN UNDER

Newest addition to the growing list of firms offering a way of easing the problem of having to port an application to a growing number of different graphical user interfaces is Open Software Associates, Sunnyvale, California. Making its show debut at Unix Expo a couple of weeks ago, the firm was showing off OpenUI, software which allows developers to add a graphical front-end on to an application which will then run - and have the same look and feel - across a range of different interface environments: it'll also bring the application up on an ASCII terminal. Open Software Associates president, Greg Bean, says OpenUI is different from other products competing for the same sort of business, such as the XVT Inc, Neuron Data Inc and Open Inc offerings (UX No 358), because OpenUI is neither an emulator or a toolkit. When running under different interfaces, the software effectively becomes those environments, Bean claims. It's currently only available for Motif and Microsoft Windows - and character-based systems - but an Apple Mac version is underway, plus support for Novell NetWare, and Steve Job's NeXT, which has ambitious plans for its NeXT Step operating system and interface environment is also reportedly looking closely at the stuff. OpenUI costs \$5,000 for a development licence. OSA is staffed by a band of refugees from Hewlett-Packard's former software development operation in Melbourne, Australia. When HP said it was going to pull the plug on software development over there, the employees bought the technology from HP and went off and formed Open Software Associates. Currently it operates out of California and Germany, and has a couple of dozen employees.

TIVOLIS'S WIZDOM OUT NEXT MONTH ON SPARC

Tivoli Systems' distributed object management framework, WizDOM - some components of which are included in the Open Software Foundation's Distributed Management Environment (UX No 352) - ships from next month at a cost of \$500 per node. Ironically, WizDOM, which uses the dynamic method of integrating objects into a distributed system - like the HyperDesk/DEC object development framework - will only be available on Sun Microsystems Inc workstations: a Novell Inc NetWare version will follow, whilst ports of OSF members' hardware are further out. WizDOM uses Tivoli's own remote procedure call protocol, and although the firm says it will move to conform to the Object Management Group's Object Request Broker specification - to which OSF has publically committed - it has no timescales for that work.

UNIFORM, EUROPEAN FORM WORLD FORUM OF OPEN SYSTEMS USERS

Moving to combine the activities of all existing international user associations dedicated to Unix and open systems and to provide equitable representation for all countries where they are important, UniForum and EurOpen have joined to form the World Forum of Open Systems Users, which ironically excludes UniForum UK, which broke with the US organisation some time back. Once established, the World Forum will investigate possible avenues of co-operation with the likes of X/Open Co Ltd, Unix International Inc, the Open Software Foundation, Institute of Electrical & Electronic Engineers, and any of the other appropriate standards groups.

DEC HAS NAS FOR IBM, HP - NOT SUN

DEC is extending its NAS, Network Application Services, software to support IBM and Hewlett-Packard Unix-based servers, but not the Sun Microsystems range. NAS allows DEC, IBM and Apple computers to link-up to Unix workstations and servers, and includes decnet with OSI support, VMS/Ultrix connection, Pathworks Server (DEC's implementation of Microsoft LAN Manager), the remote system management client, All-in-1 mail server, DECmessageQ, compound document architecture and the object-oriented ACA services. OSF/1 and ACE versions of NAS will follow next year, with an IBM MVS release slated for 1993. US reports say DEC had intended to announce support for Sun Microsystems servers at the same time - pre-press material apparently listed SunOS amongst those operating systems NAS would be adapted for - but pulled it from the eventual release.

BULL WOOS DEC, HEWLETT-PACKARD IN QUEST FOR ALLY

Compagnie des Machines Bull SA, which said in September that it would soon announce an alliance with a large information technology company, has now confirmed a report in *La Tribune de l'Expansion* that Digital Equipment Corp and Hewlett-Packard Co are among several companies with which it is in talks about forging an alliance. The only part of Bull's hardware business that has serious prospects for growth is the Unix systems business, where the company is a supporter of the Advanced Computing Environment initiative and already offers machines bought OEM from MIPS Computer Systems Inc. DEC is one of the leading ACE supporters; Bull, DEC and Hewlett-Packard are all sponsor members of the Open Software Foundation.

TANDEM SHOWS FIRST RISC NONSTOPS, NEW UNIX MODELS

True to its February word that it would have an implementation of its Guardian operating system for MIPS Computer Systems Inc's R-series RISC family by the end of the year, Tandem Computers Inc has released R-series based NonStops running the fault-tolerant Guardian, as well as new models in its fault-tolerant Unix line and a new disk storage system (UX No 356). The Unix-based Integrity systems run what the company now calls NonStop-UX and they can be configured with a Reliable Ethernet option that is said to extend fault tolerance to the Integrity Ethernet subsystem. The Integrity 300 is claimed to provide twice the throughput of its predecessor, the Integrity 200 system, in database management applications, and the Integrity 200, formerly the Integrity S2, is now offered at a 20% discount. The new Integrity 100E entry-level system is upgradable to an Integrity 200 or Integrity 300, and all three are based on either the MIPS' R3000 or R2000 RISC processors. Tandem says that it will offer R4000 and R5000-based products when they are commercially available. The Integrity 300 is rated at 23 MIPS and runs at 25MHz. It offers between 1.3Gb and 27Gb disk storage, 64Mb local memory, 128Mb global memory and costs \$159,800, £118,086 in the UK. The new entry-level Integrity 100E, based on the R2000, executes at 14 MIPS, as does the Integrity 200, and system memory can be expanded to 40Mb. Disk storage goes from 590Mb to 27Gb, and it costs from \$94,100, UK £69,832. Tandem says that the entry-level NonStop CLX/R systems are well suited for entry-level distributed computing. There are both proprietary and RISC-based models in the line, and the machines are offered with two to four processors. With two RISC processors, the G1220 costs £79,253, and the four processor G1240 is \$151,302. The midrange NonStop CLX systems go from two to 16 RISC or CISC processors, and Tandem claims a performance range of 11.5 to 92 transactions per second. Out now, they cost from £123,091 to £960,260. The CLX/R system - from \$24,950 in the US - will be available this quarter.

MICRO FOCUS INTRODUCES NEW COBOL DESIGNED FOR IBM AIX LINES

Micro Focus Plc has launched a Cobol compiler and tools specifically for IBM Corp's three AIX Unix environments - AIX/6000, AIX PS/2 and AIX/370. The products include Cobol for AIX, Cobol with Toolbox for AIX and Cobol Run-Time Environment for AIX. The new products are designed to enable programmers to migrate applications across AIX environments and offer compatibility with Micro Focus's MS-DOS, OS/2, Windows and Unix offerings - and IBM is to join Micro Focus in marketing the products worldwide. The products are enhanced versions of the IBM AIX VS Cobols and were developed jointly by IBM and Micro Focus. The AIX PS/2 version is out next month, the AIX/6000 and AIX/370 versions follow in December.

A EUROPEAN FIRM WILL JOIN THE IBM-APPLE ALLIANCE, APPLE ANNOUNCES...

A European partner is to be introduced into the IBM Corp-Apple Computer Inc alliance, Apple president Michael Spindler revealed in Frankfurt last Monday. "The alliance with IBM was not intended to remain a bi-lateral relationship. We are talking to other European systems vendors." The choice is a narrow one these days, with only Siemens-Nixdorf Informationssysteme AG - not a major world player in personal computers but keen to be one, and Ing C Olivetti & Co SpA, whose allegiance to the Advanced Computing Environment has seemed less than rock solid, as the two most likely. Less likely are Groupe Bull SA, Amstrad Plc, Schneider Rundfunkwerke AG and Tulip Computers NV.

...AS IBM-INTEL iAPX-86 PACT CHALLENGE TO IBM-APPLE

Making it clear that IBM Corp is not convinced that its alliance with Apple Computer Inc is the whole solution to its problems on the desktop, the company last week joined Intel Corp to announce the formation of an equally-owned joint venture - the Robert N Noyce Development Center - staffed by 100 people in Boca Raton, Florida to design more highly integrated versions of the 80486 and succeeding microprocessors, with graphics controller and internal communications controller with the CPU+cache+floating point processor 80486 core, bringing most of the logic of an 80486-based PS/2 down to a single chip. Both companies will have the right to make chips that result from the joint venture but only Intel will be free to market them to third parties - and only after IBM has had a four-month lead in designing them into its own products. The agreement also gives IBM the right to manufacture future versions of Intel's iAPX-86 line - the 80586 and follow-ons - for use in IBM computers for the next 10 years - but as before, only a part of its requirement. Also it is not permitted to design proprietary versions of the 80486 and up as it has done with its 386SLC variant of the Intel 80386SX.

DEC MULLS PLAN TO RALLY SUPPORTERS ROUND LICENSED ALPHA RISC WITH VMS

Digital Equipment Corp is expected to announce details of its strategy to license its VMS operating system to other manufacturers sometime in February (UX No 306): the company has confirmed that it intends to license technology - both hardware and software - but it is maintaining a coy silence on the specifics. It seems highly likely that the company wants to rally supporters to its forthcoming Alpha RISC in the same way that Hewlett-Packard Co is doing with Precision Architecture, and no doubt feels that it is so late to the party that it needs to offer an additional inducement - and VMS is the one proprietary operating system widely enough used to be attractive. DEC also wants to have Microsoft Corp's forthcoming Windows NT operating system implemented on the Alpha RISC, and has changed its mind on Unix, saying that it will put both Ultrix and the Santa Cruz Operation Inc Open Desktop on it. DEC is keen to stress that its long-term strategy is one based on openness and it believes that other vendors would be interested in exploiting the thousands of applications for VMS, and concedes that at some point, VMS and Alpha could be added to the Advanced Computing Environment specification. DEC's new direction puts a big question mark over its commitment to the MIPS Computer Systems Inc R-series RISCs. The Alpha RISC line is likely to come in above DEC's MIPS-based workstations: US reports suggest the things may ship as early as the third quarter of next year, with 100 SPEC-marked Alpha machines tagged at \$20,000, and a 50 SPEC-marked version at \$3,500 arriving the following year. A symmetric multiprocessing Alpha part is reckoned to be on the cards for 1993 - the standard CPU is expected to run at around double the clock speed of DEC's current 83MHz CISC VAX processor.

INTERACTIVE TO BECOME SUNSOFT ON THE 18th

SunSoft Inc's acquisition of the Intel-Unix side of Interactive Systems Corp from Eastman Kodak (UX No 350), is expected to be complete by the 18th of this month, when the formation of SunSoft Europe and the expansion of SunSoft in the US will be announced. Interactive, on both sides of the Atlantic, will become SunSoft, though which, and how many Interactive employees will be retained by Sun Microsystems Inc's software subsidiary is still being thrashed out in the US. Reports that Steve Job's Mach-based NeXT Step operating system and interface is up and running on the Sparc RISC chip amongst others (UX No 358), were confirmed by Alex Osadzinski, director of business development for Sun Microsystems Laboratories Inc - Sun's research and development wing - who believes it'll also become available on DEC and Hewlett-Packard platforms in the future. SunSoft itself is unlikely to license NeXT Step, which it could then OEM on Sparc boxes: it's thought to have balked at Jobs' terms for access to NeXT Step source code. However, porting the environment to other processor architectures is not thought to be technically difficult. Osadzinski says Sun Labs is currently working to make the Open Look interface more intuitive, with additional colour support and 'rooms' functions. Next-generation compilers that will optimize whole applications, 'nomadic' software - in other words operating systems and applications for portable environments - and infra-red connectivity solutions are also underway. And this Tuesday, Sun's SunConnect subsidiary, which is now doing all the networking and communications stuff for Sun, is likely to announce a version of Novell Inc's Portable NetWare for the Sparc architecture, following the introduction of NetWare SunLink for connecting Sun workstations to MS-DOS, OS/2, Windows and Mac environments (UX No 356).

USER ROUNDTABLE MEET BARELY FIZZLES ON FIREWORKS NIGHT

Sixteen user organisations from around the world, representing many of the largest computer buyers, met in London on bonfire night last week, hoping that the very existence of their so-called User Roundtable would be enough of a show of procurement power to encourage the industry to accelerate the development of open systems products. "The industry is littered with unfulfilled promises of interoperability, application portability and standardisation," argued John Spackman, chairman of the London meeting. However, the Roundtable, which also wants to promote the general business benefits of open system strategies across the board, covered little ground that hasn't already been well-trodden at its previous get-togethers in Dallas and Vancouver earlier this year (UX Nos 314, 336). Spackman, said a working party will begin looking at the various user requirement processes and methodologies currently employed by the Roundtable groups, so that their efforts to provide input into the international standards and vendor can be harmonized. As well as processes, Spackman says it'll look at technologies that are "particular areas of technological concern," such as distributed computing, distributed management, security and transaction processing. The Roundtable won't produce any standards of its own, but, with the clout of its adherents behind it, is expected to try and influence those organisations that do, encouraging support for both de facto and de jure standards. The grand definition of 'Open Systems' that it has been working on since its last meet is now complete, Spackman said, and will be revealed after one further round of consideration. It is thought to include an emphasis on business benefits, flexibility, and the reduced risks and costs of implementing and maintaining open systems.

COST OF OWNERSHIP OF MID-RANGE UNIX SYSTEMS DOWN BY 20% IN A YEAR; PROPRIETARY BY 17%

by Noni Stacey

Over the past year, the cost of Unix-based systems have fallen by an average of 20% across the mid-range, and proprietary hardware by an average of 17.5%, with hardware falling faster on high-end systems, but the price difference of hardware between proprietary and Unix-based systems can be as much as 25% for systems of comparable capacity.

These are some of the findings of the Midrange Systems Report 1991 compiled by London, EC4-based Touche Ross Management Consultants and Ideas International Pty Ltd of Abingdon, Oxfordshire, which suggests that the fall in prices on high-end systems is a move by manufacturers to bring them into line with equivalent smaller systems. A comparison of the MIPS ratings of Unix-based systems between 1991 and 1990 indicates a 59% increase in aggregate processor performance over that period, particularly in the 160- to 200-user group, where average MIPS ratings have doubled with the rapid rise in the number of dual, triple and four processor systems. Terminals and printer costs have fallen at a slower rate than those for processors and their components over the period so that the proportion of the overall cost represented by peripherals has risen. At the same time, there are broad variations in both the per-unit cost of similarly performing devices, and in their maintenance. Small differences in unit price of low cost but high-volume items such as terminals can be magnified to the point where they may eclipse savings made by discounts offered on high-cost, low-volume items. Systems that have the lowest initial cost may not end up as the most cost-effective over several years. Hardware and software maintenance charges continue to be major differentiators in this area. The report presents a view of the market as of October 1 together with surveys and analysis on the cost of ownership of mid-range systems from UK suppliers in both the Unix and proprietary markets. Ten companies participated in the survey, IBM, Digital Equipment Corp, Hewlett-Packard, ICL, Bull HN, Unisys, NCR, Compaq, Wyse Technology and Texas Instruments and the intention is to provide objective comparisons for buyers of the costs involved in buying a mid-range system.

Five-year cost of ownership

It models the five-year cost of ownership of supplier responses to a hypothetical tender document issued by Ideas International that describes four distinct multi-user scenarios. The scenarios define a workload of relational database and office automation application users, along with specific requirements for minimum peripheral components, such as disk storage and back-up devices. Each also defines an increase in workload after three years, with associated increases in the amount of disk storage and other peripheral devices required. However, the authors admit that the methodology represents a compromise, as the criteria for cost of ownership are limited. For example, factors such as personnel and environmental costs are significant but the report says they are 'highly site-sensitive' and therefore cannot be forced into a generic scenario. In addition, inflation, the depreciation in the value of the equipment and the time value of money were not taken into account. The criteria used were: the list price of all hardware components for initial and growth requirement stages; the impact of discounts; maintenance charges payable on each component over the five-year period; the initial list price for the appropriate operating system; the licence fee and support for the operating system and the impact of standard warranty periods. Ideas International provides comparative computer system information to hardware suppliers, corporate users, consultants, government agencies, research companies and newspapers. It is an independent, unaligned organisation. The report is available from Touche Ross or Ideas and is £195.

FRENCH MARKET BECOMES MORE CONCENTRATED

Meanwhile, Paris-based market consultancy, Pierre Audoin Conseil, has produced another of its yearly reports on the state of the Unix marketplace in France. The report, "Unix in France - Open Systems Integration," says that 42,100 Unix systems were delivered in France in 1990, 38% up on the 30,600 that arrived during the previous year. Unix systems accounted for 13% of the total value of computers installed in 1990 - up from 12% in 1989 - says the report, a figure it expects to reach 20% by 1995. Groupe Bull, Hewlett-Packard and Sun Microsystems retain their positions as the trio of top box suppliers, but, the report notes, IBM is expected to join this leading group by 1995. IBM takes over the fourth spot in the manufacturers' league table, the position vacated by Altos Computer Systems, whose share has slid by both volume and value. The market is also becoming more concentrated, the report adds - in 1989 12 manufacturers had a market share greater than 2%, in 1990 that number fell to eight. Sales of Unix software and services were worth around £256m. The report costs FF30,000 - around £3,000.

INMOS HAS £900 BOARD TURNING MS-DOS MICRO INTO X SERVER

Inmos Ltd last week announced two new products in its IQ Systems board-level Transputer Module product range, and said that it was making a move into the systems integration market with the appointment of two specialised distributors, MMD/Rapid in Reading, Berkshire and Transtech Parallel Systems, in High Wycombe, Buckinghamshire. The Bristol-based SGS Thomson Microelectronics NV affiliate announced the Transputer-based iX card, for transforming a networked personal computer into an X terminal. The board implements an X-server with Massachusetts Institute of Technology X11.4 capability, combining a 25MHz T400 Transputer, 1Mb video RAM, an Inmos G332 colour video controller, which supports 1,024 by 768 pixel resolution, and 2Mb to 12Mb dynamic RAM. Also new is the plug-in Inmos B429 Video Processing Transputer module for dedicated video image processing. The device comprises a 25MHz T805 32-bit floating-point Transputer, two 20MHz A110 1D-2D convolver signal processors, three buffer memory arrays of 512Kb video RAM each and 1Mb four-cycle dynamic RAM. MMD/Rapid and Transtech will distribute the Inmos IQ Systems range with associated products to systems integrators for assembly and resale. Transtech prices the iX board at £900, the video at £4,130.

COMPAQ TO ENTER MASS MARKET

Eckhard Pfeiffer has wasted no time in assessing the changes that need to be made at Compaq Computer Corp, and has announced a radical reorientation under which Compaq will mix it in the gutter with the low-cost clone manufacturers, and abandon its "dealers only" policy. It is considering mail order marketing. To the mainstream market, "the kind of features we had on our products were mostly not needed and not appreciated, and so were mostly out of the price range," Pfeiffer said, adding that the company was preparing straightforward entry-level products. Its major new target markets will include home, education, small and medium-sized businesses and government offices. The company does not plan any more lay-offs but says that it must reduce its cost of manufacturing. It has signed Merisel Inc and Tech Data Corp to distribute its machines in the US to value-added resellers, and has retained General Electric Computer Service and TRW Customer Service Division to offer on-site maintenance, work traditionally done by its dealers. As well as Rod Canion, five other officers have left, taking voluntary retirement because Pfeiffer found the management structure unwieldy.

USL REPLACES DOOLING WITH PIEPER, EXPANDS ITS REMIT

Unix System Laboratories last week recognised top management, replacing president and CEO Larry Dooling with executive VP of sales and marketing Roel Pieper. The change is effective immediately, although Dooling is to stay until the end of the year as vice-chairman, helping with the transition and such open items as the Novell joint venture, after which he will be leaving both USL and AT&T. The surprise move was mutually determined, he said. Echoing Pieper, Dooling said there was no major strategic disagreement inside USL leading to his departure, but rather a need "to shed more of its AT&T heritage". Pieper indicated that USL is entering a new era in which it is expected to broaden its exposure, work with different partners and invest in other firms - as it is proposing to do with Chorus. To do that, he said, requires a different "style and approach," a flexibility that will allow the company to make the compromises often needed in business negotiations. It requires personalities unassociated with the religious strife and emotionalism of Unix past. Pieper, who came to USL from Software AG in January, is credited with USL's move into the ACE initiative, inching the industry closer to unity than it's been since May of 1988 when OSF came into existence. Dooling is undecided what his next move will be, though he apparently has a number of interesting prospects. An operations guy with 15 or more years experience at AT&T, Dooling successfully weathered the difficult passage of moving USL out from under AT&T's control, brought in outside investors and put it in line to go public sometime down the road. Unix, once a drain on resources, is now a revenue generator and USL itself, even after a difficult year for computer companies generally, is believed to be at breakeven point or better. Further organisational changes are likely to follow the shift in leadership, beginning with a replacement for Pieper himself.

ALTOS TURNS TO ATHENIX FOR COMMERCIAL X-TERMINAL PUSH

Altos Computer Systems is ramping up its AXAP Altos X-Software Availability Program in preparation for a major push into the commercial X-Window market next year - and is turning to California start-up Athenix Inc to provide low-cost, X-terminal technology to sell in conjunction with its servers. Athenix, of Sunnyvale, California, was funded in September 1990, and plans to evolve into a full operations company in the Spring of next year. The company, now with 37 employees, says it has a new approach to X-terminals which it is currently taking through the patent process - it is thought to involve intelligent I/O controllers powered by MIPS Risc processors with their own memory, controlling groups of low-cost X displays. According to Athenix, the resulting products will "breathe new life into the multi-terminal Unix server market", with a combination of price/performance, market education and the right software. One of the investors in Athenix was the now defunct venture capital arm of MIPS, MIPS Technology Development (UX No 355). The latest independent software vendors to join the Altos AXAP programme include Basis International, Open Systems Holdings Corp, Personalised Programming Inc and SI Inc.

IBM CONSIDERS MAKING INTEL AIX AVAILABLE THROUGH THIRD PARTIES

Taking a leaf out of the SunSoft and USL books, IBM is currently considering making its AIX software for Intel boxes, the stuff it runs on PS/2s, a third party product distributed by resellers and sold by other hardware vendors next year. It is also considering moving it to other hardware such as EISA and AT-based PCs. IBM believes that such a move would dispell the proprietary atmosphere surrounding AIX that it says is holding back AIX's acceptance by large accounts - a situation that had it at one point considering a name change, a course it decided against. IBM also believes the move, which places at risk a certain proportion of its high-priced PS/2 sales, might derail some of the momentum behind SVR4, which it diagnoses as an emotional issue with many customers anxious not to be trapped in a proprietary environment.

ACORN'S ARM HAS NEW GENERATION PROCESSOR FAMILIES

Advanced RISC Machines, the Acorn, Apple and VLI Technology joint venture founded a year ago (UX No 311) has launched its first microprocessor family: the ARM6 application specific integrated circuit macrocell, ARM60 32-bit microprocessor implementation, and ARM600 application specific standard product. The core technology for the family is the ARM6 macrocell, a 32-bit processor core designed for embedded control and portable equipment applications: it offers fully static operation, a high instruction throughput, low power consumption and real-time interrupt response, and is intended as a core for application and customer-specific integrated circuits. Advantages of the technology, says ARM, include the highest processing power to power consumption ratio of any 32-bit processor currently on the market (14 MIPS average and 25 MIPS peak for 0.2W), and the smallest die size (11.3mm in VLSI's 1 micro technology). The ARM60 full-chip implementation has 32-bit address and data paths with 31 32-bit registers, arithmetic logic unit, multiplier and a barrel shifter. The processor can be configured in 26-bit mode for backward-compatibility with earlier ARM2 and ARM3 processors. The ARM600 contains an ARM6 processor, 4Kbyte cache, a write-buffer and a new memory management unit contributed by Apple to support small object-oriented systems. It also has a coprocessor interface allowing it to work with dedicated coprocessors such as a floating point accelerator. It is said to be ideal for embedded control and running advanced operating systems, including Unix and object-oriented systems, especially "new generation of portable computing applications". Running at 20MHz, it is rated at 15 MIPS. Cross-development tools have also been launched for Sun SparcStations, with PC, Apple Mac and Acorn versions to follow. Availability of all the products is immediate. Aside from Acorn, current ARM users include Aleph One (CPUs), Cambridge University (communications), Computer Concepts (laser printers), ICL (disk sub-system research), Micro Robotics (animatronics), Olivetti (laser printers), Perihelion (distributed operating systems), Radius (graphics accelerators), Riska (chess computers), Philips PKI (video-phones), and Sanyo (embedded controllers).

CYPRESS PACKS DUAL SPARC ON CREDIT CARD-SIZE BOARD

Cypress Semiconductor Corp, San Jose is claiming a breakthrough in microprocessor packaging that it reckons will usher in a new era in high-performance, compact-footprint computer technology. The company is now building a dual processor Sparc single-board computer on a board the size of a credit card. The Cypress CYM6122L is a 10-chip, dual-processor Sparc module, matching performance of the Sparcore module in half the space. That Sparcore module is designed into Sun Microsystems Inc's new top-of-the-line 600MP multiprocessing Sparcservers. The new modules use multichip module technology for mounting the circuits on a substrate using tape-automated bonding - a technology of which Bull SA in Paris was a pioneer in the early 1980s. It enables die in a miniature lead frame to be fully tested and burned in prior to assembly onto the substrate to maximise manufacturing yields. The five Cypress companies contributing to the effort were Austin, Texas-based Ross Technology, which develops the chips for the module, and came out with the fastest and most complete Sparc chip set, including the only integrated implementation for multiprocessor systems; the Multichip Technology subsidiary in San Jose designed the module to Ross's specifications and manufactures it; the chips are inserted in the tape bonding frames using automated equipment at Cypress Semiconductor (Minnesota) Inc in Bloomington; chips for the module are fabricated by Cypress's San Jose facility and Cypress Semiconductor (Texas) Inc in Round Rock. The devices on the module include two CY7C601 Sparc Integer Units, two CY7C602 Floating Point Units, two CY7C605 Cache Controller-Memory Management Units, and four CY7C157 Cache memory chips. Samples of the CYM6122L module are out now and production is set to begin next quarter at \$2,648 for 100-up for the 40MHz version.

SILICON GRAPHICS ADDS TO TOP-END

Silicon Graphics Inc has added the Iris Powervision VGXT to the top of its high-performance three-dimensional graphics workstation line, formerly topped-off by the 18-month-old VGX. With up to eight MIPS Computer Systems Inc R3000 RISCs, the thing performs at up to 286 MIPS, comes with up to 12Gb disk and is priced at from \$80,000 in base configurations. The VGXT is out in December, meanwhile, the VGX is cut by \$30,000 to \$50,000

unigram·x

The Weekly information newsletter for the UNIX @ community worldwide

Following the Open Software Foundation's departure from X/Open Group Ltd's board (UX No 356), the standards body is set to lose three more of its shareholders from the end of the year: Prime Computer Inc, still struggling after its protracted defence against takeover by MAI Basic Four; Nokia Data, having recently been taken over by ICL, which itself is a member; and AT&T Co, which in future will be represented by NCR Corp. The cost of an X/Open board ticket runs to around \$1m a year, with the loss of OSF too, that's at least \$4m a-year in funding that X/Open is set to lose.

At the dinner Apple/IBM/Motorola - which is now styling itself AIM - hosted on the eve of the Microprocessor Forum last week in San Francisco, it came to light that they expect first silicon of a single-chip rendition of the PowerPC next year, a year ahead of what has been expected. The silicon, coming from their Customer Design Center down in Texas, is intended for the low-cost desktop market. The PowerPC will also have a Motorola 88110 bus. Motorola is obviously driving a number of other issues but still no clear confirmation to reports the PowerPC will be pin-compatible with the 88k.

When asked why AIM should be believed any more than ACE, the trio answered because we're putting a billion dollars into joint activities, that's why. What's ACE putting into the kitty?

MIPS appears to be having buyer's remorse about having decided to go superpipelined on the R4000: during the MIPS presentation systems technology VP John Mashey suggested it might change to superscalar technology in future iterations.

Unix Expo attendance came in at 25,900, up 24% from last year, according to the organisers: they were pretty much the right people too, near as we can make out from our own leads. The issue now is were they tyre kicking or will they buy?

Opus VP of marketing Tom Lacey has left the company and for personal reasons has moved to Sacramento, California where he is working for Intel in the PC arena.

A few weeks ago we reported Toshiba was going to bring its Sparc portables in the US in Q1. Now we're told there are no plans to do so. Of course Toshiba's semiconductor people just signed to do the MIPS chips (UX No 356). Is there a connection or just no market or distribution channel?

This week MIPS is supposed to come up with a new family of cross development tools that will let folks on Sun 4s and DEC VAXs develop for the R3000 chip: the stuff includes a C RISC compiler, architectural and cache simulators and a systems programming package.

Direct from our all-but-forgotten file: except for the units Interactive sold as "Principal Publisher" of SVR4-on-Intel, all the Unix licenses it sold (and continues to sell right now) went through Microsoft acting as aggregator for both Interactive and SCO and skimming a percentage off of each.

Unix System Laboratories held a board meeting in the midst of Unix Expo the week before last and got its directors' nod on its joint venture plans: now all it's got to do is finish up the definitive agreement with Novell - a massive tome we're told.

88open marketing VP, Derek Meyer, is jumping ship and heading straight for Sun reportedly to lend his talents to Sparc.

California start-up Integrix upgraded one of its Sbus-based colour frame buffers to deliver 1280 x 1024 resolution at an increased refresh rate of 76Hz: the SFB 200, priced at \$1,000 and deliverable, is reportedly better than Sun's own performance.

Anxious to be among the first, Wyse is rushing out its version of SVR4 MP running on its two-year-old Series 9000i symmetric multiprocessors, boxes USL used as a scalability reference platform: the software which Wyse tweaked to enhance load balancing and improve virtual memory management and file access, is currently shipping in limited quantity in pre-release format.

The Object Management Group, or rather its wholly owned subsidiary Object World Corp, is scouting around for sponsors interested in funding a demand-side multi-client market research study it wants to do with IDC next year. Object World Corp is charged with developing the object marketplace and has scheduled the Object World conference next July 20-23 in San Francisco. It expects 60 exhibitors and 4,000 to 6,000 attendees.

ACE has sworn to support DCE but The Santa Cruz Operation has yet to arrange a license for it - both it and OSF apparently being touchy about the price.

There's only one thing Steve Jobs forgot to mention at Unix Expo when he boasted about the superiority of Next technology and how he was making the numbers and going public in 18 months (UX No 358): the fact that he was about to lay off 5% of his work force, about 30 people, to improve profitability.

Former managing director of MIPS Computer Systems Ltd in the UK, Nick Ray, has quit the firm under a cloud (attributed to a personality clash): Kristoseer Sygel, vice president of MIPS Europe takes over the reins until a replacement can be found, although Ray will continue to act as a consultant to MIPS on an unspecified project.

Struggling Alliant Computer Systems Corp, Littleton, Massachusetts has reportedly laid off another 27 of its staff and is having to require those remaining to accept pay cuts.

Pressing on with its Tuxedo transaction processing monitor, Unix System Laboratories Europe has appointed systems integrator Hoskyns Group plc to market the thing in the UK: USL has also released version 3.0 of its C++ language implementation, which will be available in binary form from a whole bunch of hardware and software vendors.

Regarding the report that the multi-processing version of MIPS' R4000 is bugged (UX No 357), Steve Bennett, European RISC business development manager at Integrated Device Technology, says the current mask for the part - Rev 1.2 - is intended to produce only PC versions. Rev 2.0 of the silicon, which should produce the SC - secondary cache - and MC - multi-processing implementations - will be released in November. Meanwhile, Bennett says IDT supplied all the parts used by Olivetti in the prototype ACE machine that it has been showing-off: LSI Logic is rumoured to have used Toshiba as the foundry for its R4000 parts.

DEC was all over SCO last week, fretting that SCO's layoffs (UX No 358) would impact its ACE schedule: Santa Cruz denied it and DEC believed it.

DEC showed a prototype version of Microsoft Corp's NT operating system on a DECstation at the Open Systems Show in London, with the development engineer claiming it was "the cleanest first implementation of an operating system I've ever seen": DEC seems to be warming rapidly to NT, which has been written under the charge of David Cutler, the architect of VMS.

Tony Heywood, one of the originals at Uniplex Ltd, has turned up at Locus Computing Corp, as managing director, Europe.

Corrections: readers of some editions of last week's Unigram.X will have thought the Object Management Group's ORB specification a little pricey at \$50,000 - it is \$50, of course.

Believe our body copy, not our headline: Solbourne's new top end is due next year, not this quarter (UX No 358).

Okay so we can't spell: the correct name of Chuck Peddle's company (UX No 358) is Thstyme as in This Time but it's still doing everything else we said.

Unigram.X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

KBN
18 Nov 1991

unigram·X

The weekly information newsletter for the UNIX® community worldwide

London, November 18-22 1991

Number 360

NEC WANTS SOLARIS FOR ITS POPULAR JAPANESE MICROS

Sun has approached NEC about licensing Solaris 2.0 for its PC-9800 series, the non-IBM-compatible micro family that claims a dominant 60% share of the Japanese marketplace. NEC confirmed to Unigram last week that such an approach had been made, but could not lend credence to reports already making the Japanese press that the deal is as good as done. Sun president Scott McNealy, reported to be a prime mover in the negotiations, would also not comment, other than to say that he talks to whoever SunSoft president Ed Zander asks him to, and that he has talked to a lot of people. The surprise alliance, if it comes to pass, would be quite a feather in Sun's cap and an added blow to Microsoft. The 9800, doyenne of the Japanese market, is based on Intel chips with a proprietary NEC operating system. SunSoft is already moving Solaris 2.0, its version of SVR4, to Intel, and has sworn to seek out other platforms. Meanwhile, NEC, which is already in the MIPS/ACE camp in the highly visible role of fabricating MIPS chips and ASICs, last week said it is going to co-develop future operating systems and distributed computing technology with Unix System Labs. As a member of the renegade Apache Group (UX Nos 328, 343) and a 3.6% investor in USL (UX No 327), it is thought that NEC wants SVR4 for its MIPS boxes. NEC is activating a strategic operation it quietly put in place back in April to handle these developments: the Open Systems Technology Center (OSTC) in Princeton, New Jersey, geographically near both USL and Unix International. OSTC, currently home to a staff of 15, expected to grow to 50 by 1993, is also charged with getting American ISVs to write for NEC's Motorola CISC and MIPS RISC-based EWS4800 workstation series (UX No 332), its UP4800 server and fault-tolerant FT20 (bought OEM from Stratus), as well as interfacing with X/Open, where NEC has a board seat, the X Consortium and Object Management Group, to bring NEC software in line with their standards.

ZEPHYR SLASHES WAVETRACER'S ENTRY TAG...

Acton, Massachusetts-based Wavetracer Inc will this week be showing at Supercomputing '91, in Albuquerque, a prototype of its new low-end desk side massively parallel computing system, due to ship next month. Zephyr, the latest member of Wavetracer's Data Transport Computer family, comes in 4,000- and 8,000-processor configurations and, as with the rest of the range, can be hosted by IBM RS/6000, Sun Microsystems, Silicon Graphics and Sony News workstations (Wavetracer has marketing alliances with those manufacturers). And, later this month, the company will launch an interface to the Apple Macintosh, and next month to HP's new HP9000 700 Series. The three-dimensional single-instruction-multiple-data machine is implemented using CMOS gate arrays from Toshiba Corp, as with the previous models. But, whereas the existing configurations, with from 4,000 to 16,000 processors, cost up to \$127,000, the new Zephyr, with up to 8,000 processors, ranges down to \$85,000. VP for product marketing, Robert Utzschneider, says the new machine is smaller and faster - the company has raised the clock speed and optimised the control software. Zephyr Models 4 and 8 contain 4,096 and 8,192 processors, and 128Mb and 256Mb memory respectively. According to a benchmark run for a US Department of Defense agency, the Model 8, which delivers some 700 MIPS, provides a price-performance advantage of over 50 to one over the agency's Cray XMP-48 system running the same benchmark. The Model 4 costs \$85,000, and the Model 8, \$150,000.

...AS ALLIANT STEPS UP WITH 800 CPU I860 CAMPUS

Although it has been trailing red ink for sometime, financially troubled Alliant Computer Systems Inc, Littleton, Massachusetts, today steels itself to introduce the Campus/800 massively parallel minisupercomputer, also at the Supercomputing '91 bash. It has been put together using clusters of its existing FX/2800 systems, utilising a total of up to 800 Intel Corp i860 RISC CPUs. Alliant says its beast supports both distributed, and shared memory - the latter allowing the processor units to share data, making application development easier. The Campus/800 is rated at up to 32 GFLOPS and comes with 128Gb memory. An 800-CPU model is composed of 32 ClusterNodes, each running a copy of Unix across 25 i860s with 4Gb shared memory. The ClusterNodes - which can be geographically located up to 10km apart - preclude the necessity to front-end Campus system with workstations, as they are, for all intents and purposes, FX/2800s. It ships from the second quarter of next year; \$1.5m will buy you a two-cluster, 50 CPU Campus. After selling its Swiss subsidiary to UPT Performance back in July - which handled sales to German speaking countries - Alliant is now withdrawing from direct sales to elsewhere in Europe. Futronic Inc, Espoo, Finland, is taking over the distribution channel in Scandinavia, Finland and the Baltic states, and Computer General, Chippenham, Wiltshire, will handle sales to the UK, Benelux and France. Alliant claims it will stem the flow of red ink this quarter, and expects to do \$45m for the year.

OMRON CLAIMS 4,000 MIPS FOR ITS FUZZY LOGIC BOARD

Omron Corp has introduced a fuzzy logic board for its Motorola Inc 88000 RISC-based Luna-88000 workstations, and the Luna II 68000 family models, and announced the combination as the Fuzzy-Luna workstation. The board, known as the FB-7098, is to be used primarily for the development and operation of applications using fuzzy databases and various expert and inferencing systems. Performance is put at the equivalent of 4,000 MIPS for diagnostic and search applications, 1,000 MIPS for pattern recognition. Control and application development tools for developing knowledge databases and fuzzy database processing systems are provided in a C language module. Omron will initially sell direct while it finds knowledge-based application development channels and looks to do 2,000 in the first year. On sale from January next year, the Fuzzy-Luna II is from \$19,700, the 88000 version starts at \$30,400.

RS/6000 ADD-ON WAIT DOWN TO INPUT-OUTPUT CHIP SNAG

Turns out that the delay in delivering the Power GT3, GT4 and GT4X graphics adaptors, and 9333 disk subsystem, which uses IBM's 5.25" 857Mb drive for the RS/6000 is down to the same problem that has hit the forthcoming low-end models of the RS/6000, which were due in October and are now put back to February. IBM told Electronic News that the delay on the graphics and disk products had nothing to do with the products themselves: the baby RS/6000s are held up by problems with an input-output chip and the company says that until the chip is fixed, it can't ship the new release of the AIX Unix operating system that supports the graphics adaptors and disk subsystem. If that sounds like a lame excuse, well the company says that integration of the operating system with the RS/6000 hardware is largely being done on the new low-end processor. It says the input-output problem is now resolved.

DELL IS QUITE HAPPY WITH INTEL CHIPS, SEES NO NEED FOR RISC OR INDUSTRY ALLIANCES

by Sue Norris

Glenn Henry, head of research and development at Dell Computer Corp in Austin, Texas, thinks the many various development consortia are "uninteresting". On a flying visit to the UK this week, he took time out to chat to journalists, during which

he revealed an almost rebellious stance on the Advanced Computing Environment, RISC and multi-processing.

The problem with the various development initiatives, Henry elaborated, is that they are too wrapped up with vendors' needs and vendors' ideas, and are missing out on one crucial consideration - the needs of the customer. Dell prides itself on its level of customer service and its attention to user requests; this level of customer relations the company achieves by selling direct, a strategy that ailing Compaq Computer Corp now looks to be adopting. "We're the master of our own destinies" was how Henry described Dell's direct sales policy - most of all, he says, by selling direct, Dell can control that all-important post-sales support. Back on the topic of ACE, Henry concedes that he's "not religious about it". If, he says, and only if, ACE succeeds, and plenty of applications are developed to support the resulting operating system(s), then Dell will quickly turn out its own ACE-compliant MIPS Computer Systems Inc RISC-based machine. "Our research and development group is very good", he says proudly - well, he would say that. It's not worth our while pumping money into ACE at the moment, he says, but if the initiative bears fruit, then Dell will get out a box with better price-performance than the rest: Dell is good at that.

Solaris

Anyway, Dell is working with Sun Microsystems Inc, and will be selling its Solaris 2.0 implementation of Unix on its Intel-based systems. This is the nearest Dell seems to want to get to consorting at the moment. Nor does Dell believe in RISC. According to Henry, if Dell ever moves to a RISC environment, it will be way ahead in the future. "We're satisfying 95% of customer needs with Intel processors, which are getting faster all the time." At Comdex, he says, Dells' 50MHz 80486-based board was tested against the 40MHz SparcStation 2, running AutoCAD - Dell came out three to five times faster; Henry conceded, however, that AutoCAD almost certainly biased the result in Dell's favour, and said that on other applications, the Intel board might not have won out quite so well. Henry is well known for not being RISC's best supporter - in his days at IBM, Henry says, he spent much energy arguing that the AT was better than RISC. But no-one listened. Intel processors always offer a better price-performance, he says, and that's why it made sense to do a version of Solaris for the Intel environment.

Dell, then, is very loyal to Intel, with which the company works in close alliance - for example, Dell is currently putting together an 80586-based machine. As to multiprocessors - who needs them? That's Henry's attitude. Dell has multi-processors internally, he says, but has never shipped them, nor is it likely to. Our high-end products are high-powered servers, he explains, and we rate the disk array technology as being more important to users here than multiple processors. The only software that benefits from multiprocessors, he says, is Santa Cruz Operation Inc's Unix V.3.2 and Banyan Systems Inc's Vines software - Novell Inc doesn't have multiprocessing software yet, nor is likely to have for some time. Again, Dell is waiting for others to work at bringing out the necessary applications software before it will commit itself to supporting the technology. Then, and only then, will Dell consider doing a multi-processor card. So does Dell really believe in Unix? Well, Henry claims that Dell is selective about its Unix business. The company began shipping its own implementation of Unix System V.4 a year ago, following customer demand but, according to Henry, Dell isn't interested in evangelising to new potential Unix users. Basically, Henry concedes, being IBM's neighbour down in Austin provided the opportunity, or necessitated the challenge, to get into Unix development. Dell's research and development spend is comparatively low - the company ploughs under 4% of revenues back into product development.

DEC SETS MARKETING MACHINE ROLLING FOR ALPHA RISC VAXES

The rumour mill has suddenly started working overtime speculating about the fabled Alpha, DEC's upcoming 64-bit RISC effort, due to turn into products starting next year (UX No 306,355,359). Either enough nonsense has already been spouted or DEC merely wants to catch a favourable PR tide - take your pick of motives - but it's now scrambling to put together an Alpha roundtable on Monday 25th in Nashua, New Hampshire. One insider promised that the media event would be devoid of marketing hype (his words) and focus instead on in-depth discussions with Alpha's hardware and software designers, architects and engineers. DEC will then follow this shindig with the December 3rd San Francisco debut, attended by some 800 people, of a swat of new MIPS-based workstations and servers including the \$4,000-\$6,000 ACE unit, baby Maxine (UX No 357), destined to compete against high-end PCs.

Strategic reversal

DEC's battering in the minicomputer market has forced it to reverse strategic direction. Where once it was determined to keep VMS and Unix strictly segregated on VAX and MIPS machines respectively, such is no longer the case. DEC has now partitioned the market into three parts: low-end ACE-OSF/1 machines designated price leaders; higher-end Alpha-OSF/1 boxes built for their performance characteristics; and Alpha/VMS computers, which will overlap with DEC's traditional VAX machines, for enterprise sites. A DEC spokesman told Unigram last week that Ultrix would definitely not run on Alpha despite reports to the contrary. DEC regards SCO's Open Desktop as OSF/1, so it seems possible that operating system could appear on an Alpha box. Unfortunately, DEC would not address that question, or queries about NT on Alpha or the notion of DEC throwing Alpha and portable VMS into the ACE initiative stew directly, reserving them for next week. DEC said the OSF/1 code the engineers are using is the same for both the MIPS and the Alpha boxes. The same applications (including of course all the old VMS programs) will run on both MIPS and Alpha after recompile. DEC is also building other tools to ease migration between the two platforms. DEC vice-president VAX/VMS systems and servers Bill Demmer has talked about having Alpha's from "desktop to data-center - and perhaps even lower than a desktop." He has also told users: "Next year we will bring out performance increments of more than a factor of two [out of the latest VAX models], to be followed the year after that by another performance factor of three to four when we introduce our RISC-based technology." DEC is also expected to salvage all VAX peripherals in moving its customer base to Alpha.

APPLE LIFTS THE VEIL ON ITS PLANS FOR REST OF THE DECADE

Apple Computer Inc says that it believes the new Power PC line of computers it is developing with IBM Corp will offer the best performance and price of any computers on the market when they are released in two to three years - and will be able to recognise speech as well as analyse foreign languages, and eventually this will lead to computers that can take dictation. The computers will also be able to run word processing programs embracing multimedia functions such as the inclusion of graphics and digital video into documents. The new machines will also support video teleconferencing, but Apple stresses that it will continue to bring out new Motorola Inc 68000 family Macintoshes after the PowerPC versions appear - and that the latter will be upwards-compatible with the former. The promises appear in a new Blueprint for the Decade published by Apple, which also says that System 7 will be enhanced to support applications written for Microsoft Corp's Windows and MS-DOS - and to read Windows disks. Apple also says it continues to spend more than half of its research and development budget on software and the emphasis will remain on powerful and easy-to-use systems. Apple also promises to offer colour laser printers and three-dimensional workstations.

ICL LAUNCHES NEW MODELS IN ITS DRS 6000 SPARC-BASED UNIX LINE...

ICL Plc has added four more models to its DRS 6000 Sparc-based system line, including two entry-level boxes and two top-end machines, along with new disks, memory boards, tape drives and back-up system. The DRS 6000 Level 20 and 30 "slimline" models respectively use 25MHz and 33MHz Sparc processors, with prices starting from £23,000 for the Level 20 and £31,000 for the Level 30, and they are available immediately. The Level 60 is a 40MHz uniprocessor, while the Model 70 uses two 40MHz SPARCs, rated at 58 MIPS - it is ICL's second multi-processor, following the launch of the Level 65 in the spring. Pricing on the Level 60 machine starts at £67,000 and the Level 70 is from £106,000 - both available next month. All four run ICL's implementation of Unix System V.4. ICL now also offers a 1.2Gb disk drive, 64Mb and 128Mb memory boards, 8mm tape, and the M10 low-cost colour terminal.

...AND NETWORK MANAGEMENT, TRANSACTION PROCESSING

ICL has also made additions to its Open Systems Management Centre software launched back in May, enhancing the software in five areas: distribution of software from a central point in the network on DRS 6000 and Series 39 nodes; monitoring of network operational status; provision of remote systems archiving and restore; presentation of network performance reports; and the introduction of a new operator access facility, OSMC Desktop Connect, based on JSB Computer Systems Plc's Multiview Desktop software. The Open Systems Transaction Management software for DRS 6000 is based on Unix System Laboratories Inc's Tuxedo Release 4.1, tied in with Ingres, Informix or Oracle databases. The Open Systems Transaction Manager has facilities for interworking with ICL's VME mainframe transaction processing system.

HYPERDESK TO UNMASK ITS OBJECT USERS IN JANUARY...

Alongside the announcement of its own object-oriented application development environment, HyperDesk Corp, the object software house, is expected to ship at the beginning of next year, a number of high-profile users which are preparing to unveil the first generation of applications developed using its object platform. Amongst them is thought to be UK firm IXI Ltd, which is working on an object-oriented version of its X.desktop manager (UX No 335). HyperDesk, which uses the dynamic method for binding objects into an overall system, says it will support the alternative static method - which is also included in the Object Management Group's specification for an Object Request Broker - by the end of the year.

...AS HP SHIPS DOMF TO IBM, HONEYWELL

Meanwhile, Hewlett-Packard, which in conjunction with Sun Microsystems is developing the DOMF - Distributed Object Management Framework - based upon the static binding method, claims it'll have both topologies featured in the DOMF well before HyperDesk. HP had the DOMF up and running under its Visual User Environment on HP-UX and NewWave on a personal computer at the Unix Expo show a couple of weeks ago - just a day after OMG publicly announced its ORB specification - although it wasn't to be found on either the Sun Microsystems or SunSoft stands. Initially there will be two versions of the DOMF, one using HP's Apollo NCS-derived version of the RPC - remote procedure call - networking protocol, the other using Sun's ONC RPC. Eventually the two versions will be integrated - possibly using the IDL technology from Unix International's Atlas framework (UX No 351) - but for the present the two versions will only be able to pass messages via a gateway. HP says it has already supplied early versions of DOMF to prospective OEMs like IBM and Honeywell, and will be shipping the thing to independent software vendors over the coming months.

INTERGRAPH ADDS C400 INTERPROs, CLIPPER OR SPARC SOFTWARE - OSF/1 DUE IN MARCH

Intergraph Corp, Huntsville, Alabama has two new mid-range workstations using its new C400 version of its Clipper RISC, the InterPro 6450 at \$25,000 up and the 6480 at from \$38,000. They were launched at the AutoFACT show in Detroit last week and are rated at 33 SPECmarks, 9 MFLOPS and come with from 16Mb to 326Mb memory and a choice of 19" or 27" screens. Running Intergraph's version of Unix V.3.2, they will be formally announced in March as part of a much broader series of C400 machines that are expected, by then, to be running the OSF/1 operating system, of which Intergraph has been a long-time supporter. Both low-end and higher-performance workstations are expected to come in above and below the 6400 family. The CAD/CAM specialist, which these days concentrates on specific market sectors, like high-end graphics, engineering, manufacturing and the auto industry, does not attend the high-profile Unix shows, but still commands large volume workstation sales. It also announced a new Version 2 of its Intergraph Engineering Modelling System, EMS, mechanical engineering software with new variational and parametric modelling functions, which runs on the Sparcstation 2s that its Dazix software subsidiary sells, as well as on the InterPros. It costs \$20,000 and will be out in March. And the firm announced that it is to port Advanced CAE Technology Inc's AC Technology C-Flow injection-mould simulation software on to its workstations, which will be integrated with EMS, and has released I/Warp plastic warping analysis software, which combines Moldflow Pty Ltd's MF/Warp application, also for EMS.

MIPS SAYS ARC KITS CAN SAVE ONE YEAR DEVELOPMENT TIME

Those instant ARC kits MIPS has come up with (UX No 359), are going to cost an ACE cloner between \$40 and \$60 a unit in royalties for a lifetime volume of 25,000 units plus a negotiated upfront fee MIPS wouldn't even ballpark for us. The prices given vary with whether it's the plain vanilla ARCSysystem 100 Design Kit or the ARCSysystem 100 Custom Design Kit. ARCSysystem prototypes are immediately available. First customer shipments of the design kits themselves, ARCSet chipsets for memory and I/O and ARCode source code aren't due until the second quarter. MIPS estimates 12 to 15 months of development can be saved. Toshiba, spider-like with its legs in the Sparc, MIPS and Motorola camps, and NEC, one of the main chip foundaries for MIPS, will provide the ASIC chipsets for the ARC kits including CPU, memory interfaces, on-board I/O, video and EISA bus connections. A MIPS spokesman says the company wasn't interested in having all six of its semiconductor houses involved because there wasn't that much business. Critics wonder if the American fabricators aren't involved because the margins are so low.

ANOTHER EUROPEAN PARALLEL INITIATIVE MAJORS ON TRANSPUTER

Yet another European initiative to develop the technology and usage of high-performance parallel systems is the subject of a meeting today in Germany, to be made public at the Esprit conference in Brussels on November 27. The Ei3 initiative, organised by the Daimler Benz AG subsidiary AEG Electrocom will include 16 computer companies, research institutes and end-users, according to the Financial Times. Computer companies involved include Inmos Ltd, Parsytec GmbH of Germany and Greek software house Hitec, as well as Cap Gemini Sogeti SA of France, in which Daimler has a stake: research houses are TNO (Dutch) Fraunhofer (Germany) and Inesc (Portugese). End users include weaving company Piraiki-Patraiki of Greece, flight-simulator house CASA of Spain and the AEG Electrocom, Dornier engineering and Telefunken Systemtechnik subsidiaries of Daimler Benz. Sources say that Ei3 will be complementary to the recently launched GP MIMD effort (CI No 1,747), concentrating on embedded applications rather than systems; funding may still be up in the air.

CRAY DECIDES IT DOESN'T WANT FLOATING POINT SYSTEMS AFTER ALL

Cray Research Inc has thought better of its idea of buying most of the assets of Floating Point Systems Inc, the minisupercomputer builder operating under Chapter 11 bankruptcy protection. As reported, Cray had considered paying \$3.25m for the business assets of the Beaverton, Oregon company, but now says the acquisition "does not fit the strategic interests of the company."

IBM SETS THE RECORD STRAIGHT ON MISPERCEPTIONS OF SYSTEMS APPLICATION ARCHITECTURE

The idea that IBM's Systems Application Architecture and related technologies have gone awry is a misconception: almost everything is now in place and everything is on plan. Katy Ring hears the Gospel according to IBM.

Addressing the third Sapiens User Conference in the UK's south coast resort of Brighton last month was Bob Libutti, programming systems director of market strategy with IBM (UX No 357). The reason Libutti had been invited to address the conference was, presumably, to reinforce the fact that since August IBM Corp and Sapiens Ltd have had a marketing agreement to sell the Sapiens product in the US and Sapiens is now an IBM Business Partner. Libutti started by saying that the Business Partnership programme is a way of doing business that is not totally comfortable for IBM. He, personally has had to do a lot of missionary work with the technical, development and marketing people at IBM to get the programme going. However, he said that once IBM is involved, the analogy should be with a marriage as the involvement in a business partnership is for life. He admitted that IBM's attitude to Systems Application Architecture has changed since its inception when the architecture was seen as an end in itself. Nowadays, said Libutti, IBM recognises more clearly that Systems Application Architecture is a set of building blocks that it has to get control of. In the user interface arena it needs to define and evolve a set of standards and it also says it needs to control the communications between systems.

"Simply by using Cobol you are partaking in AD/Cycle"

The message is that Systems Application Architecture is very very much alive - IBM claims that it has shipped 87% of what it promised in 1987. The only area in which IBM thinks it has fallen behind is with its promises for OS/2 because it has been waiting for the 32-bit version. However, IBM did not stand still and today, claims Libutti, offers twice the content of Systems Application Architecture that it promised. However, despite this Libutti admits that IBM has not done as good a job in merchandising what it has done as it might. He stresses that waiting for the Repository is not what AD/Cycle is all about, arguing that simply by using Cobol you are partaking in AD/Cycle. Libutti evidently thinks that IBM is being falsely chastised for the shortcomings of AD/Cycle. He explains that IBM could have launched an ultimate strategy, provided a set of tools linked together and made a big impact. But instead it chose a different path, it chose the flexibility of selecting companies and products in that paradigm for the benefit of the user. In pursuing this strategy, he admits that IBM made some mistakes and was forced to do some fundamental thinking about products that it had never done before. Meanwhile IBM has moved rapidly into the Unix environment, which it had not embraced for a very long time because of paranoia in some parts of the company.

Now says Libutti, IBM is investing heavily in Unix and is looking closely at the relationship between Unix and Systems Application Architecture. He added that IBM will not make Unix part of SAA, but is working on ways to get co-existence and co-operation between the two systems: AD/Cycle will be extended to include AIX. That is, a software engineering environment consistent with AD/Cycle with common system functions, common tools that are supportive of the AIX environment will appear courtesy of IBM. Common between AIX and AD/Cycle will be the Information Model with an AIX database and repository being developed by IBM. There will also be increased commonality between Common User Access and Motif. Indeed, Common User Access will also have some commonality with the Apple Computer Inc MacFinder as Libutti admitted that Apple will have some influence on future versions of Common User Access. IBM and Apple will be working together to develop a user interface that can cope with complex data structures necessary for multimedia applications such as image and audio. In addition IBM is doing some basic research in the area of maintenance in its efforts to produce a sub-frame work within AD/Cycle for redevelopment. This will cover both forward and reverse engineering. Moving on to the Repository, Libutti said that this is a good news, bad news story. The bad news is that the Repository is behind schedules, the good news is that this is because of the necessity of smoothing out the relations between vendors and the Repository will be a better product because of this - the first implementation of the Information Model and the Repository will go ahead in 1992.

"IBM is making a major investment in object-oriented technology"

As for the Information Warehouse, Libutti quipped that IBM does not need to distribute data as God has done that for us already, instead we need to manage that data. And that by virtue of the Repository, Information Model and Distributed Relational Database Architecture is what the Warehouse is designed to do. As far as object-oriented technology goes, Libutti said that IBM was considering using Sapiens tools internally in several industry areas. And prior to its discussions with Sapiens it has been talking to DigiTalk. Indeed, SmallTalk is used extensively in IBM - it was used to build the new Cross System Product, CSP, and was also used to by Intersolv Inc to build its product line for OS/2. Libutti said that IBM is making a major investment in object-oriented technology. This is all well and good except that IBM's Repository is based on the Entity-Relationship model and not the object-oriented model. However, Libutti says that IBM is extending the Repository to cope with object types, although when pressed said he didn't know when these extensions will appear. And anyway that still leaves IBM with an underlying database - DB2 - that is unashamedly relational. All that Libutti would say on the matter is that DB2 is "durable".

SUNPICS TO REVEAL NEWSPRINT

SunPics, Sun's new printing and imaging arm, is getting set to announce NewsPrint 2.0 this week, the strategic unit's first major product some two years in development (UX No 354). The breakthrough software, SunPic's contribution to what it calls Open Network Printing, is intended to allow any kind of printer or plotter anywhere on the network and run by any local operating system to do what it's supposed to - print. All it needs is Solaris 1.0 running on one station on the net. It will also supply postscript to lasers without the facility. The product will come bundled with Sun's branded 12ppm Fuji Xerox lasers for \$2,700 but SunPics also intends moving the software separately for a price it declined to quote at press time. The Xerox-made SparcPrinters replaced the pricey \$6,500 Apple Laserwriters Sun was OEMing a year ago. To move the product SunPics will use its dedicated sales force, Sun's newly reorganised SunExpress telemarketing operation, Sun itself, clone makers, distributors and OEMs. The last such companies include mail order house Inmac, Unix software specialists Qualix, Intelligent Electronics, MicroAge and Nynex/Computerland on the reseller front and Unisys, SAIC, EDS, Prime and Cray on the OEM side. SunPic's approach moves intelligence from the printer, where it's been moving lately, back to the server where it's more versatile. SunPics reckons it's one of the only companies with its arms around the complete technical solution: the printers, network access, RIP, fonts and typemaker - the latter based on Sun acquisition of Folio a few years ago. The company figures it's going to make significant headway in Japan and China - for itself as well as Unix per se - because it can spit out Kanji fonts in a fraction of the time it usually takes. It can also store them on the workstation rather than on an external drive which Kanji because of its thousands of characters often requires.

CARNEGIE SPIN-OFF MUNIN HAS DCE BACKUP SYSTEM

Pittsburgh based Munin Systems, a tiny 18-month-old spin-off of Carnegie Mellon University that came into existence simply to develop products based on OSF's DCE and DME technology, is working on a backup system for DCE. A beta version for Andrew File System 3.0, the precursor to the more robust DCE version, is due in the first quarter. A more commercialised rendition for Transarc's DFS is due towards the end of 1992 after the first iterations of DCE start appearing. Munin expects to sell its software to OSF resellers under OEM arrangements as a replacement for the OSF/Transarc system. Initial platforms are considered to be the HP 700, the Sun 4, DEC MIPS and IBM RS/6000.

IBM CONSIDERS FIGHTING "PROPRIETARY" TAG BY OFFERING PS/2 AIX UNIX VIA THIRD PARTIES

Taking a leaf out of the Sun Microsystems Inc SunSoft and Unix System Laboratories Inc books, IBM Corp is currently considering making its AIX software for Intel Corp iAPX-86 boxes, the stuff it runs on PS/2s, a third party product distributed by resellers and sold by other hardware vendors next year. It is also considering moving it to other hardware such as EISA and AT bus personal computers. IBM believes that such a move would dispel the proprietary atmosphere surrounding AIX, which it says is holding back AIX's acceptance by large accounts - a situation that had it at one point considering a name change, a course it decided against. IBM also believes the move, which places at risk a certain proportion of its high-priced PS/2 sales, might derail some of the momentum behind Unix System V.4, which it diagnoses as an emotional issue, with many customers anxious not to be trapped in a proprietary environment.

DATA SHOW '91

Japan's computer vendors and users turned out in force to Japan's second largest computer show, the Data Show 91, held over four days late last month, which attracted between 50,000 and 60,000 visitors a day. Anita Byrnes reports.

NEC Corp's stand placed emphasis on Unix applications and its early implementation of System V.4 to the NEC 4800 range of workstations. It has also made Unix V.4 available on its SX-3 supercomputer, which has a claimed 33 GFLOPS peak performance. At the personal computer level, NEC has been busy choosing its desired environments for Unix on micros - Santa Cruz Operation Inc's Open Desktop (the original version, not the one for the Advanced Computing Environment) has been Japanese and is available along with X-Windows, and OSF-Motif.

Oki Electric Industry Co launched an improved line-up of client-server offerings including a new model of the Okistation-7300 Unix desktop workstation, the 7300 Model 75, along with the Okiserver-8500 Model 221S, a mid-range - 55 MIPS - server based on a 50MHz 80860 chip and incorporating the FutureBus+. It has a maximum file capacity of 15.6Gb, working as a plug-in module. The server is being sold in its minimum configuration - 32Mb memory, 670Mb disk - in Japan at around \$56,000 and will ship from December with Oki expecting to sell 5,000 units over three years. The Okistation-7300 Model 75 is based on a 40MHz 80860 chip, with 16Mb to 64Mb memory and 200Mb to 5.2Gb disk. Both new models provide as standard seven slots for 32-bit EISA boards for connection of machines.

Matsushita Computer Systems was demonstrating a new version of the Solbourne Computer Corp S3000 Sparc-based workstations developed in conjunction with Solbourne, with a new monochrome thin film transistor screen that is claimed to be much easier to read than previous orange plasma displays. Sales of the Solbourne machines have reached the high 100s since commercial release in Japan in February this year. Meanwhile Matsushita Electric Industrial Co was demonstrating a Unix terminal with a colour thin-film transistor screen, which is claimed to be binary-compatible with Sun applications. No dates have been announced for the product release. On a lighter note Nippon Data General Corp did not let its recent buyout by Omron Corp dampen its taste for outrageous stands and again took the cake this year for a stand designed to resemble an underwater cave, complete with companions dressed as scuba divers and with hardly a computer in sight.

GENERAL MOTORS, FORD, CHRYSLER FORM CAD/CAM RESEARCH JOINT VENTURE

In a development that could reduce the total volume of business done by the computer-aided design and manufacturing industry, the Big Three US automakers, General Motors Corp, Ford Motor Co and Chrysler Corp have formed the CAD/CAM Research and Development Partnership, aimed at eliminating duplication of cost and effort at the three companies. The partnership, the fifth formed to cover areas of mutual interest by the three Detroit companies, will look into the feasibility of all using a uniform computer language in automotive engineering and design, but the effort will not stretch as far as developing manufacturing systems and will not interfere with any similar CAD-CAM alliances in which the individual companies may be involved. The other four areas of collaboration cover batteries, plastics, the environment and vehicle electronics.

LSI LOGIC RISC INTEGRATES

GRAPHICS WITH R3000 FOR X VDUs

Milpitas-based LSI Logic Corp has a new version of MIPS Computer Systems Inc's R3000 RISC, integrating graphics capability with the CPU on one chip. Aimed at the X Window terminal market, the LR33020 GraphX Processor is based on the LR33000 Self-Embedding MIPS processor introduced in October 1990 and merges the LR33000 RISC controller with a high-speed dedicated graphics engine and on-chip caches - 4Kb instruction, 1Kb data, four deep write buffer, a high-performance memory interface, and video control logic. On-chip graphics features include a BitBlit Co-processor, video FIFO buffer with direct memory access, video timing generators, direct support of video RAMs, burst reads and writes for pixel data, and hardware cursor support. For colour X-terminals, the LR33020 has a nearly glueless direct interface to both dynamic and video RAM banks (with optional banks for higher speed), boot PROM, Ethernet controller, keyboard, monitor and mouse. A typical colour system would have either 1,152 by 900 or 1,280 by 1,024 pixels and 256 colours from a 16.7m palette. It's \$129 for 1,000-up at 25MHz with samples in December, volume in March, and 33MHz and 40MHz versions planned.

PARSYS SHIPS POSIX-COMPLIANT IDRIS

Parsys Ltd, London says it is now shipping Version V of its Idris Unix-like Transputer-based operating system for the SuperNode massively parallel supercomputer. Idris is a Unix rewrite which originated 12 years ago under Whitesmiths Ltd, a spin-off of Unix Bell Laboratories. The operating system was in the first instance developed to run on Digital Equipment Corp hardware; Parsys has tweaked it to run as on the Inmos Ltd Transputer. Idris version V is Posix-compliant and is based on a scalable kernel architecture and features distributed scheduling, system call servicing and file system support, implementing a model based on a local network of workstations. Each Transputer has a full operating system kernel and communicates across a network of processors using BSD sockets and a lightweight version of the Network File System. Parsys, one of the partners in the Esprit general purpose GP-MIMD project, typically ships 16- to 64-Transputer-based machines, but has the capability to scale up to 1,024 processors. Its entry-level SuperNode system costs £30,000 for 200 MIPS, scalable to 10,000 MIPS. (Parsys charges £100 per MIPS; it expects this to drop to £25 per MIPS in two to three years, when the price of the T9000 has stabilised). The SN9000 system, which will retain the basic architecture of the SN1000 but reimplement it with the new T9000 Transputer, will make possible a performance increase to 160,000 MIPS.

XYLOGICS ADDS COMMS SERVERS

Burlington, Massachusetts-based Xylogics Inc has added the Micro Annex models ELS and XL to its range of Unix communications servers: both can connect eight or 16 serial ports to an Ethernet network. Using Intel Corp's 80376 processor - an embedded version of the 80386 - the ELS comes with new security features, the XL with network management enhancements. Xylogics is looking to sign-up as many as 20 distributors outside the US for its products, and expects existing OEM customers, such as Unisys Corp and NCR, to take the Micro Annex line. Despite Xylogics' red marks, which total \$2.7m so far this year, Alan Law, recently appointed to international vice president, said "I haven't joined a company that's going bankrupt." He believes that Unix connectivity and communications solutions - effectively the third product metamorphosis the company has undergone in its 12 year history - "will be the foundation of a new Xylogics." The firm will buy-in products from OEM sources, do its own, and joint development, on future products, Law says.

SILICON GRAPHICS HAS NEW IRISERVERS

As well as the top-end Iris VGXT workstation launched last week (UX No 359), Silicon Graphics Inc has added three new IrisServers to its line MIPS Computer Systems Inc R3000 RISC-based imaging systems. The multi-processing DataStation 2 comes with 16Mb RAM, 1.5Gb disk, uses a 35MHz R3000 part and costs £22,680. The mid-range Powerfile 50 has 32Mb memory, 5.5Gb disk and two 33MHz R3000 RISCs: it costs £90,230. The Powerfile 50 has 64Mb RAM, 12Gb disk, up to four 33MHz R3000s and is priced at from £141,800. All run SGI's Irix 4.0 multi-processing Unix and are available immediately.

TERADATA DBC1012 AS SERVER TO HEWLETT, AT&T, PYRAMID KIT

IBM Corp is laboriously trying to turn the supertanker around by persuading people to think of the MVS mainframe as a giant server - but it is inevitable that smaller, nimbler companies will get there first, and Teradata Corp, the Los Angeles company that builds the parallel DBC/1012 Data Base Computer out of scores of Intel Corp iAPX-86 family microprocessors, has come out with nine new communications software products to provide direct access to the DBC/1012, which it describes as a massive centralised database or data warehouse. There are three new host interface products providing support for Hewlett-Packard Co HP9000 Series 800, Pyramid Technology Corp MIServers and AT&T Co-NCR Corp System 7000 and 6386 Work Group Systems on the DBC/1012. There are also enhancements to existing interface products for MS-DOS and Macintosh systems including System 7 support; and four gateway products, developed in conjunction with Micro Decisionware Inc, Gupta Technologies Inc, Oracle Corp and Apple Computer Inc that enable Teradata customers to access the DBC/1012 using "scores of popular software tools and applications". Client software for the HP9000 Series 800 is \$10,000, for Pyramid MIServer and AT&T System 7000, \$25,000, and for the 6386, \$1,000, all now.

INGRES ADDS DATABASE EVENT ALERTERS TO LAUNCH PROGRAMS

Ask Computer Inc's Ingres Corp has created Ingres 6.4 by adding an Active Server feature to 6.3, in which Database Event Alerters automatically activate external application programs through SQL commands. This means that information in the database, such as inventory levels, can be monitored to activate external processes, such as faxing an order to a supplier, automatically through SQL commands - however, this is a facility Sybase reckons it's offered for 18 months in its Open Server. Version 6.4 also brings the IngresStar distributed database server for Unix as well as gateways to DB2, IMS, RMS, Rdb and Allbase/SQL - intriguingly the presentation separated the IBM and other databases into two boxes, suggesting that Distributed Relational Database Architecture may be provided only for IBM databases. Also announced was Windows 4GL for Windows 3.0, shipping in January, and VisionPro for MS-DOS and Unix. It is also pledging that 6.4 will be available simultaneously under all major environments in 90 days in the US and 120 days for Europe.

DEC PREPARES NEW TIES TO MICROSOFT AND PLANS TO SELL MACs IN EUROPE

In the endlessly shifting tides of industry alliances and rivalries, Digital Equipment Corp remains a pivotal player, and last week came two developments, one reflecting the newly emerging relationships, the other a somewhat surprising harking back to the past. DEC is a critical player in the Advanced Computing Environment initiative and has few weeks been expected to get much closer to Microsoft Corp and Compaq Computer Corp: now comes news that next week it will announce that it is developing a version of its All-In-1 office software for Microsoft Corp's Windows, while Microsoft will take networking products and expertise from DEC. In a rather more surprising move DEC yesterday revived its four-year-old alliance with the new apple of IBM Corp's eye - Apple Computer Inc - for the European market only, signing a letter of intent to market Macintoshes to its own customers and to put its interconnect products, VAX and RISC-based servers and Apple-related desk-top services through Apple's reseller net.

MARKET ROUNDUP

Uniforum UK's Roger Frampton, in response to our item on the World Forum of Open Systems Users last week (UX No 359), says that UniForum UK has not been excluded from the umbrella group: it plans to discuss whether or not to join at its forthcoming board meeting: he also says that UniForum UK has not broken with the US UniForum user group. Our comment was an indirect reference to the US group's relationship with European, previously the European Unix User Group, which first blossomed back in October of last year (UX No 306).

Motorola last week came up with the 68LC040, a low cost version of the 68040: it has first silicon and will sample this quarter with volumes in Q1. The part has no floating point and low-power buffers have been added. Motorola says it does 22 MIPS/25MHz for \$185 each; a 20MHz piece is also available. Another even more streamlined version, the 68EC040, for embedded control and X terminal losses the MMUs of the 68040 and LC040 and sells for \$104 at 25MHz, \$90 at 20MHz. The parts are priced in quantities of 10,000.

Human Designed Systems is using Intel's i960 Risc chip as the core of the new ViewStation FX Series, its next generation of single-board colour X terminals able to run local X client applications. The company rates the boxes' performance over 100,000 XStones. HDS has fully implemented both Open Look and Motif making it the first company, it says, to offer both window managers as local clients. Screen sizes include 14", 16" and 19" with resolutions ranging from 1024 x 768 to 1280 x 1024. Prices go from \$2,800 to \$5,500 list. HDS is currently delivering on the largest X terminal procurement ever made, a 50,000+ order from the US Army Reserve and Army National Guard (UX No 355). Computer Sciences' protest of the award did not affect the shipping schedule.

Force Computers Inc, Campbell, California, has signed a three-year deal with Wind River Systems Inc, Alameda, California: in the UK, they are to jointly develop, support and market Wind River's VxWorks real-time kernel on Force's series of VME boards and do software development for Force's planned Futurebus+ products.

Torrance, California-based Ashton-Tate Corp wants to encourage use of dBase IV under Unix, and has enlisted Santa Cruz Operation Inc in a promotion in the US offering special pricing on dBase IV for SCO Unix System V/386 and 30 days of introductory support until October 31: the two products will be bundled at \$600 for the single-user version of dBase IV and the multi-user version of System V/386; the offer is exclusively available to all Ashton-Tate dealers and dBase developers listed in the Developer Registry and is limited to one per customer.

Rational Rose is a new language-independent object-oriented application design package from Santa Clara, California-based Rational that runs on the IBM RS/6000 and Sun Microsystems Inc Sparcstations: out in February, it costs \$4,000.

Unitech expects to have Print.Unet, a network print spooler for heterogeneous Unix environments, ready next month. The Motif-based software is supposed to simplify print queue management and optimize share resources. Pricing will start at \$5,000 for a 10-node network.

Sun Sparcstations, IBM RS/6000s and Digital DECstations can now act as file servers on Apple Talk networks with AlisaTalk software from Alisa Systems Inc, Pasadena, California: previously only available for VMS-to-Macintosh connectivity, prices for the Unix implementations are \$1,600, \$6,000 and \$6,000 respectively.

Interactive Development Environments Inc, San Francisco, California, says its new code generator for Ada is now available on all Sun Microsystems Inc Sparcstations: it generates compilable code from IDE's Ada-based object-oriented structured design platform - OOSD/Ada.

Novell Inc and Eastman Kodak Co have announced a significant agreement to incorporate document image services into the Netware operating system. They are planning to support the integration of electronic image capabilities with network services like electronic mail and general applications. Novell says it will provide application program interfaces to link imaging applications with services to the NetWare servers, and this will provide users with imaging capabilities from the desktop whether running MS-DOS, OS/2, Macintosh or Unix. The two companies say that they will make common interfaces available to other vendors, and Kodak's Desktop Imaging Group will use its Desktop Imaging Technology to develop system software that captures, stores, manages and communicates images or unstructured objects within the NetWare environment.

Zentec is taking over the manufacture and marketing of Northwest Digital Systems' X Window products leaving NDS a role in new product development and enhancements: Under the name Zentec X Station, initial products will be the XT.15 and XT.19 monochrome X terminal based on NDS X10 logic boards. Behind these will be a new series of high performance colour X terminals using NDS' X20 board based on the TI 40MHz 34020.

Cybersoft, a Pennsylvania start-up, says it has the first virus scanner to work on Unix platforms and claims Vfind also ferrets out the beasts on heterogeneous networks containing PCs, Macs and Amigas: Trojan Horses and Worms are also apparently its meat. It's supported on Sun3s, Sparcs, NeXTstations and 88k boxes. Standalone and single network nodes cost \$300; small servers with up to 20 clients \$3,000; and large servers \$7,000.

Next week is the Corporation for Open Systems' big shindig near Washington. A bunch of other groups like the User Alliance will be having their meetings within the meeting/product fair. The piece de resistance is the November 20th power panel User Alliance has assembled: NCR president Elton White, HP executive VP Lew Platt, SCO president Larry Michels, DEC VP Dom LaCava, Apple VP Roger Heinen, IBM VP Ellen Hancock and Ethernet inventor and moderator Bob Metcalfe. And the keynote will be delivered by none other than Dr Henry Kissinger, who will talk on A New Regime - What do you do when the old rules don't work anymore?

DEC last week completed its acquisition Philips Electronics NV's Information Systems Division and said that it would be absorbing the banking systems and software side of the business into its existing European operations, and use the small business arm of the operation as the basis of a new European subsidiary, Digital Equipment Enterprise, serving what the French have long called Le PME, Petites et Moyennes Enterprises. In Germany, Digital- Kienzle Computer Systems will combine with the Philips operations serving small and medium-sized companies. DEC is taking on 7,000 Philips employees, but not the Eiserfeld and Apeldoorn plants.

Interactive Systems Corp has come out with its last release of System V 3.2 for Intel, called in its nomenclature Version 3.0: after this everything will be V.4. Version 3.0 is X/Open Portability Guide Release 3 compliant. The user interface has been redesigned for business users along with other little niceties.

Pyramid is teaming with CGS Computer Associates to extend its systems integration capabilities: CGS services heavy-duty financial companies like Nomura, First Boston, Salomon Brothers and Morgan Guaranty Trust, and they'll co-market complete solutions including RDBMS, strategic applications and client-server networks.

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The consortium du jour is SAFE, the Security Alliance for Enterprise computing, dedicated to proving to users that security and "open systems" (for which read SVR4) are not mutually exclusive: Its founders are Unix International and Unix System Labs naturally and other SVR4 groupies are among the initial members including Amdahl, AT&T Federal Systems, Oracle, Pyramid, Informix, Uniplex, Sun, Unisys and ITI/Rubix. The first meeting is set for Uniforum in January. Its trolling to get other OEMs, VARs and ISVs involved. UI, which will run it, is also kicking off a new technical workgroup in security.

Novell has reorganized into three business groups, Netware Systems, Interoperability Systems and Digital Research Systems: its Unix guru Kanwal Rekhi, previously executive VP, product development, was named to head the Interoperability Systems Group responsible for developing and marketing Unix stuff.

The Edinburgh Parallel Computing Centre at the University of Edinburgh is now the proud owner of a £2m, 16,384-processor Connection Machine from Thinking Machines Corp, and reckons it's the most powerful machine in the UK with a peak speed of 8 GFLOPS.

Sun Microsystems Inc shipped 96,447 workstations in the first half of this year, compared to HP's 36,340, says San Jose, California-based market research firm Dataquest Inc.

With four successive quarters of profits behind it, Data General Corp seems to be managing the strategy of transforming itself from a proprietary minicomputer company to a Unix systems vendor better than most of its siblings in the same boat: as the Aviiion business is growing fast, but is still only to \$200m out of a total of \$1,230m, it is clear that in contrast to Prime Computer Inc for example, it is still doing very substantial business with the Eclipse machines and has persuaded customers that they are safe to continue using the Eclipses for several more years (new models are on the way), and that it will see that they are all right when the line fades out.

Stratus Computer Inc claims that it is the first to win X/Open Co Ltd Portability Guide 3 branding for a fault-tolerant implementation of Unix System V with FTX Release 2.

The thorny question of the succession to Ken Olsen, 65-year-old head of Digital Equipment Corp is raised by the Wall Street Journal, which concludes that he will stick around at least until the launch of the Alpha RISC successor processor for the VAX and Unix lines: Olsen told the paper "I'm not going to crown anyone - there's no need to discuss succession when the chief executive is young and healthy," adding that while the post is the prerogative of the board, if he found any of them talking to the press about it, he'd fire them - something he is legally not able to do; Olsen also dismisses speculation that senior vice-president John Smith will be appointed chief operating officer by saying that the company might do that, but it would only reflect what Smith is already doing at DEC.

Universal Software's Open RS/36 software, which allows IBM System/36 applications to be moved across to the RS/6000 is now available in the UK from London-based Communic8.

Citing difficult market conditions, CAD specialist CalComp's UK operation is abandoning its distribution channel and will supply product direct to its 175 dealers.

Uniface UK Ltd has finally got around to replacing managing director Ed Humphries, who quit the firm back in July amidst industry gossip that Uniface was losing market share: Chris King, formerly UK sales director at Borland's Ashton-Tate, takes over at the Marlow, Buckinghamshire operation.

The Viking chip, aka SuperSparc, will start out at 50MHz working up to 100MHz over time, according to Sun's co-developer TI.

In a strange case of upsizing, UK magazine distributor, Seymour, has decided to ditch its IBM AS/400 in favour of an ICL Series 39 mainframe front-ended by a DRS6000 Unix box.

By common consent, parallel processing will grow into a very serious market in a few years, but at SofTech Inc, Waltham, Massachusetts, the waiting time is too long, the money available has run out and so it has decided that it must close its Compass Inc subsidiary in Wakefield, Massachusetts. Compass develops commercial grade compilers for highly parallel computers and SofTech will retain ownership of the technology and will license it to interested parties.

That single-chip version of the PowerPC Apple/IBM/Motorola were talking about at the Microprocessor Forum and touting as expected next year, a year ahead of schedule (UX No 359), is apparently a new addition to the line as originally described.

The Corporation for Open Systems is going into the publishing business next month with a quarterly called "OPTIV: the Business Journal for Open Systems" targeted at Fortune 1000 executives: COS calls it a business-to-business magazine written by businessmen demystifying and discussing technology in business terms. It'll start with 4,000 copies and hopes to increase circulation to 20,000 to 40,000 at a cost of \$60 a year.

Business Week says NeXT has yet to finish a quarter in the black and has run through most of the \$133m invested in it by Canon, Ross Perot and Steve Jobs himself.

Siemens Nixdorf is doing an OSF - sanctioned reference implementation of DCE for SVR4: OSF will make the stuff available for licensing along with existing implementations for the IBM's AIX-based RS/6000 and DEC's OSF/1-run 31000. SNI's work will run on its 486 MX300i platform.

SunSoft now has MVS/NFS 4.1, software designed to increase data sharing between IBM mainframes and workstations through on-line access to MVS files from Unix networks: The product, jointly developed by SunSoft and J Frank & Associates, makes ONC available on MVS mainframes. SunSoft has named Frank & Associates a master distributor and support provider.

Last week SunSoft, which apparently may open a Nihon SunSoft operation, started volume deliveries of Solaris 1.0 for Asia specifically the Japanese, Korean, Taiwanese and Chinese markets: The Kanji version, priced between \$1,200 and \$5,800, comes with the Hiragana and Katakana alphabets. The Korean, priced between \$1,100 and \$5,600, is in both Hanja and Hangul.

Daisy Systems founder Aryeh Finegold rounded by \$10m in venture capital from Hambrecht & Quist and others to finance Mercury Interactive Corp, a start-up that has spent the last two years quietly developing software to streamline testing application software and speeding time-to-market. Mercury will support the X Window environment.

Visix has a strategic marketing and technology partnership with Applix to integrate the newly rechristened Aster*x OA software with Visix's Looking Glass Professional GUI and pursue joint sales: first ships are due first quarter; pricing and distribution are undetermined.

Following its recent cosy-up with SCO (UX No 359), Oracle is expected to come out with new Open Desktop and multi-processing MPX versions of its database software.

In the UK Microsoft Corp is releasing an alpha version of its Windows NT environment for Intel 80386 and 80486 systems: the Windows-compatible release incorporates a development kit, has 2 million lines of code and is free of charge.

Correction: Mach technology originates from Carnegie Mellon, not MIT as we stated on last week's front page.

Bring cab fare: NeXT is going to try running NeXTWorld Expo in opposition to UniForum at the San Francisco Civic Auditorium January 22 through 24 while Uniforum is at the Moscone Centre. It's expecting 5,000 attendees. There's also a developers' conference promising revelations of future software technology and market direction.

Intel Corp has started fighting back over all those consortiums - ACE, Solaris, IBM/Apple - that proclaim RISC as their strategic direction while discretely hedging their bets with an Intel range alongside, where all the actual sales will be, says Intel: to back up the point, Hans Geyer, director and general manager of Intel Europe claims that an Intel machine is shipped every 1.5 seconds. To equal the number of machines Apple ships in a year, said Geyer, it would only take Intel manufacturers up to January 31st: as for Sparc the date would be January 4th at midnight, and to equal MIPS would take until January 2nd at 9am!

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

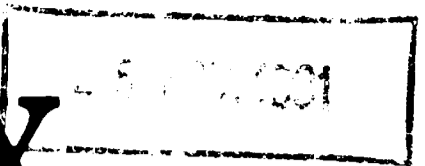
Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

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The weekly information newsletter for the UNIX ® community worldwide

London, November 25-29 1991

Number 361

DEC HAS 64-BIT OSF/1 RUNNING ON ALPHA RISC - MAY BE NEGOTIATING FOR MICROSOFT NT

In advance of Monday's roundtable meet in Nashua, New Hampshire, which will chew over Digital Equipment Corp's upcoming 64-bit Alpha RISC effort (UX No 360), the firm last week moved to take some momentum out of the rumour mill, saying that a 64-bit implementation of the Open Software Foundation operating system is already running on Alpha in the labs. That's the first port of OSF/1 to a 64-bit architecture, it claims. That will be the extent of the Alpha-Unix relationship in the near-term. The OSF/1-Ultrix melange that will surface in Santa Cruz Operation Inc's Open Desktop system software bundle, being prepared for the Advanced Computing Environment crowd, is initially being offered only as 32-bit product. It's being orchestrated this way to maintain compatibility with the spread of applications currently available for each of those three environments, even though the R4000 that MIPS Computer Systems Inc will supply to ACE is a 64-bit RISC processor. DEC says Open Desktop will move to a 64-bit architecture "in the fullness of time" - which would make it eligible for Alpha, on which its proprietary VMS environment will also figure - but the firm offers no parameters. Sources also claim DEC is getting ready to announce a pact with Microsoft that will put NT on Alpha. Something like this has been rumoured for months (UX No 328), but doesn't completely explain where NT Alpha fits in DEC's current scheme of things, which has OSF/1-Open Desktop on MIPS at the low end, OSF/1 on Alpha in the middle and VMS on Alpha higher up (UX No 360). Unless, of course, DEC is setting out to be all things to all people. Performance throughput - pure and simply, power - is driving DEC to go 64-bit all the way with Alpha. "In the labs it's already in advance of what anyone else has got now," says Chris Sarfas, DEC UK's Ultrix product marketing manager, "and users will pay for power." Alpha's proprietary VAX RISC chip is reported working and is expected to deliver 100 SPECmarks at 180MHz, translating roughly into 50 commercial IBM MIPS, or something in the neighbourhood of 100 Sun Microsystems MIPS. DEC's rollout of Alpha boxes should begin with a workstation priced about \$20,000, speculators reckon, pegged to be shipping in volume within in a year. While DEC's CMOS VAX boxes are forecast to be around through most of the decade, Alpha will increasingly impinge on their turf, moving up the scale from the 4000s to 6000s to 9000s. Observers say Alpha will be the first serious challenge RISC technology, which has already made a hash of the minicomputer marketplace, will make on IBM's vaunted mainframe domain. Wall Streeters are already betting Alpha will buy DEC a 20 to 30 times price/performance edge over IBM in two years, with DEC machines selling for \$3,500 per IBM MIPS.

SEQUENT ESCHEWS RISC AFTER RACING INTEL P5 AGAINST MIPS

Champion of the Intel Corp complex instruction iAPX-86 family, Sequent Computer Systems Inc, Beaverton, Oregon, has been taking a determined look at its future technology base, with a research and development project - funded to the tune of \$500,000 - in which its engineers created prototype multi-processor machines built around next-generation Intel 80586 P5 technology and MIPS Computer Systems Inc latest RISCs. Sequent has been a long-time supporter of CISC techniques over RISC - it has never seen the need for RISC. The machines were developed in the labs and run-off against each other to see whether it would be in Sequent's interest to adopt a RISC strategy that could lever significant price/performance benefits. In the event, a US insider revealed, using systems emulating a handful of processors, the MIPS-based system extracted an 8% performance advantage over the 80586 box. However, the measly single-figure gain in performance wasn't enough to sway Sequent management, which has decided firmly against re-architecting the company's line of computers to include RISC offerings and has terminated the MIPS project. Having built the prototype Intel machine, Sequent is now thought to be working closely with the chip-maker on a full-blown product-level implementation of the 80586, which uses some superscalar RISC technology. Intel claims the 80586, due to sample by the middle of next year, with systems slated for the end of 1992, will do around 100 MIPS. That, it claims, is faster than MIPS' latest R4000 RISC, which is SPECmarked at 62, and Motorola's new 88110 (UX No 359), which comes in - unofficially so far - at 64 SPECmarks. Sequent badly needs a boost in its fortunes to return to profitability. It withdrew from OEM sales of its computers back in July (UX No 341), and reported a third quarter net loss of \$23m last month on turnover that slumped 19.2%, bringing the nine-month net loss to \$49.7m. The firm announced that it would cut its 1,700-strong workforce by some 20% to reduce its quarterly expenses by \$6m.

ACE UNIX DELAY MAY CLEAR THE WAY FOR MICROSOFT ON INTEL

ACE developers say they have been told by the Santa Cruz Operation Inc that SCO's Open Desktop for ACE has slipped at least six months, pushing first availability from July of 1992 to the end of next year. The news has made them suspicious that the software will eventually be put on indefinite hold unless DEC, whose version of OSF/1 forms the basis of ODT for ACE, somehow intervenes. The developers' snapshot, due next month, is apparently unaffected. The reported delay, one of a series of crisis currently besetting the Initiative, has seriously shaken confidence that ACE will ever amount to much. Although SVR4 is now another Unix option for ACE, the Initiative looks more and more like it probably always was - a Microsoft-on-Intel play. The rumour mill claims SCO is positioning itself for an Initial Public Offering and hence is focusing on Intel where its strengths lie rather than on longer term business.

HP READIES THREE, FOUR-WAY UNIX MULTI-PROCESSORS

Shooting from the hip, US sources have let it be known that Hewlett-Packard Co's latest three and four-way multi-processing RISC Unix servers - officially under wraps for another couple of weeks - are being aimed squarely at Sequent Computer Systems Inc and its Intel Corp 80486-based transaction processing Symmetry line, plus DEC and IBM commercial systems. HP is finding the commercial transaction processing market - both for its Unix and proprietary servers - tough going, and is having to manoeuvre in a space where customer spending is already bared to the bone, against Sequent, IBM and an increasingly aggressive DEC, when pitching for business. HP's 9000 Series 870S models 300 and 400, with three and four PA RISC processors respectively, are due early next year and come with up to 760Mb RAM and 500Gb disk, supporting up to 2,000 users at the top-end. They extend the performance of the previous dual-CPU model 200, and are reckoned by US insiders - unofficially, as the results have yet to be audited - to perform 200 transactions per second according to the TPC-A benchmark suite, running the Informix Software Inc database and Unix System Labs' Tuxedo transaction processing monitor. A minimum performance mark of 165 is being banded for the servers, which compares to the 164 transactions per second offered by Sequent's Symmetry 2000/700 system configured with 16 Intel 80486 CPUs running Oracle. Customer sources suggest HP may step up to offer six and eight-processor servers based around the next iteration of its PA RISC, which is currently at version 1.1, by next summer. In the meantime, Sequent will up the ante come January, when it will begin to offer 50MHz versions of the 80486 CPU in its systems.

MICROMUSE OFFERS SPARCSTATION 2 CLONE...

In the UK, London-based MicroMuse Ltd has been showing-off what managing director Chris Dawes claims is the world's first true 40MHz, Sun Microsystems Inc Sparcstation 2 workstation clone, running the Solaris 1.0 SunOS operating system bundle. The Muse/iX 3000, with 16Mb RAM, 424Mb disk and a 19" screen comes in at £9,850 and ships in six weeks time. It uses the LSI Logic Corp-made, uniprocessor-designed 40MHz chip set - on an Opus Systems motherboard - that Sun itself uses, and which the Mountain View, California-based workstation manufacturer finally authorised LSI, Tera Microsystems Inc and Fujitsu to go ahead and sell last month (UX No 356). The only other two clones are in Opus' labs, Dawes reckons.

...AS TWINHEAD DEBUTS ITS 40MHz SPARC BOX

However, Taiwanese Twinhead International Corp's Milpitas, California-based subsidiary last week made good its July promise to deliver a 40MHz MBus Sparcstation 2 clone (UX No 340). Its TwinStation, previewed at Comdex back in October (UX No 357), is claimed to do 31.5 MIPS, against the Sparcstation 2's 28.5 MIPS, and is built around a five-chip ASIC set it has been working on which incorporates the 40MHz Cypress Semiconductor part as the CPU. It comes with from 8Mb to 128Mb RAM, two Sbus slots, 210Mb or 425Mb disks, Ethernet, SCSI, and 17" or 19" colour screens. Twinhead's UK operation in Basingstoke, Hampshire, primarily an MS-DOS and Novell PC box-shifter, is now gearing up for an assault on the Unix workstation market, and this week enters negotiations with potential distributors: it expects to sign three or four. The Twinstation will likely be configured with 32Mb RAM in the UK - the firm took delivery of its first three machines last week - though prices won't be fixed until the channel is in place. Twinhead's Martin Potter says the price point will be competitive with other offerings, such as the MicroMuse box (see above), and the thing will ship to distributors from the beginning of January. Twinhead has already got a multi-processing design awaiting software.

MIPS EYES EURO PARTNER FOR ARC KIT

As well as Toshiba Corp and NEC, MIPS Computer Systems Inc says a European semiconductor house is being lined up to provide ASIC chipsets for the instant ARC kit - including CPU, memory interfaces, on-board I/O, video and EISA connections - that it will market to ACE cloners (UX Nos 360, 359). MIPS has been parlying with a European partner for the last three weeks according to Peter Adams, European business manager for technology products, and a US fabricator may also be enticed to sign on. It's the large PC manufacturers who want an ACE RISC offering but haven't got the research and development capability - or the inclination - to do it for themselves that'll sign up for the kit, says MIPS, and then it'll only be worth the licence fee if they expect to manufacture over 5,000 systems, otherwise they'll probably just take board-level products from MIPS, which will ship from the end of the first quarter. In the UK, total fee per system for the kit - based on a shipment of 25,000 ARC boxes - ranges from £23 to £34.

MOBIUS STEPS UP TO SPARC

Mobius Computer Corp, a company best known for moving customized Interactive-on-Intel machines, has branched out with a Sparcette it's OEMing from an unidentified source that's not Sun, not LSI and not an Asian cloner. The new Mirage series is a Sparcstation 1 clone Mobius is building out of OEM boards. It uses a 25MHz LSI chipset bundled together with 8MB RAM, a 340 MB SCSI drive, a 17-inch colour monitor, Solaris 1.0, Open Windows, X.11, Motif, SunView and Clarity's OA package for \$7,000. It started delivering evaluation units earlier this month and expects volume in the new year when it will also add a Sparcstation 2 model for \$2,000 more. Mobius' interest in Sparc machines was apparently created by the software that will run on them; its respect for the basic Sparc chip technology being scant. But AutoCad doesn't run on Intel; and Interactive just became capable of running Wingz and Frame and other SCO ODT-style apps. Then there's all the software in Sun catalog. Sparc machines, however, are just a holding action for Mobius until Solaris 2.0 on Intel takes off, it thinks, in 1993. In the meantime, Mobius intends broadening its appeal away from its industrial control base into new corporate markets through software such as Clarity.

NOW CRAY SAYS IT WILL BUY FPS...

Once more Cray has decided that it will buy Floating Point Systems just days after pulling away and forcing FPS to close most operations and cut 200 jobs - Cray management is reportedly dithering over taking over an incompatible Sparc-based line.

**...AS DEC DISCUSSES MARKETING
CRAY'S Y-MP EL MINISUPERCOMPUTER...**

Digital Equipment Corp is following up its move to market the massively parallel machines made by MasPar Computer Corp - and take a stake in the company - by approaching Cray Research Inc and suggesting that it should distribute the new baby Y-MP EL minisupercomputer. Both sides stressed that no equity stake by DEC in Cray was contemplated in the discussions.

**...AND CONVEX LAUNCHES BABY 200 MFLOPS
C3400 SUPERCOMPUTER FOR \$300,000**

Convex Computer Corp, based in Richardson, Texas, has unveiled a new entry-level system in its departmental C3400 range of air-cooled supercomputers for the scientific and technical market. The C3400-ES single-rack system, which can be configured with one or two processors, up to 512Mb memory and 4Gb virtual memory, contains both custom BiCMOS and gallium arsenide circuitry, offering a peak performance of up to 200 MFLOPS. It uses 220V single-phase power and takes up 40% of the floor space of a standard C3400 machine. The entry-level multi-processor costs from \$300,000 and is available now. It comes bundled or unbundled, the bundled package including disk and tape subsystems, network connections, system and compiler software. However, the negotiations between DEC and Cray - see above - are already hurting Convex shares which fell 11.1% that week: analysts believe that the deal will "negatively impact" Convex as the company derives a substantial majority of its revenue from sales to customers who are essentially DEC customers, and to the extent that DEC is marketing Cray's line, customers may start to demand the Cray architecture.

**TEN X CONVERSION KITS FOR
OPTICAL ADD-ONS HIT THE UK**

Ten X Technology Inc, a 25-man spin-off from Texas Instruments based in Austin, has developed what is claimed to be the only hardware kits available to integrate optical drives into Power PCs and workstations running Unix. Ten X Optical Conversion Units (OCUs), which have now become available in the UK through a distribution deal with Magstore Ltd of Aldershot in Hampshire, obviate the need for additional file management software and specific device drivers, making the optical drive transparent to the host computer. New optical cartridges are formatted using the disk utilities on the host operating system. OCUs support WORM (write once read many), erasable and multi-functional optical drives, work with SCSI bus and QIC-122 compression standards to boost reading and writing speed, and supports secure write cache buffering. QIC-122 compression allows up to 4.5 Gigabytes to be stored on a 940Mb drive. Compression (1.5Mb per second) and decompression (5Mb per second) is handled by a dedicated NEC V50 processor. Prices in the UK range from £810 to £1,500. Magstore, which sells the OCUs as part of a package including the drive, says it has already sold 50 units on around 10 hosts, including Sun, SEC, Data General, HP and Silicon Graphics Unix boxes.

INTEL'S PARAGON XP/S DELIVERS UP TO 300 GFLOPS

Intel Corp last year unveiled in the US its second generation supercomputer, the Paragon XP/S, based on the Intel 80860XP RISC and scalable from 66 to 4,000 processor nodes, delivering between 5 GFLOPS and 300 GFLOPS. The new multiple-instruction- multiple-data massively parallel machine, which is compatible with Intel's existing iPSC/860 parallel machine but which embodies the architecture Intel plans to use in future machines capable of TeraFLOPS performance, will cost from \$2m to \$55m, to ship in the first half 1992. The scalable Unix running on the Paragon XP/S is based on a Mach microkernel combined with Open Software Foundation OSF/1 server technology. Aimed at technical applications, Paragon uses technology from the Intel/DARPA Touchstone Research Programme. Each processing node consists of several computer chips including two 80860XP microprocessors. Intel's older line of supercomputers offers up to 128 processors, delivering 7.6 GLOPS. The new machine, which aggressively challenges the likes of Cray - which doesn't expect to have a 200 GFLOPS machine out until 1997, doesn't require a front-end or system manager, thus eliminating the possibility of an input- output bottleneck. Orders have flooded in from Boeing, Seattle and Grant Tensor Geophysical, Houston, Texas, Merrill Lynch, and the Research Centre Julich (KFA) in Germany. And both Argonne National Laboratory, Chicago, and the Oak Ridge National Laboratory, Oak Ridge, Tennessee plan to serve as beta sites.

RAPTOR SECURITY SYSTEM SAFEGUARDS LOCAL AREA NETWORKS

Delaware start-up Raptor Systems claims to have developed a security system similar to ones in place only at the US National Security Agency and AT&T. Furthermore, it says, its device would have prevented those Dutch teenagers from hacking their way into the Pentagon's computers and copying sensitive information during the Gulf crisis. Raptor describes its product, Eagle, as a sophisticated "active security" firewall on a local area network. It denies access to all unauthorised computers. According to president John Shepard, Eagle sits at the critical choke point between the LAN backbone and the outside world and is transparent to the user's authentication scheme. Eagle includes proprietary software and two Sun boxes connected by a proprietary serial link. One machine acts as a gatekeeper to the LAN, the other an authorisation database. The latter is accessible only to the systems administrator. Activity monitoring is constant and Eagle sends out audio and visual alarms when unauthorised action is attempted. It also provides an "unusual activity" report, time-authorized access and trace-routing after three failed attempts at entry. Sessions are killed if an authorised machine attempts an unauthorised privilege. Eagle was originally designed for Internet, where connections are growing at 20% a month, supporting IP packets. It also supports TCP/IP, X.25 and SNA packets from public and private networks. The LANs it protects are of course heterogeneous. Eagle is also being ported to IBM's RS/6000 machines as an alternative to Sun's and an intranet security system dubbed Eaglet is expected in January. Eagle will cost \$75,000 per LAN.

DEC HAS TUXEDO-BASED TP SYSTEM

DEC is understood to be preparing to unveil a transaction processing system for Unix based upon an Ultrix version of its ACMS on-line TP environment which currently runs on VMS. The Unix TP package will also include Unix System Labs' Tuxedo transaction monitor, for which DEC has a licence, though it hasn't gone public with that yet, and Ultrix/SQL, a data manager based upon the Ingres database. Although OSF stalwart DEC is talking with Transarc Corp about its Encina TP monitor - which has been adopted by OSF - Tuxedo is out there now, and has been endorsed by a most of the Unix players, including DEC's OSF bedfellow, Hewlett-Packard.

DESKSTATION OFFERS OEM SERVICE FOR ACE HOPEFULS

Little two-year-old Deskstation Technology Inc is positioning itself to OEM ACE/MIPS boxes to other ACE companies, a strategy it shares with Acer and Olivetti, both of whom figure only a few vendors will actually mass-produce ACE boxes (UX No 357). However, unlike Acer and Olivetti, both of whom have started with R4000 prototypes, Deskstation is beginning like DEC with the R3000, R4000s not only being scarce but expensive to breadboard. Deskstation president Don Peterson says people are under the delusion that they'll be able to trot out a \$5,000 R4000 machine, not realising the motherboard alone would cost \$2,000. Deskstation has developed a prototype of a box its calling the IceStation 3000, the first of its kind outside of DEC's own which are supposed to be announced next week (UX No 357, 360). IceStation is built around a 25MHz IDT R3000 module reportedly delivering 20 MIPS. IceStation is being built to compete against high-end PCs, so its insiders very much resemble them including an ISA bus. Deskstation has however included a private bus for SCSI and Ethernet, and an Intel i960 processor for intelligent I/O, effectively making the machine an asymmetric multi-processor, Peterson says.

Software problems

Peterson's problem getting the machine out the door isn't hardware but software. He doesn't have an operating system to run on the thing. SCO's ODT is delayed. The reputed cost of an SVR4 license is daunting. DEC has offered all sorts of help except an answer to his plea for a copy of Ultrix which they of course were running on their 3000 prototype at Comdex. Microsoft's NT, on the other hand, appears to be on schedule, but it's still vapourware. Deskstation has Microsoft's Hardware Abstraction Layer (HAL) specification under non-disclosure along with the promise of an OEM adaption kit to allow porting NT from the 4000 to the 3000 in January, with developer kit deliveries likely to start in March. But that still isn't going to get the Deskstation to UniForum with a demonstratable box in the third week of January. So Deskstation will port a Mach kernel to IceStation to tide it over. The Kansas-based company expects to OEM these boxes to firms like Tandem, Zenith, Everex, ALR, Nixdorf, even Olivetti if it needs an R3000-based machine from a pricing point of view. It should cost no more to build than a 33MHz 486DX even with ACE features like accelerated video. Depending on how MIPS' own newly announced instant ARC kits go (UX No 359, 360), Deskstation may try to position itself as a competitor. Having experience with the 29000, i960 and the 3000 RISC chips in the short space of its history, it will at least offer itself as a design house to ACE OEMs looking for a set of plans. Such business could get it through the sales drought expected at least until the second quarter of next year. Volumes out the door in '92 are forecast in the high hundreds, with 1992 "anybody's guess." Deskstation currently has a \$8,000 price tag on IceStation, but that's expected to drop. A 33MHz version could be made. Deskstation says it has overcome the bandwidth limitations of the ISA bus by allowing 32-bit data transfers directly with the system CPU.

NEW TOP END C90 CRAY OFFERS 16 GFLOPS, COSTS \$30m

Cray Research Inc yesterday duly launched its Y-MP C90 supercomputer. The general-purpose scientific parallel/vector machine has 16 processors, and operates at four times the speed of Cray's fastest existing machine, the 2.67 GFLOPS Y-MP 8. Whereas the Y-MP 8 uses Motorola Inc ECL 2,500-gate arrays, the C90 uses Motorola's ECL 10,000-gate arrays. And on each of the new memory boards, half the space is taken up with memory access logic. The "all-new" CPU delivers 1 GFLOPS peak; with its 16 processors and 256Gb central memory the system's theoretical peak performance is 16 GFLOPS, 10 GFLOPS sustained. The new machine uses a balanced parallel, vector-scalar architecture, featuring a dual-vector pipeline which enables each CPU to deliver two vector results per functional unit every clock period; with its 64-way parallelism and multi-processing capabilities, the C90 can deliver a total 64 vector results per clock period. The C90 is available now for customer shipment in January, priced around \$30m. Cray claims to have received six orders and one letter of intent for the new machine.

DATA GENERAL EXPLAINS WHERE IT'S GOING AS A NEW START-UP

by Sue Norris

Data General Corp is trying to pass itself off as a new start-up company. That's how much the company has changed over the last three years. Gone are the days when DG might have been considered "almost a mini Bell Labs" (in the words of Steve Baxter, vice president of corporate marketing in the US), when the company's diverse research and development projects extended from office management software through to visualised phone switch technology. President and chief executive Ron Skates refers to those times as a period of adolescence for the company; when the ex-Price Waterhouse accountant joined DG in 1989, the company, in his words, was going in six different directions and "didn't know what it wanted to be when it grew up".

It was Skates who initiated that shake-up and it is Skates who has turned the company around and saved its neck, achieving \$86m profits in 1991, against a \$140m loss in the previous year, on sales up slightly at \$1,229m. Over the last three years, Skates has reduced DG's cost structure considerably - in the late 80's, the company had 11 plants, over 17,700 employees and needed \$350m per quarter in revenue just to break even (which DG wasn't); now the company has just five manufacturing facilities, a total headcount of 8,300 and a breakeven level of \$270m per quarter. The focus of the \$265m restructuring program me, too, was to concentrate DG on what it is good at - making good boxes from good silicon. Some have wondered whether an accountant could have the know-how to make strategic decisions about a computer business, and indeed eyebrows were raised when the Westboro, Massachusetts-based company let go its object-oriented office software division, HyperDesk, in a management buy-out last year - everyone knows it's the software and services that shifts one vendor's boxes over another's.

Not adequate

On that point, Peter Gyenes, vice president for international operations, said that if DG had retained HyperDesk in house, a product wouldn't have emerged for a good two years, which the company felt just "wasn't adequate". He noted that HyperDesk was allowed to spin off on the proviso that Data General would have the non-exclusive right to use the object-oriented office product. Where it has been speculated that DG has been shaken out and tidied up purely for the purpose of takeover, Skates echoed Gyenes' assurances that that was not the case, and that DG had wanted to increase its value for the benefit of shareholders and customers, and not in order to be attractive to potential buyers. Since Skates has 500,000 shares in DG, worth between \$2.00 and \$5.00 each, it's in his interest to keep the company on the straight and narrow. As to one further factor that might have sparked rumours that DG was on the market - namely that the company hasn't been making high-level alliances like its competitors - Gyenes skirted around the issue and cited its 20-year strategic relationship with Motorola, and marketing partnerships with Oracle, Ingres and Sybase, as evidence that DG is making the effort. The best he could offer was that those relationships would become deeper over time. "Our expertise is in the hardware," Gyenes explained - "and we add value by improving the hardware." Skates added that there were no foreseeable alliances in the pipeline, but said nevertheless that DG would be keeping its eyes open and might think again if the right opportunity presented itself. Another issue on which some Data General watchers have been pondering is the company's loyalty to Motorola. With the development of the Power PC, some have questioned Motorola's commitment to the 88000 RISC, which is the underlying component of DG's AViiON line of Unix machines. Skates' attitude, however, is positive and confident. "We couldn't be happier with Motorola", he enthused, saying that he thought the development of the Power PC chip, which uses the same fabrication process as the 88000, would actually benefit the 88000 in terms of building its credibility. The ACE consortium, he said, has some serious problems; "with the recently-announced DEC-Microsoft alliance," he forewarned, "trouble's coming" - see front page.

Besides, Skates remarked, Motorola spends more on scrap than MIPS Computer Systems spends on its RISC development. He admits that DG has been nervous about the recent images portrayed about the future of the 88000, but he concludes, and confidently, that Motorola's technology will win out. "I wouldn't have said that three years ago," he said, "and in two years from now, who knows?". But for the moment he's happy, and is adamant that he's not talking to the other RISC developers, though he does admit to having been approached. Vice president of AViiON development Allan Jennings, perhaps more qualified to address the question, noted that no other RISC has built-in symmetric multiprocessing. Does that mean AViiON and its DG/UX 5.4 Unix operating system will suffer if the future of the 88000 RISC does begin to look uncertain? DG says not, claiming that DG/UX is not dependent on the Motorola device. On the proprietary MV Eclipse machine, running DG's AOS operating system, which boasts 42,000 installations worldwide and still accounts for 65% of the company's hardware revenues, Data General's motto is still "MVs are forever". More realistically, "MV will continue as long as there is a demand" - according to DG, that demand still exists; MV installations increased to 42,000 from 40,000 over the last year. More than 1,000 applications are up on the system and some 500,000 Eclipse customers use the system to run DG's CEO office automation software. Target markets for the Eclipse are federal government, healthcare and manufacturing. And, in Europe, air traffic control is an important sector. Last year, DG established a dedicated MV division, the Eclipse Business Unit, which is aiming for an annual system price/performance improvement of 30%, and a two to three year product cycle. According to Steve Baxter, the research and development split between MV and AViiON systems is 50:50, and "MV is a fundamentally long-term part of DG's strategy". The benefits of MV, as described by Gerry Paul, vice president for Eclipse development, are its interoperability with other hardware, its inherent commercial design and DG's continued investment in its adaption.

Future of MV

MV development is being focused on a high-end ECL gate array-based system, Hitachi Washi CMOS technology for the low-end and mid-range systems; a new client-server version of the AOS operating system with kernel-based communications transports and a re-designed file system; and a new releases of CEO, which this year celebrates its 10th birthday. Next year, a high-end MV machine will be launched, featuring single-board mainframe-class CPU, high-capacity system bus, one to four processors, one to six input-output channels, and operating system and database software scaled to mainframe levels. One move which demonstrates how serious DG is about continually evolving the Eclipse machine, is the decision to introduce RAID 5 (redundant array of disks) technology to the MV line. As to the AViiON Unix boxes, which have incorporated RAID 5 technology for the last five months, sales are predominantly and strategically server-based commercial sales. Skates' reasoning is that "the margins and value-add of computers for the next five years will be servers". DG's reasons for focusing so vehemently on the commercial Unix market are that the commercial sector is "the most level playing field", with no one company particularly dominant, so that "any manufacturer with value-add can win". Skates promises a 300 MIPS AViiON machine next year. "AViiON is as competitive as anybody", he says, citing RAID as key to DG's strategy. "We have the products, the technology and the financial strength now", he concludes, speaking of DG's future prospects. But he's not daft; Skates concedes that times may be hard for a while to come.

USL AND CHORUS PROPOSE ESPRIT PROJECT

Unix System Labs has made that expected million dollar investment in French microkernel house Chorus systemes (UX No 359). The companies, who intend evolving SVR4 and Chorus Mix in tandem, say their relationship isn't closer - like USL simply adopting Mix - because the industry needs time to digest what it's already bitten off, recouping investment in SVR4 before moving on to a microkernel. In the meantime, the pair are proposing a project to Esprit III that would effectively lump together various other separate Esprit projects Chorus has in hand, make Mix Esprit's de facto distributed operating system and help Chorus decide whether Mix needs more object-orientation. Mix, which with its suitability for fault tolerance, massively parallel and real-time systems is usually associated with the high end, should also impact USL's desktop endeavors.

INTERGRAPH'S OSF/1-DCE BUNDLE FOR CLIPPER RISCs DUE LATE 1992

Intergraph Corp, Huntsville, Alabama, says an implementation of the OSF/1 operating system will figure on its range of Clipper RISC workstations and servers from the end 1992, and not next March, when the firm is due to unveil new 33 MIPS, 9 MFLOPS-rated desktops based upon its latest C400 Clipper (UX No 360). It doesn't expect to get a stable 1.1 release of OSF/1 from the Foundation until March at the earliest. Along with OSF/1, Intergraph will also have an implementation of OSF's Distributed Computing Environment on its boxes by that time. Intergraph currently uses a BSD-based implementation of Unix, and is working to port its application base across to the Mach-derived OSF/1. Existing customers will get OSF/1 as a normal software upgrade, says Nick Simpson, acting European product marketing manager in Swindon, Wiltshire, who will return to the system product marketing group in Huntsville, once a permanent appointment has been made. Intergraph will not port OSF/1 to the Sun Microsystems Inc Sparc workstations which its Dazix software subsidiary markets. However the popular MicroStation mechanical design package, which comes from Exton, Pennsylvania-based Bentley Systems Inc, a firm half-owned by Intergraph, will be available for Sparcstations from January 14th, priced at \$3,450. The low-key announcement is reported to reflect the internal marketing problem that Intergraph now has in trying to keep its proprietary Clipper customers happy enough with the higher priced - \$20,000 - but more functional, I/EMS mechanical design package, and precluding a stampede to Sparc/MicroStation solutions. A high-end version 2.0 of I/EMS for Sparc has also been announced (UX No 360), but the firm expects less than 50% of I/EMS 2.0 sales to be on Sparc. MicroStation, which has been described as a low-end competitor to AutoDesk, doesn't include all of I/EMS' functionality, but Electronic News reports that Bentley has acquired the Cedar constraint modelling technology from MCAE Technologies which it will include in future versions of MicroStation to make up some of the difference.

AGE LAUNCHES NEW X SERVER, SETS UP RESELLER PROGRAMME

X software house AGE, San Diego, California, will shift gears and take out after the commercial marketplace starting next month with the debut of a new Windows X server and the formal release of an enhanced version of PC Xsight, the DOS X server it acquired from Locus last September (UX No 352) and subsequently renamed Xoftware for DOS. To get its goods to market, AGE is setting up a two-prong Xoft-Sell reseller programme including a track for authorised resellers involving no volume and a minimum 35% discount, and one for certified resellers who make commitments and get at least 40 points and co-op funds. The new XoftWare for Windows 3.0/3.1 and the enhanced XoftWare for DOS will allow AGE to catch up with its competitors.

DEMONSTRATION MAKER AND PLAYER

FROM NON STANDARD LOGICS

Non Standard Logics, the Paris-based user interface specialist, has come up with software for X developers to use and create demos of their programs. Called XDemoMaker and XDemoPlayer, the two-program set uses Motif, but the demos produced are independent of the GUI and run under any X-terminal interface used with the application. XDemoMaker, which costs \$6,000 in single units, includes editing and text-writing facilities. XDemoPlayer is licensed to XDemoMaker buyers along with unlimited copying rights for \$4,000 for the first platform, less for additional ones. Workstations currently supported include IBM, DEC, Sun and HP.

MYLEX HAS 80486 MP SYSTEM

Fremont, California-based design house Mylex Corp has unveiled six new high-performance products using the EISA bus. The 50MHz 80486-based Mylex Symmetric Multiprocessing System implements the company's proprietary 64-bit bus, using four 80486 processors with 256Kb write-back cache on each. It is being offered with Mylex's Multi-Channel SCSI Disk Array Controller and Multi-Channel Ethernet Adaptor based on the EISA bus. The multi-channel disk array system features five wide SCSI-II channels, an Intel Corp 80960CA embedded RISC Processor, up to 64Mb cache, support for RAID Redundant Array of Inexpensive Disks and fault-tolerance. The new LME596 EISA four-port Ethernet adaptor is a 10Base-T adaptor incorporating four 32-Bit Intel Ethernet Controllers with a shared memory port and an Intel 82355 Bus-Master controller. Software dynamically picks the method of bus transfer for optimum performance based on Ethernet packet contents. Multiple local network adaptor support exists for server environments including NetWare, Unix TCP/IP and LAN Manager NDIS for MS-DOS and OS/2. The new 40MHz Advanced Graphic Controller 34020, GXE020 version A features a Texas Instruments Inc TMS34020 processor and 1,600 by 1,200 resolution, and was demonstrated at Comdex running Windows 3.0 and Santa Cruz Operation Open Desktop. The EISA-based graphics subsystem's optional drivers include display-list AutoCAD, P-CAD and X-Windows based on Santa Cruz and Interactive Systems Corp Unix. The GXE020A includes 4Mb main memory, 2.5Mb Video RAM, and a four-foot Rgb cable. The new GLI911 Graphics Controller, designed for demanding graphical user interface environments, accelerates applications under Windows, OS/2 Presentation Manager, GEM/3 and the X-Window System. Mylex has also unveiled a non-caching host adaptor on the market, which it says features a wide SCSI-II channel, Intel 80960KA RISC Processor, can be up graded to a caching host adaptor and is ASPI-compatible. No prices were given for anything.

IBM IS POISED TO CUT A FURTHER 20,000 JOBS

Next month IBM is expected to announce that a further 20,000 jobs will go on top of the 20,000 it has already cut. This will bring IBM's total number of employees down to around 330,000 worldwide at the end of 1992, from about 373,000 at the start of this year and from 407,000 at IBM's peak in 1988. As yet, nobody seems sure how IBM will make those job cuts as it has a tradition of no layoffs and has always said that layoffs would be a real last resort measure. Most onlookers reckon that IBM will continue with voluntary programmes encouraging employees into accepting early retirement or buy-out packages. Nevertheless, as time has gone on these voluntary packages have been getting less generous offering more stick and less carrot. Another ploy it may use is to increase its standards for employee performance - a move expected to lead to a much higher rate of firings. That IBM is considering a further blood-letting seems to indicate that the company expects its position to remain difficult even though it is at the beginning of a new mainframe product cycle.

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PIZZA HUT ASKS IBM FOR V.4

OSF-backer IBM is again offering Unix System V.4 on its PS/2 systems in response to customer demand - this time in response to an \$118m order from the Pizza Hut chain of restaurants in the US. IBM's previous foray into V.4 was forced onto them by the K-Mart supermarket chain (UX No 336), an ultimately unsuccessful bid. This time the company is thought to have gone to the same software house - tiny UHC of Texas - to put V.4 on some 7,000 PS/2 Model 57 and 90s in the US for point of sale, delivery management and administration tasks. Pizza Hut is currently an IBM mainframe user. In the UK, where Pizza Hut is a joint venture between Pepsi and Whitbread, the company uses an ICL mainframe, but is downsizing to IBM mid-range AS/400s and RS/6000s, communicating with IBM point of sale equipment currently on pilot tests.

...AS MERCURY CHOOSES HP OVER IBM AND DEC

In the UK, Mercury Personal Communications has chosen Hewlett-Packard kit to implement its open systems computing needs, despite reported pressure from its parent company Cable and Wireless, which usually opts for DEC and IBM equipment. In a "multi-million" deal, Mercury is taking two Unix-based HP9000 Series 800 servers supporting Series 700 workstations as clients to run its planned mobile communications network. HP is providing its SwitchOver/UX system to provide backup in the event of a hardware or software failure. Software for billing and administration is sourced from Sima, using relational database technology from Sybase.

Reports say deliveries of Hewlett-Packard's high-end 9000 series 730 and 750 Snake workstations are still being delayed by up to 12 weeks because of a shortfall of 66MHz floating-point units from Texas Instruments (UX No 352): the part, tightly-coupled with HP's PA RISC CPU, is vital to achieving the overall performance target of the boxes, however HP has begun receiving enough 50MHz versions of the part to give the model 720 a more normal four week lead-time, and the 66MHz FPUs are expected to be shipping in quantity by the end of the year.

Talking about the technology in Cray's new C90 supercomputer, Dataquest analyst Chris Willard reckons "you can think of the Cray as a shark and a massively parallel supercomputer as a school of piranhas": referring to the system's 16 CPUs, he went on to ask, "is it better to be assaulted by 16 great white sharks or 1,000 piranhas?"

In a meeting with press and analysts in New York Bill Gates reportedly said that he wanted to "present an olive branch" to IBM. Gates appears to be backtracking on his dismissive attitude towards OS/2 2.0 and now concedes that it will become a "fixture in computing for years to come". He seemed unhappy with Microsoft's campaign for Windows in placing Windows and OS/2 as an either/or option. For example, a few weeks ago Microsoft withdrew its support for the OS/2 2.0 developer's kit offering Windows 3.1 and NT developer kits in its place or a \$750 refund. IBM recently countered by offering to trade the discontinued kit for an IBM tool kit composed of OS/2 2.0 beta code and a host of tools and documentation. Customers see such unseemly squabbling as disastrous for the PC industry - has Gates bitten off far more than he can now chew?

All's very definitely well that ends well for Digital Equipment Corp in Eastern Europe, where, the Wall Street Journal reports, the company has a big head start in marketing VAXes because so many were illegally diverted there during the Cold War, and so many more clones were built locally: no-one has any ambition to build anything much bigger than a personal computer in the former Comecon countries these days unless it is done in a joint venture with the originator, but in a sidelight that reveals an unexpected seam of wry humour in a company usually regarded as embodying dour New England Puritanism, the Journal records that the Maynard used to inscribe the microprocessor chips at the heart of the VAX with the legend - in Cyrillic script - "VAX - for those that care enough to steal the very best".

Silicon Graphics Inc has done a deal with Siemens Nixdorf Informationssysteme AG under which Siemens will have unrestricted, nonexclusive marketing rights to Silicon's products: Siemens is particularly keen to market Silicon's line of Iris 4D Unix-based systems; the deal comes into effect now.

Oracle UK has won a £3.5m contract to supply NCR Europe with Oracle Financials for installation in 14 European countries over the next two years: the package will run on the NCR System 3000 with Unix.

Data General claims claims 4.2% of the \$8,000m RISC multi-user market for its AViON boxes, behind Hewlett-Packard, DEC and Sun, and running parallel with Pyramid.

The Open Software Foundation is giving up its seat on X/Open's board hoping to trade it in for a less costly place on X/Open's ISV Council (UX No 356): the only problem is such a switch is distinctly forbidden by X/Open by-laws. The X/Open board, which meets again in January, would have to vote to change the rules if OSF is to be accommodated. "It's a constitutional problem that we're trying to resolve," X/Open said last week, "we'd be unhappy if there wasn't a means for OSF to have a relationship with us - we don't want to burn any bridges."

SunSoft and Interactive have blown it, missing the date they expected their merger to be complete: originally set for November 18, it's now been put back to around December 2: part of the problem has been deciding which deals belong to which side of Interactive, the Kodak bit or the Sun bit.

DEC's Intel Corp 80486-based ApplicationDEC 433MP multi-processing Ultrix systems will play a central role in the new Philips Information Systems/Mannesmann Kienzle combine, Digital Equipment Enterprise, which also includes DEC's small and medium enterprise channel of resellers (UX No 360): the UK arm, DEC SME UK, is headed-up by Peter Herke.

The User Alliance's Power Panel in Washington last week might have been short on substance, but the high ranking executives from NCR, HP, SCO, DEC, Apple and IBM at least managed to score a couple of quips. When a member of the audience noted that in all their speechifying the word "object" had never been mentioned, Apple VP Roger Heinen advised him to look in the passenger-side mirror the next time he gets in the car: "Objects are closer than they appear." When another user begged that OSF and UI merge, HP VP Lew Platt groaned that he had tried getting them together two years ago and he was still resting from the experience.

IBM and Apple have produced a 300 page document entitled "The IBM-Apple Enterprise Guide for Networking SNA Products", which describes how Apple Macintoshes can participate as first class clients within an IBM SNA and Token Ring networks: support for APPC and APPN, as well as Apple's Data Access Language on the AS/400 are covered.

The seventh TOOLS conference and exhibition - Technology of Object-Oriented Systems - moves to Dortmund, Germany next year, and runs from March 30 to April 2.

Verity Inc's Topic text-retrieval system is to become part of Hewlett-Packard's New Wave office solutions package that runs on its HP-UX Unix systems.

SCO says it has released version 1.1 of its ACE-compliant Open Desktop platform: it's an alpha edition, beta copies are unlikely to be around before next spring at the earliest.

The Sema Group is to distribute Object Design Inc's object-oriented Object-Store database in the UK and Eire: available from Sema's Chippenham-based Software Technology group, it costs £4,000.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson. Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, December 2-6 1991

Number 362

DEC DETAILS NEXT 25 YEARS - ALPHA FROM LAPTOP TO SUPER

On a crisp clear day in New England last week, Digital Equipment Corporation began detailing for public consumption its plans for world domination. DEC expects Alpha to buy it the number one slot in Unix performance. But Alpha is also VAX's eventual successor, obviously making it of overweening importance to the company's future. That future starts sometime next year, probably the summer, when the first three Alpha boxes appear, paving the way for successive generations of 64-bit machines that DEC contemplates will take twenty-four months to launch. DEC considers Alpha's architecture will take it through the next twenty-five years, scalable to all species of machine form the palmtop to supercomputer. The scale of the project must put the depth of DEC's commitment to the MIPS architecture into some question, despite ACE and the new machines (see below). Commenting, MIPS' John Mashey said he expected the Alpha chip to be "fast, but expensive" for the first few years. Details, page 2.

DEC'S 19 PRODUCT RISC BLITZ INCLUDES \$4,000 PERSONAL, TOP-END WORKSTATION AND THREE SERVERS

DEC's expected raft of new MIPS R3000-based systems are to be unveiled this Tuesday, and along with two versions of the already flagged Maxine personal workstation (UX No 357), DEC is rolling out a new top-end workstation, three new servers, and various graphics boards, peripherals, software support programs and applications. The products, to be shown at a Bay Area customer event on the day, all feature a modular design, allowing customers to upgrade performance with faster CPU daughterboards, including the MIPS R4000 when it becomes available - probably not until the Summer. The two Personal DECstations will be described as "the most complete entry-level workstations in the industry": they are the 5000 Model 20 and 25, rated at 16.3 and 19.1 SPECmarks respectively. Both have graphics and upgradability options, and will cost just under \$4,000 (£3,000 in the UK) for the 20, \$5,000 for the 25 in the US, for January delivery. The existing 5000 Model 100 gets an upgrade option to the 33MHz R3000, and R4000 upgrades will also be possible with the older machine. The top-end machine, the 5000/240, is DEC's most powerful workstation to date, using the MIPS R3000A. For \$12,000, it offers graphics performance five times faster than DEC's previous best, and boosted I/O, integer, floating point and networking performance: available immediately. The three servers are the DECsystem 5000/25, 5000/240, and 5900 models, the first two desktops for \$5,000 and \$13,500, the last a database server supporting up to 35Gb storage, costing \$59,000. All are ACE compatible, said DEC. Microsoft's NT will again be demonstrated, and DEC said it would run NT across the range, as well as the OSF-based Open Desktop environment. Other products - see page 3.

KAHN GETS READY TO TAKE ON UNIX DATABASE WORLD

Now that Borland has swallowed Ashton-Tate, SQL database vendors would be well advised to know that Borland has them in its sight. In a speech made recently Philippe Kahn, chairman, president, and CEO of Borland, indicated that the company's strategy in the wake of the Ashton-Tate acquisition is Windows on the front end, an object layer in the middle, and Interbase on the back end. Interbase, which had been a wholly owned subsidiary of Ashton-Tate was the main reason Borland acquired the company. While Kahn said that Borland also coveted Ashton-Tate's strong international presence, the fact is that about 800 employees of Ashton-Tate are now out of work, whereas Interbase staff have been made to feel very welcome and have even been promised their own campus-style facility. The point is that Interbase had attributes Borland wanted: a strong Unix presence, a healthy business with the federal government, and the ability to manage complex processing problems on-line. Kahn also says that Interbase's support for Binary Large Objects, or BLOBs, lets you stuff just about anything that you can digitize into a database field. In the multimedia age this gives it an advantage over databases designed to handle alphanumeric data.

SUN, HP WORK ON COMMON OBJECT DATABASE ACCESS

As part of their joint efforts to evolve object-oriented technology, Sun Microsystems and Hewlett-Packard are working with a bevy of object-database companies so that software developers will be able to write programs that will work with any object database. The database companies concerned are Ontos, Versant, Object Design and Objectivity, and the work will result in the development of a common applications programming interface known as an object database adaptor. The group, formed because of a lack of interest from the standards bodies, has met four times so far, and plans to offer its completed work to the Object Management Group. The object database adaptor sits between the database and the object request broker, and when it receives a request for an object, invokes the corresponding database. Sun is not working on its own database, according to Sun distinguished engineer Rich Cattell, but believes in using "the best tool for the job", ranging presumably from HP's hybrid relational/object approach (with OpenODB and OSQL - UX No 357) to the purer object databases of its other development partners. Sun is, however, preparing Persistence, a so-called "poor-man's object database", with 10% of the usually found facilities, as a bundled in default mechanism for storing objects that come packaged with the Object Request Broker: it was part of HP/Sun's original proposal to the OMG.

IBM REVEALS ROADMAP FOR THE RS/6000

The low-end IBM RS/6000s originally looked for in October may be late, but IBM appears to have learnt its lesson from the disaster of the RT workstation, and has lifted the veil on its plans for the RS/6000 range. Plans are to expand the range in both directions, with a Unix laptop on the cards for 1993, and at the top-end symmetrical multi-processors with up to 16 CPUs and high performance clustering via fibre-optic channel. A 64-bit RS/6000 will be ready by mid-decade, with clock speed boosts up to 60MHz next year, 100MHz in 1993. Full details, page four.

CRAY-LIKE ALPHA CHIP HAS THE LEAD OVER VIKING AND IBM'S POWER

Alpha co-architect Dick Sties, seconded to the project in the fall of 1988, described Alpha as most closely resembling a Cray 1, comparing Alpha's 150 instructions to Cray's 128. It uses a full 64-bit architecture, he said, with a flat non-segmented 64-bit address and 64-bit registers, integers and floats. It was built to handle multiple computer languages and multiple operating systems. It was also built to be either a single processor or a massively parallel system of 400 or 500 processors. Apparently they have the thing up and running at 200MHz with a 5-nanosecond clock cycle, a spec DEC president Ken Olsen quoted at the recent stockholders meeting. Not wanting to steal the boss's thunder, that's as much as the DEC engineers would say last week, leaving the distinct impression, however, that this was a minimal statistic. Sites claimed performance can scale by a factor of a thousand times, a modest boast, he said, "it could be 10,000 times." So far the company has produced some 50 Alpha machine and is currently using production quantity chips, its first proprietary RISC design based on CMOS superscalar technology. Alpha is a single-chip implementation and DEC's apparent success fabricating it seems to give it a heady lead over challengers such as the finicky Sun Viking and non-existent IBM PowerPC. The Alpha VMS port is going better than they expected. Originally forecast to be a year behind the hardware, it's now pretty much current with it. Ninety percent of the code is already over and running on production hardware, according to development manager Kathy Morse. Its eye on the installed VAX base, DEC hotly underscores the fact that Alpha's VMS is VMS, not rewritten in C or redesigned, just VMS V5.4 on an Alpha platform. Resources outside the company such as an Israeli firm staffed with Russian scientists and universities have been brought in for regression testing. As previously reported, VMS-on-Alpha is for DEC's higher end machines. Lower end high-performance Alphas will run a 64-bit version of OSF/1 which consolidates Ultrix, System V and OSF streams (UX No 361, 360). DEC's cost-conscious OSF/1-on-MIPS machines, announced this week, will be its entry level. Maureen O'Gara

DEC people said again last week that they are not going to try to elbow into the ACE Initiative packing Alpha and portable VMS as still another ACE alternative (UX No 355): They are however, apparently using the ACE members roster as a hit list of likely Alpha hardware/software licensees under a program that DEC, hungry for multiple Alpha vendors, will institute next year (UX No 359). Seems they're already talking to some.

DEC wants to put SCO's Open Desktop for ACE on its Alpha boxes but doesn't know yet whether it would be a layered product or part of the actual operating system. It also doesn't know yet exactly what ODT for ACE will be: The desktop manager issue for instance is still unresolved as the powers that by try to sort out a winner.

It became apparent last week why ACE is so important to DEC: It hopes the Initiative will attract a considerable ISV following. It will then move that software over to Alpha both in its OSF/1 and VMS species. He who has the most software wins.

Last year, as a feasibility study, DEC ported a 64-bit BSD to Alpha learning in the process, it said, that Unix migration wasn't that complex: That paved the way for the 64-bit version of OSF/1 they are currently moving over (UX No 361). Earlier this month they got as far as a user login on a real Alpha system.

Although VMS-on Alpha somehow started getting called "portable VMS" apparently it ain't: DEC last week said the microcode was not in a higher level language and therefore lacked the flexibility to slip easily on to another platform.

DEC has apparently filed some 20 hardware and software patents on Alpha.

Still no definitive word that NT will be ported to Alpha, only the conclusion of Alpha's newly appointed business manager Peter Graham that such a move would be "logical."

SOFTWARE HOUSE REDUCES NINE ACE PORTS TO ONE WITH ANDF-ALIKE DISTRIBUTION FORMAT

California compiler house Translation Systems is proposing to build an ACE Distribution Format (ADF) that it claims will allow ACE software to be completely shrinkwrapped. Translation argues that under ACE's currently proposed API/ABI scheme ISVs writing to ACE will be forced to port nine times to run on all ACE platforms: three CPU architectures (R3000, R4000 and Intel) and three operating systems (NT, SVR4 and Open Desktop). The technology, it says, which is conceptually similar to the Architecture Neutral Definition Format (ANDF) being built for the Open Software Foundation, would reduce the port to one. It says an application, compiled with a compiler front-end producing Translation's ADF, will run on any ACE-compliant platform. Translation says this reduces ISV porting and support costs, produces more reliable code and increases the immediately available market, attractions to ISVs who, Translation claims, are taking a very wait-and-see attitude to ACE. The company explained that once a program is reduced to ADF, it must undergo a translation to further reduce it to any executable image on the target system. This is accomplished via an installer program and has to be done only once. The installer program, comprised of a storage allocator, object-code generator and emitter, must exist on the target system and might therefore be included as a standard part of the operating system, either NT, Unix or ODT. Translation said there were no penalties to be paid respecting compile-time or execution time. However, the size of the distribution format will be somewhat larger. Translation is proposing to build nine installers and is offering ACE vendors a royalty-free distribution licence for \$90,000 if they sign up before the ACE meeting late in January. Translation has tried interesting companies such as Microsoft, Compaq and DEC in ADF and has faxed information to some 40 or 50 other ACE members since Comdex last month. None have yet to even nibble. Microsoft seemed particularly hostile to the notion, according to president Tom Linden. Even without their support, however, the company intends to pursue the venture and may then include an installer that will also work for Sparc. It said it should be able to demo the Intel version by March and the MIPS version by mid year.

WORKSTATION MARKET SHOWS QUARTER-ON-QUARTER DECLINE, SAYS DATAQUEST

Even the bustling workstation business is turning sour, with third quarter shipments from the top six vendors down by 7.9% on the figure for the second quarter, according to Dataquest's latest Workstation Quarterly Shipments report. Only Hewlett-Packard Co and Silicon Graphics Inc managed to buck the trend, the HP 9000 400 and 700 series and the low-cost Indigo system being the star performers. Sun Microsystems Inc continues to lead the market and IBM Corp, which has moved into third place (over Digital Equipment Corp, Silicon Graphics and Intergraph Inc), was among the companies seeing a quarter on quarter decline. Despite talk of being "on plan", it was noticeable on a trip to the manufacturing plant at Austin last month that IBM is currently making substantially fewer RS/6000s than it would like because of weakness in demand. The top shipping models in the third quarter of 1991 were the Sparcstation 2; HP 9000 model 425; Sparcstation IPC; Sparcstation IPX; and RS/6000. And, stressing yet again how vital IBM's delayed bottom-end machine is to the company's hopes in the market, Dataquest said that machines costing under \$15,000 accounted for over half of the market, taking the average selling price under \$18,000. Workstations now account for 80% of the market, says Dataquest, according to Dataquest, highlighting the problems those companies relying primarily on servers are having.

BURKHARDT HEADS PARALLEL STARTUP KENDALL SQUARE

Henry Burkhardt, one of the supergroup of industry stars that came together at Ken Fisher's instigation to form Encore Computer Corp, is back in business again, and hopes to be one of the pioneers of commercial applications of massively parallel processor technology. The Data General Corp alumnus has formed Kendall Square Research Inc in Waltham, Massachusetts to develop and market a multiple-instruction, multiple-data massively parallel machine with up to 1,000 processors, which is due to be unveiled before the end of the year. Electronic News hears that the machine will use a double ring topology to interconnect the processors, with up to 30 separate rings, each capable of supporting up to 34 processors, all the rings being tied together by a larger secondary ring. Each processor would have its own memory, but the concept of the concentric rings appears to be an elaboration of that of nodes consisting of clusters of processors.

HEWLETT-PACKARD HAS DEVELOPER KIT FOR MPE/iX POSIX

Hewlett-Packard Co has announced that the promised compliance of its proprietary MPE V operating system with the very low-level Posix interface standard will arrive next June, and has changed the HP 3000 operating system's name to MPE/iX. The first step is to offer a tool kit to enable software developers convert their Unix applications for the HP 3000. The MPE/iX Developer Kit costs \$10,000 to \$50,000 and is out now; it uses the HP 3000 and an HP Apollo 9000 Series 700 workstation for client-server development, including Posix 1003.1 and Network File System and a version for Sun Microsystems Inc stations is set for second half, 1992. Uniface Corp, Alameda also said that its eponymous applications development environment would be integrated with MPE/iX.

OSF SCALES DOWN GERMAN OFFICE, FAVOURS BRUSSELS, GRENOBLE

The Open Software Foundation is to cut back operations at its Munich office, in a bid "to optimise its resources", according to European Operations communications manager Mark Laureys. OSF's operational headquarters moved over to Brussels last April, but much of the Distributed Management Environment work had been centred around Munich: it will now be continued in the UK, and some staff will be relocated. OSF regional director Hans Josef Jeanrond is expected to continue working from a Munich base. Meanwhile in Brussels, OSF is planning to move into its own offices this January - it is currently being hosted by DEC - and will mark the move by expanding its training and educational operations. OSF says it has increased its investment in the Grenoble-based research Labs, where it is working with the European Commission on Esprit 3, on projects such as its ANDF architecture neutral distribution format. More details on this are expected soon.

GUIDEWARE USES OBJECTS TO SPEED GUI DEVELOPMENT TIME

Mountain View, California-based GuideWare Corp, founded just four months ago, has what it claims is "the first object-oriented graphical user interface development environment for multi-platform GUI applications". WinTRAN is said to simplify applications designed for Microsoft Windows and OSF/Motif, reducing development time. Applications manipulate named visual objects, such as text, lists, buttons, images and tables rather than Windows. The approach gets round the normal ties to a specific windowing model. "To manipulate one or more windows, most GUI development environments utilize or automatically generate thousands of lines of user interface code as dictated by the GUI supplier's windowing model library", says GuideWare co-founder and chief scientist Dr Sanil Mehta. The code then has to be merged with code implementing the application's algorithms, database management and flow control. WinTRAN applications avoid this, using standard languages such as C, C++ or Pascal that take less time to write, are more reliable and easier to maintain. WinTRAN includes an Application Builder and Application Server, a run-time module that loads the interface descriptions, paints the display and receives and interpretes messages from the GUI/OS and triggers execution of application code. A specific server is needed for each GUI platform supported. The initial version for Microsoft Windows, currently in beta testing, will cost \$495 with no runtime royalties: it works using Microsoft's Dynamic Link Library. An OSF/Motif version should be ready by the first quarter of next year.

FIVE TIMES GRAPHICS BOOST FOR DECSTATIONS

Other products at DEC's event this Tuesday (see front page) include HX, PXG+ and PXG Turbo+ graphics options for the full range of DECstations for 2D, 3D, 24-plane colour and multimedia. They use DEC's TURBOchannel I/O interconnect, operate at 72Hz on Sony Trinitron monitors and offer a 500% performance improvement over previous DEC graphics, according to the company. New Network Application Support (NAS) software improves connectivity for Macintosh and client/server users. Lotus' Realtime option for 1- 2-3, used in financial dealing rooms, is now available. A Turbochannel extender allows double or triple-width graphics cards to be used. The RZ58 SCSI 5.35-inch, 1.38Gb disk drive is available with the new hardware, costing \$6,300, as is the RX26 3.5-inch diskette drive for 720K, 144Mb and 2.88Mb diskettes, costing \$600. And emphasising its willingness to get involved in multi-vendor installations, DEC said it would now support products from Sun, HP/Apollo, MIPS and Wang.

EVERYTHING FROM A 16-WAY 64-BIT MP TO A COLOUR LAPTOP IS IN THE RS/6000 ROAD MAP

by Tim Palmer

In Texas, down in leafy Austin, IBM Corp has a detailed road map for the future of the RS/6000 Unix processor, and with all the talk of late being of super-low-end machines, the company is at pains to remind people that the road map does not lay out a one-way street, it extends in both directions. Those that follow these things closely will be aware that early 1992 will see not only the launch of new low-end RS/6000s, but new high-end models as well - and those machines are just the beginning. The RT fiasco was a big setback in IBM's campaign to be recognised as a leading edge Unix systems vendor, but it did give the company one clear advantage: the Rios processor was designed so late in the day that it is still free of the baggage that is already beginning to weigh down MIPS Computer Systems Inc's R-series RISC and Sun's Sparc.

Spanish moss

So that while the first reaction to Phil Hester, vice-president, systems and technology in the Advanced Workstations Division, saying that Sparc and R-series will not be able to keep up at the top end is the kneejerk "He would say that, wouldn't he", the claim is probably justified. And just as the 80586 will be trammelled with 80386 and even 8086 baggage, Hester admits that by the end of the decade, the Rios processor too will begin to be festooned with as much Spanish moss as the trees in the Texas swamps; in the meantime there is a decade of welcome freedom for IBM's chip designers. Hester declares that the only mission of his division is to make IBM successful in the Unix business - that means being one or two in the market by 1993 or 1994 - with no power of price constraints. That implies that if the market demands an RS/6000 that outperforms a Summit in many applications, then such a machine will be offered: sounds fine for now, but we'll see when the time comes.

IBM is constantly surprised at the extent of commercial market demand for Unix, and so the RS/6000 business is already split 50-50 between technical and commercial, and it is becoming clear that, just as with the minicomputer business in the mid-1970s, the commercial end of the market is embarking on a much steeper growth curve than the technical. And from IBM, we can expect to see some RS/6000 models optimised for floating point performance - as the machine essentially is now, and others optimised for transaction processing. And optimisation may extend to adding different instructions to the set according to the intended use. Talk of extending the instruction set will upset purists that say that with 184 or so instructions, the Rios can scarcely be called a RISC anyway, but as the inventor and holder of all the early patents on RISC, IBM begs leave to define the term as it chooses, so in IBM parlance, RISC stands for Reduced Instruction Set Cycles, and the design aim is to optimise the machine to execute as many instructions as possible. Just as a few 16-bit minicomputer designers realised that 32-bit would be needed one day and designed their machines so that the bus and register size could be doubled when the time came, as Honeywell Inc did with DPS 6, while others had to start virtually from scratch with the VAX or the MV/8000, so IBM has designed the Rios with 64-bit in mind, so that there will be a 64-bit RS/6000 for mid-decade.

The machine currently spans the \$15,000 to \$150,000 price range, but will extend - equally fast - in both directions, so we can look forward, says Hester, to a future high-end machine costing \$1m or so, which will offer symmetric multiprocessing on 64-bit CPUs for the commercial market, and will be able to be clustered for the scientific world. How far will multiprocessing go? We're not talking massive parallelism with the RS/6000: the answer is from four-way to 16-way, after which clustering will be required for even bigger configurations - and a fibre optic channel standard is in development at one or two of the US national laboratories to enable clusters to operate at extremely high speeds - 100Mbytes per second or more; Lawrence Livermore National Laboratory is already using a 25.25Mbyte-per-second link between its RS/6000s.

So what is on the cards in the performance stakes? Raw processor performance, says Hester, can double every 12 to 16 months, so by 1993, a five-to-eightfold increase is realistic. At present, the machine is a uniprocessor with one integer and one floating point unit delivering two operations per cycle and one branch per cycle - 100 to 150 million operations per second, 72 SPECmarks, 50 or more transactions per second. Performance can be improved not only by winding up the clock - and 60MHz next year, 100MHz in 1993 are on the cards. It is not exactly a new trick to increase the number of integer and floating point units within the CPU and split the instruction stream between them - ask Prime Computer Inc or Tandem Computers Inc. The number of Optimised compilers can improve performance by 50% - and IBM is doing its own compilers for the major languages. Symmetric multiprocessing can create configurations two to 10 times as powerful as the uniprocessor - within one or two years. And clustering can give a 100-fold increase in performance, so that 10,000 times today's performance will be available. And to underline the scope of the design, it has a 52-bit virtual address - 4 Petabytes - consisting of 16m 256Mb segments; on the other hand, input-output is handled by off-the-shelf "80186-type" processors - sounds like the NEC Corp V40. The machine presently uses a 40Mbyte-per-second Micro Channel bus, twice as fast as in the PS/2, but at the high end, 80M-bytes-per-second - 8 bytes at 100nS, and even 160Mbps, 8 bytes at 50nS, are likely to be needed.

Video bus

At the chip level, implementation will be in CMOS or BiCMOS for the foreseeable future - after all, you reckon to get twice the performance for a given set of design rules with RISC as you do with a complex instruction set microprocessor, and one of the ways IBM was able to get the Rios out the door in what for IBM was a timely fashion was by eschewing custom logic for standard cells wherever possible: the trade-off is in raw performance against time-to-market. With the single chip implementation, the company has had to use rather more custom logic. So what about the low end? We're talking of something in the \$5,000 to \$10,000 price range next year, but the future low-end machine is an object-based multimedia personal workstation - that will require a video bus in addition to the Micro Channel. And yes, there will be an RS/6000 laptop, but despite the pioneering machines in the market, IBM doesn't believe that the technologies are there yet: it reckons that a Unix laptop needs a 1,024 by 768 pixel colour screen and a 150Mb to 300Mb disk drive, so we have to look out to around 1993 before we see a Unix laptop in IBM colours - but don't doubt that such a machine is in the plan. That then - subject to change according to circumstances, is IBM's current RS/6000 road map.

FEARS OVER FOURTH QUARTER DRIVE IBM SHARES BACK DOWN AS IT PREVIEWS WHOLESALE SHAKE-UP

More bullet biting ahead for IBM following news of a \$3,000m fourth quarter charge last week - \$2,000m for 20,000 or more job reductions next year plus \$1,000m for facility closures and asset disposals to trim \$1,000m off costs next year, and \$2,000m a year thereafter. Chief executive John Akers made the following statement: "We are seeing improvement in the pace of business as shipments of our new product lines build, and we believe fourth-quarter operating results, before any special charges, will be our best this year. However, the environment around the world, with few exceptions, continues to be difficult and highly uncertain, and the industry remains highly competitive." The point here is that IBM typically does a third of its total business in the final quarter - in 1986, it accounted for 34% - and if Akers is saying the company only "believes" it will be the best quarter of the year, he seems to be hinting that in comparison with normal fourth quarters, the current one is proving quite ghastly. The workforce reductions - nearly 5% of the total - will hit the US hardest; the company hopes that 40% will be achieved by attrition, the rest by voluntary redundancy incentives; it will reduce the worldwide headcount to 330,000 or fewer compared with 407,000 at peak in 1986. IBM says that it will be taking a series of steps to enable each business unit to take control of its own destiny, be more responsive to its own customers and accountable for its own results, although "because each business is different, the degrees of independence will range across a spectrum, but each will be subject to intensified market discipline," said Akers. The IBM marketing and services companies, organised by geography, will focus on market segments based on the companies' own judgments of opportunities. They will be able to combine the best product and service offerings from IBM and, as appropriate, from other companies, thus providing total solutions that are tailored to customer needs. The IBM manufacturing and development businesses, organised by product, will henceforth concentrate on being the lowest cost manufacturer of up-to-date information systems with a key objective being to shorten substantially product development cycles; they will also be increasingly free to pursue a variety of distribution channels.

Overheads

Crucially, they will be responsible for their own research and development and won't have to bear overhead costs of developing exotic products - nor will they have to use the IBM sales force. And each major business unit or company, over time, will report financial results individually, and pay of executives will be tied more directly to its performance. And IBM will identify areas of potential growth and manage investments in the most promising possibilities among current businesses, alliances and partnerships, as well as new ventures. While in the past IBM has owned 100% of its business units, the company in the future might remain complete owner or become a majority or minority owner, of any business unit, Akers said. In one major initiative, Microscope hears that in Europe, IBM will shortly announce a new company that will market by mail order a new line of low-end 80386SX-based personal computers made to its design by a Taiwanese firm, and that they will carry a non-IBM name that nevertheless brings the company to mind.

IBM CREATES NEW JOB FOR METAPHOR'S LIDDLE

Not wanting to lose a good man, IBM Corp appointed Metaphor Computer Systems chief executive David Liddle to the new post of vice-president, new systems business development in the Persona; Systems division a few weeks back. Dr Liddle's task is to establish and expand strategic programming alliances that compliment IBM's internal development efforts on OS/2, AIX, advanced object technology and future Personal Systems operating systems. He was in line to lead the object-oriented Taligent joint venture with Apple Computer Inc but ducked out.

EAST GERMAN COMPUTER GIANT ROBOTRON TO BE LIQUIDISED

The once-dominant computer and office equipment manufacturer based in East Germany, VEB Kombinat Robotron, or the various remaining parts thereof - even German computer journalists and, for that matter, Robotron itself seems to be confused as to what that comprises - is about to go into liquidation. According to the Belgian press, 2,500 jobs will be lost. Robotron once boasted 70,000 employees, though parts of the group have gradually been sold off to various Western companies, including Siemens-Nixdorf Informationssysteme AG (UX No 298). The remaining bits are controlled by the German privatisation agency, the Treuhand.

UNISYS CANCELS FLOTATION OF PARAMAX, DEBT STANDS AT \$3,000m

Unisys Corp has suffered a substantial setback in its efforts to pay down its debt with the decision to withdraw the flotation of its Paramax Inc defence business in the wake of the slide on Wall Street and uncertainties over the outlook for US defence spending. The company did offer a bit of cheer with a forecast that it expects to be in profit for the current quarter, to go a little way to reduce the \$1,470m accumulated losses for the first nine months. Unisys said that the proposed sale had been an opportunity, not a necessity, and that it would not have been in the best interests of Unisys and its stakeholders to sell the unit in a weak market at a fire sale price. Sale of Paramax, which would have paid Unisys \$332m cash to settle inter-company indebtedness, was intended to raise between \$440m and \$500m, giving it some \$800m to set against its debt mountain, which currently stands at about \$3,000m, but in the present climate would likely not have been saleable at the intended price.

CHELTONIAN GETS FINANCIAL BACKING FROM 3i AFTER ITS SPLIT FROM SQL SYSTEMS

UK Project management specialist, Cheltonian International, is to receive equity funding from 3i in return for a 20% shareholding in the Twickenham-based company. Cheltonian says that the additional funding will enable it to accelerate development of its Panorama project management system, in addition to expanding UK and international operations. The new financing comes only 14 months after Cheltonian was acquired by SQL Systems International Group, a merger that didn't work particularly well and Cheltonian subsequently decided to go its own way via a management buyout in June. At the time of SQL's investment, Cheltonian was making £500,000 in pre-tax profits, but wedlock and divorce have taken their toll, and the company now hopes to break even on £1.7m this year. Nonetheless, Cheltonian anticipates profits of £400m and £600m over the next two years, and expects its turnover to rise to the sum of £2.7m and £4m respectively.

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TOMEN TAKES 5% STAKE IN IXI

Lack of interest among US and European venture capitalists threatens to hand the global software industry over to Japan Inc on a plate. Almost all the young companies developing and using the vital technologies - led by object-oriented programming, which promises the biggest revolution in the history of the software industry, are winning eager backing from Japanese companies that have spotted that once object standards are established, all their disadvantages in competing with the US software industry will disappear: they will be able to create marketable applications by buying objects off the shelf. The latest instance of the trend comes from the UK, where Tomen Electronics Co has invested £720,000 for a 5.3% stake in X.desktop developer IXI Ltd of Cambridge, and will also establish an equally-owned company with IXI in Japan. Tomen also gets a seat on the IXI board. The new IXI Japan Inc, capitalised at some \$80,000, will have Tomen Electronics president Ishikawa as its president. It will start life with just four employees. Tomen is already the local distributor of X.desktop, but under the new agreement, gets the whole of the Far East, where initial plans include a Korean version, with marketing in the region handled by the trading company's existing sales network.

SANYO WORKS ON UNIX PENS

While either MS-DOS or proprietary operating systems are the jumping-off point for pen-driven portable computers in the US and Europe, in Japan, Sanyo Electric Co has stepped up a notch and gone for Unix in its 80386-based Pen-based Windows System. The machine uses a supertwisted nematic liquid crystal diode display, has no keyboard and uses the custom pen as its only input device. The machine handles handwritten input of Japanese characters at an average speed of two characters per second. It is also capable of re-displaying and correcting previously input characters, and unlike other pen-based Japanese character recognition hardware, such as that in Sony Corp's PalmTop notebook, does not require that the user write within a special frame on the screen. Only a prototype at present, the machine can recognise 2,125 Kanji, Kata Kana and alphanumeric characters. Sanyo is pitching for commercial release of products within two years.

Louisville, Colorado-based Storage Technology Corp has jumped into the IBM Corp AS/400 and RS/6000 markets with three new tape subsystems, closely followed by rivals IPL Systems Inc of Waltham, Massachusetts which included disk subsystems as well as tape drives for the IBM Unix workstation.

Dell Computer Corp's results leap off the page in these recessionary times: Austin, Texas-based Dell Computer Corp has reported third quarter net profits up 89.7% on turnover that rose 67.7% to \$229.3m: name another major computer maker that has increased sales and earnings each quarter this year.

In a consolidation in the Ada market, Verdix Corp, best-known for the Verdix Ada Development System, is to acquire Irvine, California-based desktop Ada software engineering tools developer Meridian Software Systems Inc in an exchange of shares that will value Meridian at about \$6m and giving its holders about 15% of the enlarged company.

Judith Hurwitz, doyenne of the Unix consulting set, is leaving Seybold and striking out on her own: The Hurwitz Consulting Group will continue her strategic consulting and publish a monthly newsletter called *Tool Watch* that promises to take a holistic approach to enabling applications development. She'll wind down her Seybold commitments by the end of the year but her new phone number is already working (617) 965-5862.

The Computer Users of Europe (CUE) group, which represents some 350 users including the Automobile Association, House of Fraser and Generale de Banque, met in Brussels a few weeks back, and made the customary call to the industry for "commitment to the rapid development of standards": the group plans to launch itself as a fully independent, pan-European user group in May 1992, beginning recruitment now.

And now the Aussies are doing it: They've kicked off an Australian User Alliance for Open Systems.

Okidata's 1860 boxes now have a COBOL compiler, from Acucobol.

Commenting on its financial position, Sequent Computer Corp assured Unigram/X that it has financed almost all of its growth with Equity, not debt, had a "rock solid" balance sheet, total assets of \$235 million, \$150m net equity, less than \$2 million of long term debt and a \$30m line of credit with three major banks, remaining largely unused. "We have more than enough cash to execute our current business model and expect to generate cash from operations in 1992".

AEG ModComp has announced the Development Server I, a Unix application development environment for its Real/Star RISC computers running its Real/IX Unix implementation. The environment was originally developed for ModComp's proprietary MAX operating system, and the 28 MIPS desktop RISC system includes six VME slots, 16Mb RAM, SCSI, 300Mb disk, Ethernet, a 19" X-terminal, Real/IX, the Real/VU Motif interface and GLS C compiler. Prices start at \$39,000.

IBM Corp will be using the Inmos Ltd Transputer in future disk controllers to handle error detection and correction, the first time a major company has adopted the chip.

Convex Computer Corp, Richardson, Texas, says it has shipped 10 of its C3400 supercomputers, introduced back in May (UX No 333).

Computer Methods Corp, Littleton, Massachusetts, is making available a range of services for companies that want to implement OSF's DCE: CMC ported MIT's project Athena service for DECathena.

Ottawa, Canada-based Cognos Inc say its PowerHouse fourth-generation language and StarBase relational database are now available on Sun Microsystems Inc Sparc workstations and servers: prices go from \$6,000 to \$225,000 depending on the number of users.

Cray Electronics Group's Helix Software Consultants Ltd, London, is to distribute Boston, Massachusetts-based Belevedere Financial Systems' Unix portfolio management system - GPS - in the UK.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, December 9-13 1991

Number 363

UNIVEL OPENS FOR BUSINESS THIS WEEK

Unix System Laboratories Inc and Novell Inc have signed-off on their definitive joint venture agreement and will be opening the door of Univel this week. The company, which reportedly has Microsoft worried, will be headquartered in San Jose, California. As previously reported it will be run by ex-USL VP Joel Applebaum (UX No 356). Univel is intended as the mass marketing and distribution channel for Destiny, USL's desktop Unix effort due to be delivered next summer. The product and the venture together will be USL's first experience of the binary shrink-wrapped marketplace and it's hoping to stoke demand for Unix into a true commodity business. With Univel handling the mass market and itself supplying source code to its traditional customer base, USL will argue that it has achieved the first fully-scalable product line. Univel, which will have some integration responsibilities - marrying Destiny to Novell technology - will approach the market from two levels, supplying Destiny to OEMs as well. Novell inks HP, Stratus deals, plans others, see page three.

CONSORTIUM PREPARING UNISYS BID IS THOUGHT TO INCLUDE DEC

News that a consortium is being put together to make an agreed bid for floundering Unisys Corp turns out to be no news at company headquarters in Blue Bell, Pennsylvania, where we hear there have been whispers doing the rounds for some time - and, embarrassingly, chief executive James Unruh was a long way from being the first to know. Biggest surprise, sources close to the company say, is that the computer company involved in the consortium is not, despite the apparently informed speculation, Japanese, but is none other than that latter day snapper-up of unconsidered trifles, Digital Equipment Corp, which has already picked up the unwanted Mannesmann-Kienzle GmbH and Philips Information Systems. Word is that DEC would initially come in for not more than 30%, leaving a big gap in the financing, and the whisper among the birch groves at Blue Bell is that a financially-oriented multinational has been brought in to fill the gap. The same sources say that the price being considered is \$750m plus assumption of debt and preferred stock totalling \$3,700m now that Unisys has failed to divest its Paramax defence electronics unit (UX No 362). With mention of Paramax, the story moves down to Washington, where word is that the name of US Defense Secretary Dick Cheney can be added to those of Lord King, ex-IBMer Edgar Neufeld, and Massachusetts Institute of Technology professor Kenneth Smith. It seems that Cheney is sufficiently worried about the future of a company that remains a major supplier of the Pentagon and other US government departments that he has given the proposed HTIC consortium his active blessing - and may even be ready to retire from government to head Paramax or another part of the firm. The leap in the share price on the original USA Today story may have been overdone - at \$5 a share, the company is valued \$800m, rather more than the consortium appears to be ready to pay for the common stock. The whole thing is very far from being a done deal, and the consortium does have something of the air of the quixotic attempt by Plessey Co to rally a consortium to launch a break-up bid for GEC Plc when Plessey was trying to escape from GEC's bear hug. Nor, say nervous Unisys people, is there any indication of what degree of dismemberment of the company is intended should any takeover offer be successful.

DEC READIES OSF/1 FOR ACE BOXES AT UNIFORM

If it can make the schedule, DEC is apparently hoping to announce OSF/1 at UniForum in January. Under the early access programme, DEC has taken the operating system from the Open Software Foundation, added an installation programme and some documentation and shipped an unsupported version out to customer sites. The stuff coming down early in the first quarter will be the first supported unit with shared libraries, real-time hooks, Ultrix compatibility and a System V verification suite. It will apparently act as a stand-in for Open Desktop on DEC's ACE platforms until ODT arrives as well as feature on other boxes.

UNIPLEX "TO BE ACQUIRED BY AMBITIOUS IMI PLC"

As we went to press, details were being finalised for the acquisition of office automation software house Uniplex by IMI Plc, the Birmingham, UK-based engineering group previously known as Imperial Metal Industries, a £1,000m concern. IMI Computer Ltd, a subsidiary company with US offices in Greenwich, Connecticut, has concentrated on the IBM proprietary market, and worked closely with IBM on OfficeVision. Increasingly interested in Unix, IMI bought Brook Street Computers back in October 1990 (UX No 307): Brook Street's highly regarded Unity range of business software modules already includes a tight tie-in with the Uniplex office automation suite. The eventual result could be a unification of efforts to form a single software and services company within IMI with a turnover in the region of £50m, and probably already makes the combined Brook Street/Uniplex the largest supplier of Unix software in Europe. Over the last few years Uniplex has won a string of lucrative UK and US Defence deals and claims leadership in the Unix integrated office automation league - although rivals Quadratron dispute the way the figures are measured. Even so, it was not large enough to invest the necessary cash to ensure that it will be able to compete in a few years time, when the majors enter and competition becomes really serious. Sceptics wonder if this deal is enough.

HP BUSHMASTER TIPPED FOR MID-JANUARY, DAYS AFTER IBM

According to our US snakecharmers, Hewlett-Packard Co's latest wriggler, the low-end 710 PA RISC workstation - or Bushmaster - which has been around for several months but has yet to see the light of day, is due to make its appearance around the middle of January, with a price point that won't be set in stone until IBM finally reveals its new low-end and high-end RS/6000s (UX No 352). Those are now expected at the time of UniForum Unix Show in San Francisco during the second week of January. The Bushmaster, reportedly flying at 50 SPECmarks - 58 MIPS - is likely to come in at around two thirds of the asking price of a Sun Microsystems Inc low-end IPX workstation, which currently goes to around 25 SPECmarks and costs \$12,000. HP's new servers, page five.

GAIN - FORMERLY CAYENNE - WORKS WITH MATSUSHITA TO STEAL KALEIDA'S MULTI-MEDIA CROWN

by Maureen O'Gara

A little two-year-old start-up recently re-christened Gain Technology and its silent partner, Matsushita Electric, figure on giving the IBM/Apple joint venture Kaleida a run for its money. In fact, Gain hopes to usurp Kaleida's stated charter completely, and by dint of a wished-for alliance with IBM/Apple cause them to accept its technology in place of their own, redirecting Kaleida's efforts into other channels. Gain, known as Cayenne Systems until a few weeks ago (UX No 354), claims a two-year technology lead over all other multi-media projects for the software it will start unveiling this month. IBM, Apple, DEC, HP and Sun are reportedly already familiar with it and are said to be interested as potential OEMs - a situation that, if true, gives this no-profile concern a shot at becoming an instant standard.

Graphical Authoring Initiative

Gain claims for itself several firsts. It says it will be the first company to deliver a fully-fledged multi-media authoring environment in an interactive graphical object-oriented package. It also says it will be the first to deliver hypermedia-based products that allow multi-media objects to be hyper-linked in thousands of configurations. Lastly, it says it is the first multimedia software vendor to target large-scale enterprise networks with multiple, concurrent users and applications. Gain has been working secretly with Matsushita for two years on the technology that has given it its new name, Graphical Authoring Initiative. Some 60 man years of joint development effort and \$20m have reportedly gone into it. Apparently, Matsushita has no equity position in Gain, a 40-man company that is employee-owned. However, their exact financial arrangements have yet to be adequately detailed. The start-up is also said to be profitable, with its CEO Tom Siebel suggesting that it was already taking in revenues from licensing deals with unidentified hardware vendors. Yet its first Gain product has yet to hit the market. This will start happening later this month when a teaser kit cleverly dubbed Gain Exposure goes into beta sites. A component of the central Gain environment, not due until April, Gain Exposure promises to be a software kit for creating and delivering demos of X-Window software without the need for the software.

Centerpiece

The Spring will bring out Gain's centrepiece, its portable general-purpose application development environment incorporating multi-media, hypermedia and OOP with text, graphics, animation, audio, full motion video and SQL-database access into a point-and-click visual environment for authoring multimedia applications - Kaleida's stated intent. This stuff is meant to work collaboratively on distributed heterogeneous networks and will appear on Unix, VMS and NT platforms under Motif, DEC Windows and MS Windows over time. The first version of each Gain product, however, will run first on Solaris under Open Look and Motif. Sixty days later they should appear on IBM, DEC and HP RISC boxes and then five months later on VMS. Siebel says the company has written 300,000 lines of code and the software is functionally complete. It is being debugged and re-architected to bring it in line with the recently released Object Request Broker spec published by the Object Management Group. It reportedly supports Oracle, Sybase, Informix and Ingres databases. There are beta versions out with such companies as Sun, Matsushita and Cadence. Gain will also market extensions to its environment, starting with a computer-based training package called Gain Insight, followed by an on-line help system and reference. It obviously intends selling to OEMs as well as ISVs, systems integrators and direct to corporate MIS departments.

TIVOLI DEBUTS FIRST APPLICATIONS FOR WIZDOM

Tivoli Systems this week will debut the first commercial applications written for the object-oriented distributed systems administration framework recently endorsed by both Unix International in Atlas and the Open Software Foundation in DME (UX No 352). That framework was supplied to both organisations by Tivoli and is now being touted as an industry standard. Tivoli's WizDom applications include Primary Resource Management (PRM) for managing users, hosts, groups and network information services; and Privilege and Security Management (PSM) for managing access and security under Kerberos. The software will be initially available on Sun 3s and 4s running SunOS 4.1 or above, Open Look and NFS with 8MB RAM and 60MB free disk space. PRM allows resources to be grouped logically to represent real-world organisational or functional groups. It includes predefined profiles for privilege management and basic notification services. They are customisable. Tivoli expects PSM to speed the adoption of Kerberos, an arcane standard that is hard to install and use by simplifying its application. Including the WizDom Framework and its Mac-style GUI, PRM pricing starts at \$4,500 for a 10-seat network and ranges to \$125,000 for 500 nodes. PSM with Kerberos starts at \$2,250 and goes to \$62,500. Evaluation copies are going for \$500 and \$250 respectively. Site licences can be written for larger network. PRM is a prerequisite for PSM. PRM becomes available next month, PSM in February. WizDom allows end-user and junior systems administration staff to share management responsibilities with the superuser - a first for Unix which has traditionally been an all-or-nothing proposition with the superuser handling everything from strategic policy development to restarting local printers. Tivoli believes WizDom will eventually improve the ratio of administrators to nodes from the current 1:30 to 1:100.

UNISYS BACKS AWAY FROM 88OPEN

Times are tough all over: Unisys downgraded its membership in 88/Open from sponsor to principal member and will take a significant chunk of change with it if it doesn't "re-up" next year or hangs around as just a simple corporate member - however, Unisys 88k machines are only in Japan and Unisys only owns a small percentage of the subsidiary. 88/Open sponsors pay \$350,000 a year; principal members between \$55,000 and \$250,000 depending on revenues and corporate members a mere \$2,500.

PARSYS, MEIKO, TELMAT PUT ESPRIT PARALLEL MACHINE INTO BETA SITES

GP MIMD Esprit consortium members Parsys Ltd, Meiko Scientific Ltd and Telmat Informatique SA (UX No 349), say they are about to bring to market a new parallel computer as an offshoot of the GP MIMD general purpose supercomputing project. No details have been confirmed regarding the performance of the system, but the three partners have said that the machine, which is already in use in some pre-launch sites, is based on Intel 80860, Sparc and Inmos Ltd Transputer processors. The new parallel multiple-instruction-multiple-data supercomputer features the first implementation of the GP MIMD Application Support Interface, being developed as part of the Esprit initiative. This provides a common software environment for applications across machines ranging from personal computers to parallel supercomputers. Full details are expected to be out soon.

NOVELL INKS HP, STRATUS DEALS -**NeXT, AT&T, DATA GENERAL TO FOLLOW?**

The Univel venture with USL aside - see front page - Novell Inc is consolidating its increasingly pivotal role in the latest round of industry realignments - as well as immersing itself deeper in the waters of object-oriented technology - by licensing its NetWare networking technology to a new raft of converts. Demonstrating just how important the hand of Novell is these days, this Tuesday, at an announcement in California, Hewlett-Packard Co chairman, John Young, and Novell CEO, Ray Noorda, will be on hand at the unveiling of NetWare for HP's PA RISC architecture, claimed to be the first native implementation of the networking topology for RISC. HP is also expected to announce that it will begin distributing NetWare. Last week, Marlborough, Massachusetts-based Stratus Computer Inc signed up for Portable NetWare, making it the first fault-tolerant system vendor to offer support. Stratus says it will integrate its full line of fault-tolerant symmetric multiprocessing computers and system software with NetWare to make the resources of its systems accessible to networked personal computer users. Stratus will implement Portable NetWare for its XA2000 and XA/R RISC Continuous Processing Systems and interface it to its Network Express data communications software, under both FTX Release 2 fault-tolerant Unix System V.4 and under its proprietary VOS - price and availability next year. Stratus and Novell have also agreed to join forces to explore the required technologies for building fault-tolerant local and wide area networks spanning desktop computers, fault-tolerant servers, general purpose minis and mainframes. Also in the US, Novell is reported to be planning to license key networking protocol technology to Steve Job's NeXT Computer Inc for inclusion in version 3.0 of the object-oriented NeXT Step operating system environment due in the first quarter of 1992. Meanwhile, Computerworld believes that Novell is also planning, by the end of the year, to invest some \$2m in Salt Lake City firm Serius Corp, which makes object-oriented software for the Apple Computer Inc Macintosh environment. Sun Microsystems Inc and IBM are already NetWare enthusiasts, and AT&T and Data General Corp are believed to be next in line, with agreements awaiting ink.

SUN UK LEARNS ABC OF SELLING

In the UK, now that Sun Microsystems has parted company with one of its two master resellers, Frontline Distribution Ltd, Basingstoke, Hants (UX No 354), the firm is planning to re-vamp its whole distribution strategy at the beginning of next year, to relieve, it says, pressure on its direct sales force. Sun is appointing eight ABCs - Authorised Business Centres - to handle the low-end of its product line: the ABCs will work closely with Sun's own centres in those regions. Gearing up for the next series of battles at the low-end of the Unix workstation market, the ABCs should allow Sun's direct sales force more room to cultivate customers for its higher-end server kit on which the fatter margins are made. Warrington, Lancashire-based Technology plc retains its status as a master reseller.

SANYO SHOWS PROTOTYPE OF WORLD'S FIRST PEN-DRIVEN UNIX LAPTOP

While either MS-DOS or proprietary operating systems are the jumping-off point for pen-driven portable computers in the US and Europe, in Japan, Sanyo Electric Co has stepped up a notch and gone for Unix in its 80386-based Pen-based Windows System. The machine uses a supertwisted nematic liquid crystal diode display, has no keyboard and uses the custom pen as its only input device. The machine handles handwritten input of Japanese characters at an average speed of two characters per second. It is also capable of re-displaying and correcting previously input characters, and unlike other pen-based Japanese character recognition hardware, such as that in Sony Corp's PalmTop notebook, does not require that the user write within a special frame on the screen. Only a prototype at present, the machine can recognise 2,125 Kanji, Kata, Kana and alphanumeric characters. Sanyo is pitching for commercial release of products based on the prototype within two years.

BULL LOOKS FOR "OPEN" PARTNER - FAVOURS IBM, MAY DEFECT FROM ACE

It looks as if Groupe Bull SA may be the European partner for the IBM-Apple Computer Inc-Motorola Inc collaboration on the PowerPC monolithic RISC: Bull says it is looking for an open systems partner and is dissatisfied with its present supplier of RISCs, MIPS Computer Systems Inc. According to Dow Jones earlier on last week, Bull wants a partner to share the heavy costs of developing its new line of open systems products, and is in "serious discussions" with a number of potential suitors, all members of the Open Software Foundation. Digital Equipment Corp and Hewlett-Packard Co also qualify and would each be able to offer a leading edge RISC processor, but French industry sources have IBM as favourite to win the heart of Groupe Bull. Bull is, of course, a member of the ACE Consortium, and the move puts the company's commitment to ACE very much in doubt. The rift between Bull and MIPS, first indicated by the resignation of Chairman and CEO Francis Lorentz from the MIPS board back in October, appears to be mainly due to the fact that Bull was looking to MIPS to provide it with a mainframe-like multiprocessor range of systems for it to re-badge - since ACE, MIPS has been more concerned with low-end PC RISC workstations, and cut back work on a four processor R4000 project earlier this year (UX No 341). But a spokesman from MIPS in Paris claimed the move was political - Bull needs a US or European partner in addition to its NEC relationship, and since talks with ACE members Siemens-Nixdorf and Olivetti broke down, it now needs to distance itself from the ACE crowd. Bull UK chief executive George McNeil denied that this was a consideration.

INTERACTIVE: MAYBE SUNSOFT THIS YEAR?

Although two of the proposed deadlines it was reportedly shooting for have already been and gone (UX No 361), SunSoft Inc's vice president of sales and marketing, Bill Larson, says the Sun subsidiary is "guardedly optimistic," that the acquisition of Interactive Systems Corp will go through by the end of the year. Sources suggest the delay concerns the team line-up - who is in and who gets left out - though present at a SunSoft briefing in London last week was Interactive's European boss, Doug Millar, who looks like he gets a seat on the coach. SunSoft will be based at Interactive's European headquarters in High Wycombe, Buckinghamshire, and says it will open offices in Paris and Munich next year. It'll get Spanish, Italian, Swedish and East European distribution outlets from the tie-up with Interactive, another in Australia has been lined-up, and SunSoft is also talking to a would-be partner in India.

MAC, WINDOWS EMULATION FOR SOLARIS

SunSoft has Oracle Corp and SAS Institute applications already running under Solaris 2.0, the multi-processing Unix V.4 version of SunOS that'll ship on Intel platforms as well as the Sparc. Sparc versions of the system software ship from the second quarter of next year - Solaris 2.0 for Intel goes out 90 days thereafter - but Larson says it'll have 15 applications running in the environment by the time of January's UniForum show in San Francisco. Minimum configuration for an Intel platform running Solaris 2.0 is a 33MHz 80386DX or 80486DX with co-processor, cache, 8Mb RAM, 200Mb fast disk, Ethernet, EISA bus and Mega or super VGA graphics (SunSoft hasn't decided which to go for). With MS-DOS compatibility already included, Larson says Microsoft Windows and Apple Mac emulation for Solaris will follow, along with SCO Xenix and BSD compatibility. In addition it says a large systems vendor has signed up for its ToolTalk Solaris connectivity suite and that an announcement is imminent.

IBM FORMS SEPARATE COMPANIES FOR STORAGE DEVICES, PRINTERS, RECRUITMENT; RELAXES GRIP

IBM Corp took the first hesitant steps towards the promised radical restructuring of its operations last week, pulling its storage devices and printers out of the mainframe line of business and turning them into new business units. New management measurement systems were also outlined. Significantly, while the disks and tapes go into a new Storage Products line of business, printers fall under a new Pennant Systems Company, and the choice of name suggests that IBM is considering either floating off or selling the printer business, which builds some of its own printers but buys much of its product OEM from either Eastman Kodak Co or Hitachi Ltd.

On printers, described as a \$2,000m business in a \$30,000m industry, IBM says it intends to make Pennant a wholly-owned subsidiary. Pennant will have temporary headquarters in Norwalk, Connecticut, development operations in Boulder and Tucson, and development and manufacturing in Endicott, New York. It will oversee the Jarfalla plant, which remains part of IBM Sweden. Pennant will be headed by James Vanderslice. The Storage Products line of business is also to get its own name when IBM can think of one, but no mention is made of it becoming a subsidiary. It will step up IBM's OEM efforts - the company has already won Apple Computer Inc and Sun Microsystems Inc as OEM customers - as well as supplying all IBM's needs. IBM rates it an \$11,000m business in a \$53,000m industry. It will be headquartered in San Jose, California under Ray Abu-Zayyad, who joins IBM's corporate management board. It takes in all magnetic and optical disks, tape drives and controllers, and related software. It takes in development and manufacturing in San Jose; Rochester, Minnesota; Havant, UK; and Fujisawa; development in Tucson and manufacturing in Mainz; Berlin; and Martinez, Argentina. A new US Employment Solutions Corp is being formed to handle hiring and recruiting for IBM and, in due course, other companies: it will take on some IBM people but also hire from outside. In other restructurings, the Personal Systems line of business gets an expanded mission to acquire as well as develop "best-of-breed" technologies and subsystems for PS/2s, 1s and RS/6000s. Marketing executives from around the world will join an executive board, headed by James Cannavino. There is also a new Entry Systems Technology unit to improve efficiency in developing future subsystems and technologies - and it is noteworthy that it is under a Japanese general manager, Nobuo Mii, who was vice-president and general manager of Asia Pacific Technical Operations. The Applications Business Systems line of business will have AS/400 brand managers in each market and some countries will implement a general business marketing organisation. IBM also formed an executive steering committee to help co-ordinate an "effective working relationship" among the large systems business, including the Enterprise Systems, Storage Products, Networking Products, Programming Systems and Technology Products lines of business under senior vice-president Terry Lautenbach, who cedes the Technology Products line of business to company president Jack Kuehler. The new management and measurement systems are designed to bring autonomy to individual businesses to optimise their respective markets. Business plans and assessment systems applied to each business will vary since each market is different, IBM said, although certain principles will remain in effect for all businesses, including individual reporting of financial results from IBM's major businesses, salaries tied more directly to each unit's performance, and "operational changes that will inject more market discipline into the relationships between IBM's business units. Marketing and services companies will become service companies "creating value for customers through knowledge and skills, and depending less on product cycles and hardware volumes for their prosperity," IBM said. They will in most cases be responsible for field inventory they buy from IBM.

IBM OFFERS RS/6000 TRADE-INS ON S/1, RT...

IBM Corp is trying to mop up all those old Series/1 minis and RTs out there and get more people using the RS/6000, so it has announced a special offer to US users under which they can have \$1,000 off any of the 7012-32H, 7013-520, 7013-53H or 7013-550 RS/6000s. The machine must be ordered by May 29 1992 and must be in by June 30: if you made the switch already, bad luck. Arrangements have been made with Recyclers Consulting Group in New Haven, Connecticut to facilitate pick-up and return of replaced processors to IBM - and they must be in good working order. Terms are the same for RT as for Series/1, but North American Van Lines in Anaheim, California is doing the RT pick-up.

..A NEW 16" HIGH-RESOLUTION 6091 FOR RS/6000
Among IBM Corp's Tuesday goodies last week was the 6091 Model 016 16" high-resolution graphics colour monitor, which supports an analogue red-green-blue interface and meets the European health and safety standards. It has non-interlaced refresh rates of up to 77Hz and is designed for use with RS/6000 and Xstation 120 and 130. It puts up 1,024 by 768, 1,104 by 828, 1,280 by 1,024 and 1,280 by 1,024 pixels, the first two chosen by sync signal polarity, the second two by a front panel switch. Available in the US December 27, the new display will cost \$2,675.

AT&T CONFIRMS COMMITMENT TO NCR WITH TERADATA MOVE

Suggesting that AT&T Co really is determined to make its acquisition of NCR Corp a success, it is to allow NCR to pay \$520m in AT&T shares to acquire Teradata Corp, the back-end relational database processor company that, some observers have said, IBM fears more than any other. Under the merger agreement, each Teradata share would be exchanged for \$30.25 of AT&T common and Teradata shares put on \$5.125 to \$28.875 on the news. The move is a strong one for AT&T: the phone company is its largest customer and bought \$100m of its DBC-1012 database computers last year. NCR paid about \$26m for 9% of Teradata in the form of new shares in March 1990 to cement the deal under which it wanted to use Teradata's Ynet interconnection for tying together the Intel Corp processors in its parallel database in its new top-end 3600 and 3700 machines: the 3600 has up to 288 processors and is held up by about six months. The 3700, with up to 1,000 Intel processors, is due out next year. Teradata has about 1,600 employees with operations in the US and 13 other countries, and lost \$2.36m on sales of \$257.8m for fiscal 1991 to June 30. The move is bad news for Amdahl Corp, because it suggests that AT&T will increasingly use NCR machines backed by Teradata database machines in its operations; AT&T is also Amdahl's largest customer.

HEWLETT-PACKARD SERVERS ACCOMPANY MULTIPROCESSORS

Hewlett-Packard Co has duly launched its three- and four-way symmetric multiprocessing Unix machines, the HP 9000 870S/300 and 400 (UX No 361), claiming that under the TPC-A benchmark, they are the industry's fastest Unix computers for business applications, matching the performance of IBM Corp 3090 mainframes at a quarter of the cost. The 870S/400 with four Precision Architecture RISCs is claimed to do 173 TPC-A transactions per second with nearly 2,000 active users. The company also has 2.7Gb and 5.4Gb disk arrays to provide more than 500Gb of on-line storage, and offers "the fastest back-up" for a Unix system with its new Omniback/Turbo, supporting back-up and recovery speeds of up to 12Gb per hour, with capacity of 80Gb. The 9000 870/300 starts at \$440,000, the 400 at \$530,000, and are available immediately. The disk arrays are \$28,675 to \$53,600. The company also extended its server line with the HP 9000 Models 867S and 877S, and reported that its Model 817S offers price-performance of \$11,830 per transaction per second using TPC-A. New 64Mb memory modules double maximum system memory on the servers to 384Mb, and is now making a new Digital Audio Tape drive with 2Gb capacity standard on its 8X7 servers; there is also a CD-ROM option for them. The HP 9000 Models 867S and 877S begin at \$112,500 and \$140,000 respectively, which include the processor, operating system, memory, networking and standard peripherals such as the 2Gb drive. The 867S is rated at 74.9 TPS and \$15,400 per TPS. Model 877S is rated at 74.9 TPS and \$15,800 per TPS, and there is also a new HP 700/60 terminal at \$540. All the products are available now.

KALEIDA DEVELOPS OPERATING SYSTEM FOR NEW HOME MEDIA PLAYER

The Apple Computer Inc-IBM Corp Kaleida venture has reportedly started work on a platform-independent media scripting language, which is expected to include a derivative of Apple's QuickTime, that it wants to be the Postscript of multimedia, controlling things such as sound, video, animation and graphics. They're apparently shooting for delivery by the end of next year. Next will come an object-based Kaleida operating system or environment intended for all sorts of machines and due for release in 1993. According to MacWeek, the operating system will run on a new class of consumer product called a media player being developed by IBM, Apple, Sony, Toshiba and Sharp that will be able to store two hour's worth of compressed sound and video on a single rewriteable 5-inch compact disc. It could replace home stereo CD players and videotape recorders as well as be the new home computer. Meanwhile, Apple is trying to interest Sony Corp, its notebook co-developer, in the Kaleida effort.

OLIVETTI CHIEF DE BENEDETTI UNRAVELS STRUCTURE LEFT BY HIS PREDECESSOR

Within three weeks of retaking the reins at Ing C Olivetti & Co SpA, Carlo de Benedetti has largely dismantled the company structure put in place three years ago by Vittorio Cassoni, bringing administration and finance, personnel and industrial relations back into a centralised organisation, in a move that is expected to cost 2,000 jobs but, it is hoped, will save \$330m a year in operating expenses. The present structure of Olivetti Systems & Networks for mainstream systems, Olivetti Office for personal computers and related products, Olivetti Technologies for components, and Olivetti Information Services for software will disappear, with the large overlap in sales forces to be eliminated. There will be three new units, Operations, Diversified Activities and Public Administration, putting a new stress on public sector business, but Information Services will survive. Elserino Piol, head of Systems & Networks, will head Operations, which covers about 90% of the total business, and will have Information Technology and Office divisions.

HITACHI SIGNS FOR NCD X TECHNOLOGY

Hitachi Ltd has signed to OEM the guts of an X-terminal from Network Computing Devices. The contract, valued at around \$4m over the next year, will have NCD supplying Hitachi with the base electronics used in its NCD19c colour terminal starting early in '92. Hitachi will package the boards in its own 19" colour monitor - the same monitor NCD uses. Hitachi will sell the line worldwide with its systems. NCD executive VP Judy Estrin said the deal "will open the way to future joint development efforts on new products in the high-end colour X-terminal arena.

SEQUOIA CLAIMS TOP FAULT-TOLERANT TPC-A ON ORACLE

Marlborough, Massachusetts-based Sequoia Systems Inc now has the first benchmark on Oracle Corp's new Parallel Server relational database 6.2 running on a fault-tolerant system - but it's only the very limited TPC-A Benchmark, developed by the Transaction Processing Performance Council. The Sequoia Series 400 fault-tolerant Unix box achieved 110 transactions per second, claimed to be the highest of any industry-standard database on a fault-tolerant system, a cost per transaction of \$26,895. Sequoia also says that it will implement Oracle's financial, manufacturing and office applications to the 400 - also marketed by Hewlett-Packard Co as the HP 9000 Model 1240 and 1245.

AUSPEX SIGNS THAME MICROSYSTEMS

Back in September, Santa Clara, California-based Auspex Systems Inc said it was looking for European outlets for its Unix NFS series of NS servers (UX No 352). The firm last week signed up Memec Plc group's Thame, Oxfordshire-based distributor Thame Microsystems Ltd to market its systems in the UK and Ireland. Auspex claims its NS 5000 file system server can eliminate bottlenecks in large workstation networks by providing up to five times the input/output performance of current high-end Unix file servers on offer from the likes of Sun Microsystems Inc, Hewlett-Packard Co, DEC and IBM. The NS 5000 distributes I/O functions to separate processors for Ethernet, file storage and host operations, currently handling up to eight Ethernet networks on up to 81Gb disk. One of the new partnerships' arguments is that although servers are the most profitable Unix products for the likes of Sun, DEC, HP and IBM, they are little more than "jumped-up workstations," and do not have the I/O capability to handle lots of workstations networked together. Indeed, for those already committed to an IT strategy based upon one of these technologies, Auspex advises users not to buy the "big iron," but to wait for the next generation of high-performance desktops which will best the performance of most server solutions already on offer. As an example, Auspex cites Sun's newest 690MP server, which it claims delivers only 8% more I/O per second NFS performance than the two year-old Sun 490 system it is intended to replace. Unbeknown to Scott McNealy, salespeople at Sun, which Auspex describes as "the most proprietary open systems company," have even bid Auspex and Sun workstations together on some contracts, it claims, because the Mountain View company's server technology could not meet the required price/performance mark in those cases. This comes from a firm which sells three-quarters of its systems into the Sun base, whose NS servers are front-ended by Sun's Sparc RISC or the Motorola Inc technology found in its older workstations - Auspex now manufactures the Motorola board under licence from Sun - and which plans to offer a multi-processing Sparc solution in line with Sun's latest offerings as customers demand it. Auspex says it will offer a database solution on its servers next year - which will likely bring it into more direct competition with the mainstream Unix community - whilst FDDI communications and support for the Futurebus+ standard are promised for the future. Auspex, currently engaged on its second round of venture financing following an initial tranche of \$20.6m, claims an installed base of some 300 systems, up from 180 in September.

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Last week **Computer Associates** president Charles Wang told Unigram.X there was "no factual basis" to rumours that merger was discussed in his recent round of marathon talks with **Microsoft** chief Bill Gates, or that the pair decided during their reported 12-hour chat that the omens weren't favourable just now because the US Federal Trade Commission was watching every move Microsoft makes: more likely Wang likes having a job to go to.

Uniplex (see front page) is thought to have been up for sale for at least a year - we suggested it when founder and managing director Tony Heywood resigned suddenly in October 1990 (UX No 307), and again in June 1991 (UX No 339), only to be met by vehement denials.

Block off March 24-26 on your calendar for **DB Expo 92**, the database and tools show to be held at the Moscone Center in San Francisco.

We understand **IBM** wants to drop one out of every seven IBMers worldwide by 1995.

The notion of **Solaris-on-Intel** has **IBM** so worried it's not only considering porting **AIX** to **EISA** and **AT-based PC** (UX No 359), its also reportedly thinking about moving it to **Sparc**, **MIPS** and **Motorola-based** machines.

Stephen Johnson, the **HP** manager who bought **3-D** to **Motif** and is credited with overseeing **Hewlett-Packard's** object-oriented push, has left to join **Sierra On-Line** as VP of engineering. He'll put his experience to work building **GUIs** for **PC-based** entertainment and educational products.

OSF, is of course, relocating some of its **Munich** staff to the **US** rather than to the **UK** (UX No 362).

Apparently, **Apple** is trying to interest consumer maven **Sony Corp**, its notebook co-developer, in the **Kaleida** effort.

This week at the **Sun User Group** conference **SunPro** will kick off its own **Special Interest Group (SIG)** for software developers and users.

Apple is talking about building high-volume boxes around the **PowerPC** that would be selling for \$1,000 to \$2,000. Meanwhile, **Motorola** is boasting that versions of the chip designed for low-cost computers will run at 100MHz, have 4m transistors and deliver 100 **Specmarks**. A high-performance chip with 10 million transistors could then fetch 500 **Specmarks**.

Putting another piece of it **Unix** jigsaw in place, **Computer Associates** has bought **Natick**, Massachusetts-based **Compuserve Inc's Access Technology Inc** subsidiary from parent **H&R Block Inc**, **Kansas City**, **Missouri**.

Meanwhile, the **UK's** the **Ministry of Defence** has chosen **Access Technology's** flagship **20/20** spreadsheet to run on its **CHOTS - Corporate Headquarters Office Technology System** - secure office automation system, which will be used by 18,000 staff across 30 sites.

And **HP** has announced **Open Software Environment, OSE**, a programme for helping customers develop customized plans, or roadmaps, to move to open systems.

Computer Sciences amended its protest of the **US** government's \$1.6 billion **RCAS** award to **Boeing** and **Human Designed Systems** believed to include the largest **X** terminal contract ever, close to 60,000 units (UX No 355): **CSC**, whose bid was cheaper, is now saying **Boeing's** bid is short on the required number of workstations and would fail to supply all the required end users.

US reports say **IBM**, **NCR**, **Wyse** and **Hyundai Electronic America** are each readying new **X-terminals** based upon **Intel Corp's i960- RISC** processor: meanwhile **Acer**, **Visual Technologies** and **JCC** are expected to weigh in with **MIPS Computer Systems Inc R3000-based X-terminals**. The shift to **RISC** in **X-terminals** is expected to accelerate further next year with more **AMD 29000-based** offerings from **Samsung** and **Arche Technologies**, and the first **Sparc-based** systems.

Sun's next generation workstations, based upon the **Texas Instruments** superscalar **Viking Sparc** - expected sometime next year - will come in at around £13,000 says one insider.

Motorola Inc is to join the **Apple Computer Inc-Sony Corp** effort to develop a low-end **Mac-based** multimedia personal communicator and contribute cellular technology, says the **Nippon Keizei Shimbun**. **Sony** will also buy 5% or so of **Apple** affiliate **General Magic Inc**, which is working on the thing.

R Squared last week announced the first **NFS** mountable virtual file system worth one terabytes made for **Unix** machines: the **IFS-1200** uses **Kodak** optical disks.

We don't need executives with fancy titles introducing machines any more, they can do it for themselves - which is exactly what happened at **DEC's** press conference in the **US** last week. **Brazen** little **Maxine** spoke in a woman's voice and flashed her winsome \$4,000 price tag. **DEC** said it had pre-sold 2,200 units. **Microsoft** showed **NT** running on it. **Merisel** and **Avnet** will be distributing it.

Cray Research Inc, whose on-and-off flirtation with bankrupt **Floating Point Systems Inc** is very much on again, says that the bankruptcy court has approved its proposal to pay \$3.2m for the assets of the **Beaverton, Oregon** company, and the acquisition can be completed at the end of next week. **Cray** has offered jobs to 187 of the former staff.

London, W5-based Unix Systems Laboratories Europe Ltd is now supplying system message products, such as help and error messages, in **German**, **French**, **Italian** and **Spanish** for **Unix System V.4** as well as **V.4 Machine Readable Documentation** in **German** that enables on-line documentation: the message products provide software and documentation support and run-time support for applications; the initial source fees for the system messages are \$15,000 for the first language and \$5,000 for second and subsequent languages, all are out now; **German Machine Readable Documentation** is \$24,000, **French**, **Italian** and **Spanish** versions will follow shortly.

According to **SunSoft's** **Bill Larson**, the object-oriented development work that **Hewlett-Packard Co** has been doing in conjunction with **Sun** - the **Distributed Object Management Facility** - is being positioned as a successor to the firm's **New Wave** client/server-cum-interface environment on those **HP** platforms powerful enough to support it. **HP** denies that it has any such plans for **New Wave**, which in any case is only a personal computer-Windows product. **DOMF** has no desktop of its own as yet, although a **Motif-based** graphical interface is thought to be on the cards, and **HP** says it is currently readying a new version of **New Wave** for **Windows 3.1**.

Cadre Technologies Inc, authors of the **TeamWork** family of **CASE** tools, says it is the first software house to support the **European Manufacturers Association Portable Common Tool Environment (PCTE)** standard: so far only the major vendors have supported the standard, which aims to establish standard interface and data repository for computer-aided software engineering environments.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper

unigram · X

The weekly information newsletter for the UNIX ® community worldwide

London, December 16-20 1991

Number 364

DEC LEFT CARRYING THE OPEN DESKTOP CAN FOR ACE

Signs are that the Santa Cruz Operation Inc is now hedging all bets it has placed on the ACE consortium initiative. Under pressure, following last month's revelations that it would be delaying the release of its ACE Open Desktop operating system environment (UX No 361), Mike Hill, SCO European market and product planning manager, admitted that the OSF/1 version of Open Desktop for ACE's Intel Corp platforms is now unlikely to make a showing before 1993, and that what exactly it will feature it is still very much in question. To plug one of the many holes from which ACE is now leaking, and in an attempt to keep some kind of Unix effort at the initiative afloat, DEC says it has taken over responsibility for development of Open Desktop-OSF/1 for the MIPS Computer Systems Inc-based ACE architectures. That environment should still be ready by next summer, around the time that Microsoft Corp's NT is also expected to make its debut on ACE. DEC - which is due to announce product based upon the technology early in the new year - is to licence the OSF/1-derived ODT back to SCO, which will be marketing the thing. The developers' snapshot promised for the end of this year is apparently still on track, but it won't contain all the planned functionality, and there will have to be a further development kit next quarter. In the disputed area of a graphical user interface for ODT on ACE, DEC's OSF/1-based ODT includes IXI Ltd's X.desktop manager. SCO's existing AT&T Unix-based ODT for Intel CPUs already includes the thing, but its delayed OSF/1-ODT for ACE-Intel platforms may feature a different metaphor - or at least allow for others to be plugged-in - to satisfy the likes of Compaq Computer Corp, which had been pressing for the inclusion of Hewlett-Packard's Visual User Environment interface (UX No 348). SCO says it is "still talking with IXI and other technology providers." Alongside the OSF/1 and Ultrix melange, DEC's ODT for MIPS includes some Unix SVR4 code, and "will have some functional compatibility with SVR4," says Hill. It will feature OSF's Distributed Computing Environment technology, and compatibility with the group's Distributed Management Environment.

Too many cooks

SCO admits that industry analysts monitoring the initiative's progress have mapped out as many as seven different scenarios that the ACE game plan may lead to. Indeed, just a fortnight ago, California compiler house, Translation Systems, said it was proposing to build an ACE distribution format that would allow independent software vendors to access all possible ACE permutations at one stroke. That task now embraces the R3000, R4000, Intel, two versions of Open Desktop, SVR4 and NT (UX No 362). The whole thing is beginning to feel more like a journey on a dungeons and dragons machine, where the player travels on a route of his own volition, than to the birth of a new standard of computing modeled on the personal computer revolution. If it all sounds like a bit of a come-down from the halcyon days of spring when ACE first bloomed, then it is. "ACE may fail," muttered SCO last week, after passing-off its latest moves as a "change in perception, rather than attitude." It could of course have more to do with SCO focusing on Intel - where its strengths lie - rather than on longer term business, in preparation, some commentators have suggested, for a possible Initial Public Offering (UX No 361). SCO has done nothing to derail such talk. It has always said that it will go public at some point in time, and as Hill admits, to do that "we need to concentrate on core business." Looking at it another way, it may just be that SCO is tired of being tripped-up at every step on the ACE journey it began with all the best intentions. It all leaves ACE looking more like it always probably was - a Microsoft-on-Intel play. Bill Gates will be going ho ho ho all the way to the bank.

CRAY "WANTS DEC ALPHA RISC FOR PARALLEL CPU"

Despite deciding that it does want the assets of Floating Point Systems Inc after all, Cray Research Inc is apparently not interested in following Floating Point in using the Sparc RISC in a forthcoming line of massively parallel machines. Instead, reports *Electronic News*, the company is negotiating with Digital Equipment Corp to use its forthcoming Alpha RISC, most likely for its proposed parallel machines. The paper suggests that a new company, formed in Sunnyvale by former MIPS Computer Systems Inc research and development executive John Moussourie, may be involved in the negotiations as well. The new company, MicroUnity Systems Engineering Inc, is said to be working on a version of the Alpha designed for massively parallel computing: DEC's interest in the field is underscored by its investment in, and remarketing agreement with, Maspar Computer Corp. Cray is understood to be interested in the Alpha for a second-generation parallel machine planned for around 1995; a first generation model, effectively a prototype, would precede in it 1993, and that might use Sparc. Cray's interest in the Alpha is said to have been excited by the fact that the 64-bit part is said to have more in common with the architecture of the original Cray 1 than with DEC's own VAX. However the successor machines to the Cray 1 are now with Seymour Cray's spin-out Cray Computer Corp.

DESTINY "WILL ALSO APPEAR ON SPARC"

The Unix System Labs/Novell Inc Univel desktop Unix joint venture came into being last Thursday, with Novell Inc as the lead partner, taking a 55% interest. With a clear remit to outflank Microsoft Corp's NT and IBM/Apple, Univel is talking in terms of very high volume shipments, and promising that Destiny, the packaged SVR4.1 miniaturised Unix version for Intel that is to be the venture's core product offering, will also appear on other platforms, Sparc being the first. Details, page two.

UNIVEL PROMISES TO MAKE A SERVER DENT IN INTEL'S MARKET

by Maureen O'Gara

Univel, the desktop Unix joint venture between Unix System Laboratories and Novell, officially bowed last Thursday as expected (UX No 363), promising to make a server dent in the Intel market and then pursue other platforms with its Destiny product. Sources close to the start-up claim a Sparc port is definitely in the cards for the end of next year and Univel's new president Joel Applebaum last week also mentioned ARC and "others." However, the start-up is currently without any marketable product at all and will be until the middle of next year. Until then, it declined to discuss the software in any detail outside of what has already been published (UX No 358), other than to suggest it would be targeted at both the client and the server and work with native Netware. Rather unsurprisingly, because of its distribution skills, Novell turns out to be the lead partner in the new company, with a 55% interest. On the face of it, the start-up looks a serious and potentially formidable competitor, starting life endowed with a kitty worth \$30m in cash and other assets.

At the press conference, USL chairman Bob Kavner made it quite clear Univel specifically meant to outflank Microsoft's would-be Unix competitor NT and the IBM/Apple joint venture warning them "this is our turf." Applebaum forecast that more than half of the advanced operating systems market could fall to Univel and spoke of moving "billions" of units. He expects Univel to be "in the black quickly." USL officials, however, made light of suggestions that the mere existence of Univel could create a rift between it and its other partner Sun, which is targeting the self-same Intel market with Solaris 2.0 and is also a significant developer of SVR4. USL president Roel Pieper said he had spoken to Sun as recently as the night before the press conference and that they were amenable to what was happening. He suggested that they would both be carrying the Unix flag into the marketplace. As to the joint venture, specific financial terms were not disclosed. However, it holds technology rights from both Novell and USL. In addition, its parents said, it will have access to certain of their technical resources and their educational, training, sales, marketing and distribution capabilities.

Novell has already signed up to market and distribute Univel's forthcoming product line to its 380 Platinum and 2,700 Gold resellers, giving it a jumpstart on sales. Novell will also manufacture the Univel product line. The venture is headquartered in San Jose, California. An integration unit is already in place in Utah, Novell's stomping ground, under one of Novell's Unix gurus Grover Richter, now Univel VP product group. A small development-minded liaison group will be headquartered at USL in New Jersey to huddle with USL's Desktop Technology Laboratory, creators of Destiny, the miniaturised SVR4.1 Univel will be licensing. USL will hand off Destiny to Richter to be tightly integrated with Novell's Netware and productised.

Such productisation has been on-going for several quarters, Applebaum indicated, with USL and Novell staff acting as an "ad hoc virtual company." The companies claimed the effort was well along as well it should be after absorbing two years of work. Key features, however, such as the interface, seem to still be unresolved, with the start-up considering buying in some outside technologies. Not all of these purchased technologies are intended for Univel's initial offering but may go into later generations - the next one in fact is already in the labs, Richter said. The start-up expects to have 50 people next year. Its distribution efforts are expected to be worldwide (SVR4.1 is internationalised) and immediate, operating initially out of parent facilities. Gregory Fallon, Novell's channel marketing director for international operations, has been named VP, sales and channel management. Univel is slated to pursue distributors, integrators and resellers of every complexion for the binary version of Destiny and build on USL's OEM alliances for source licensees. The Univel board includes Applebaum, two nominees from Novell and two from USL. One of these slots has gone to Novell executive VP Kenwal Rikhi.

JAPANESE UNIX SHOW HERALDS NEW X-TERMINAL DEVELOPMENTS

The annual Japanese Unix Fair took place in Tokyo between December 4 and 5, attracting more than 28,000 people and heralding a number of new hardware and software products, including products in development. Anita Byrnes reports.

Thin Plasma Display X-terminals crowd the floor...

Thin plasma display-based X-terminals were in evidence at a number of companies' stands, from Anritsu - its DX2000 flat personal X-station Peta, in a compact size with a 1,280 by 1,024 dot high-resolution electroluminescent panel; and from Takaoka Seisakusho, the XMiNT-F with a 3.5" deep plasma display with the same resolution, in a design with a separate keyboard, and claimed to be the fastest plasma display X-terminal. At Takaoka's stand, another X-terminal in the series, the XMiNT-H, with a 1,664 by 1,200 pixel display, was equipped with a 25MHz 68030 CPU and up to 12Mb of memory, aimed at high-capacity applications. Japan Computer Corp had on show the Xface series of flat plasma panel X-Window terminals, including a low-end model with the same electroluminescent screen technology, measuring 11" by 5.3" and based on a 33MHz MC68030; and at the high-end the SuperXR, based on an R3000 chip and incorporating a Trinitron monitor. Sony Tektronix displayed the XP29P X-terminal, supporting the PEX5R1 PEX implementation, as well as a four-model range of low-cost X-terminals, the XP10 series.

...servers, workstations from Hitachi, Fujitsu, Matsushita...

In other hardware news, Hitachi was displaying its latest model in the 2050 G-series of engineering workstations, based on a 25MHz or 33MHz 68040 microprocessor, and supporting Hitachi's own windowing system as well as OSF/Motif 1.1. Both Fujitsu and PFU had on display the DS/90 series of Sparc servers, rebadged from ICL Plc, seven models in the 7000 series. Matsushita Computer showed the 31 MIPS per CPU Solbourne Series 5E/700 for the first time in Japan, targeted at medium-to-large database machine applications. The Kubota Computer stand included both the Titan range of graphics supercomputers (from now defunct Stardent), displayed with Energe, a new rendering software package from Japanese company Namco, CG Project; and the MIPS RS3330/3230 RISC workstation and the RC6260 server. Both Nissho Electronics and Digital Technologies exhibited the Auspex-developed, Fuji Xerox-manufactured transaction processing machine, known respectively as the Argoss 9450 or the NS5000S Network File System server.

...new software, new relationships

At the Fujitsu stand, new software included a Fujitsu-developed graphical user interface builder for window-based application development, and Open Gift, an object generator tool, for use on the DS/90 series; a production planning support system developed with Open Gift was said to have taken under two man-months to develop 2,000 lines of Lisp code with OpenGift used for the user interface. A Japanese version of the Framemaker desktop publishing system was on display at the SRA and Matsushita stands. New relationships in evidence included Sumitomo Corp's distribution tie-up with Opus Systems Inc of Fremont, California for the Sparc-based Personal Mainframe PC add-in series.

NOVELL TO DO NATIVE NETWARE FOR HP RISC

Following its Univel venture with Unix Systems Laboratories Inc, see opposite (and UX No 363), Novell Inc last week underlined its role as an increasingly pivotal player in the latest round of industry realignments, by detailing a raft of joint projects underway with bustling Hewlett-Packard Co. Topping the bill is a development effort which will see Novell's NetWare network operating system implemented on HP's Precision Architecture RISC systems, said by Novell to be the first native implementation of NetWare - as opposed to its portable cousin - for a RISC CPU. The work is due for completion in 1993 and the end product is intended to provide the same functionality as NetWare on the Intel iAPX-86 processor family. HP and Novell have also inked a distribution deal under which HP will market bundled Novell products, including NetWare, on its systems worldwide. Pricing and availability will be announced by the summer of next year. In the meantime, Portable NetWare will be offered running on top of HP's HP-UX Unix implementation on Series 9000/800 servers from the beginning of 1992; prices go from \$2,725 to \$25,000. Portable NetWare has been shipping for HP's proprietary Series 3000 systems since last summer. Also revealed were five other joint projects that the two are working on. Parts of HP's NewWave environment and NetLS, its network licensing tool, will be integrated with NetWare, which, officials claim, will reduce network administration time by up to a third. The two say they'll also continue to collaborate on network printing products and support services, and are investigating the possibility of integrating Novell's MHS messaging environment with HP mail systems using X.400 and X.500 protocols. Other projects, they say, will be announced at the beginning of 1992 in the area of network management, which could lead to HP's OpenView interoperating with Novell's network management stuff. Demonstrating just how important the two think their cosyng-up is, HP president, John Young, and Novell president, Ray Noorda, were both on hand in California to announce the collaboration, which comes days after Novell won Stratus Computer Inc as the latest convert to its cause (UX No 363). Novell is also understood to be wading deeper into the waters of object-oriented technology, and is thought to be preparing to license some of its key networking protocols to Steve Jobs' NeXT Computer Inc for inclusion in release 3.0 of the NeXT Step operating system environment which is due in the first quarter of 1992. Meanwhile, Computerworld believes Novell is also planning to invest some \$2m in Salt Lake City firm Serius Corp, which makes object-oriented software for the Apple Computer Inc Macintosh environment. Sun Microsystems Inc and IBM are already NetWare enthusiasts; now Data General Corp is being touted as one of those that'll be next to beat a path to Provo, Utah.

ORACLE FINALLY SIGNS SCALED-DOWN AGREEMENT WITH NIPPON STEEL...

Oracle Systems Corp, Redwood Shores, California has finally wrapped up its long-gestating agreement with Nippon Steel Corp, but it is very different from the one originally envisaged. Where Nippon Steel was to have put up \$200m all told for a 49% stake in Oracle Japan, and in the form of long-term debt and convertible preferred stock that would have given it 9.8% of Oracle on conversion, it is now putting up only \$80m of subordinated debt plus warrants that if exercised would give it up to 25% of Oracle Japan. The conversion price assumes that Oracle Japan is worth \$400m. The two have also signed what is now a non-exclusive marketing agreement to go after major customers and industries in Japan. The steel company also gets a non-exclusive licence to distribute Oracle products in conjunction with its systems integration services, and Oracle Japan and Nippon Steel will co-operate in the customisation and modification of Oracle products for Japanese users.

...RELEASES SHRINK-WRAPPED DATABASE FOR INTEL/UNIX

Meanwhile Oracle has also announced a shrink-wrapped version of its database software and Case toolset that will run across Intel 80386 and 80486 platforms running Unix. The release complies with the Intel iBCS2 binary compatibility standard, and, the firm claims, will run in a variety of Unix V.3 and V.4 environments. Prices start at \$1,700 - a CD-ROM release is promised for early next year.

ISRAEL IS LEADING LIGHT IN UNISYS BID CONSORTIUM

Latest intelligence on the shadowy consortium being put together to launch a bid for Unisys Corp reveals an Israeli connection. Word out of Tel Aviv is that the Israeli government is particularly concerned that parts of Unisys should survive and thrive because key defence and security agencies of the government are major users of machines from the former Sperry Corp - 1100 series mainframes, presumably, which are also widely used by the US government. Israel of course could not afford to finance a bid of the size needed, and word from that quarter is that both Japanese and European money has been pledged - and, as reported (UX No 363), Digital Equipment Corp provides the consortium with its insight into the computer industry, although DEC's financial involvement is likely to be less than 30%. The deal has been cooking for about three months, and there remain big question marks over whether the consortium, which includes Lord King, former IBM Europe executive Edgar Neufeld, and Professor Kenneth Smith, will ever reach the point where it can make a formal bid - the Israeli connection says that Charterhouse Bank Ltd is now out of the picture, and some observers suggest that the original story was planted in USA Today in order to rally the fainthearts. As for US Defence Secretary Dick Cheney, who, as we revealed, is also involved, his role is simply to ensure that the Paramax Corp defence electronics is successfully floated or passed into safe hands. Israel is ever keen to expand its industrial base and part of the price for its contribution to the effort is expected to be transfer of some of Unisys' manufacturing to Israel.

INTEROPERABILITY IS THE KEY ISSUE SAYS X/OPEN STUDY - AS IT PREPARES TO

ENDORSE OSF DISTRIBUTED COMPUTING SOLUTION
Gone are the GUI wars, bring on the pick n' mix counter. According to X/Open's world survey, interoperability across heterogeneous systems and networks is now the key priority for users. Last year's number one spot, occupied by the graphical user interface, is down to number six, with Microsoft Corp Windows and the Open Software Foundation's Motif emerging as the leading GUIs, it says. Full results will be published next month in X/Open's Open Systems Directive. The standards body says next year should see the first adoption of some of its open systems specifications by international standards organisations such as IEEE and ISO. Next year also sees the launch of its XPG4 portability guide, which will include more from CAE, the common application environment, and likely to specify things like support for international languages. Ironically, now that the group is pulling out, X/Open may also, under pressure from its Xtra user requirements process, be about to endorse the bulk of OSF's distributed computing vision - DCE - in its specification for distributed systems. X/Open says it is not talking to anyone else. X/Open, set to lose OSF, NCR, Prime Computer and Nokia Data from its board of directors at the end of the year for one reason or another, says it hasn't yet lined up anyone to fill the gaps. The problem is that money in the industry is tight, and the reported cost of membership - around \$1m a year - plus the required size and turnover for qualification, rules many potentials, like Santa Cruz Operation, out of the running. A Microsoft Corp or Apple Computer Inc would certainly fit the bill, and be a large feather in its cap, admits X/Open, but there are no indications of anyone of this stature coming on board. It claims not to be worried about the hole left in its wallet by the defections, saying that it has been pulling the purse strings tight in any case.

GLOOMY IBM TO GROW AT SLOWER RATE THAN INDUSTRY IN THE 1990s

After the usual jaunty opening by chairman John Akers, IBM Corp had nothing but gloom to report when it met analysts in New York last week: chief financial officer Frank Metz said that 1991 turnover will "be our greatest disappointment" and gross profits will be hurt by lack of growth in software and hardware revenue, product transitions at the high end, and competitive forces. The personal computer business will be down about 10% to just under \$9,000m, RS/6000 will grow only 60% this year from its very low 1990 base, and only another 50% next year. Biggest shock is that IBM is reconciled to being a slow growth company: it sees long-term revenue growth of about 6% against 7% to 10% a year for the industry as a whole. Metz sees the long term gross margins in the 51% to 53%, lower than in the past, and around the level achieved by Apple Computer Inc.

WITH AIX/ESA, IBM STARTS TO GET SERIOUS ABOUT UNIX ON THE MAINFRAME

by Tim Palmer

IBM Corp is serious about Unix on the mainframe - and with the Messianic zeal of the convert, the company is now trotting out many of the arguments for its position that Amdahl Corp first expressed a dozen years ago when it went public with its plans to create a guested Unix under VM in 1980. Amdahl has of course been delivering native Unix on its mainframes for about five years now, but with AIX/ESA, IBM has just about caught it up.

Amdahl's over-riding justification for supporting Unix all those years ago was that there were so many people coming out of universities with a familiarity with and a love of the operating system that it seemed a little short-sighted not to harness some of that enthusiasm. To be fair, back in 1980, it was by no means concerted company policy to push Unix: indeed there was then only a minority of people within Amdahl that really believed in it, while sceptics were legion. Since then, Unix on the mainframe has built up to a relatively healthy \$300m-a-year business for the \$2,000m-a-year company, and IBM can see glimmerings of a rather bigger business than that for itself with mainframe Unix. After all, European governments increasingly insist on it, the US government is leaning that way, and as Mike Frevert from the Data Systems Division in Kingston, New York observes, Unix is where the growth in applications is to be found these days. And in a decidedly open-minded decision - everyone is expected to be open in every sense at IBM these days - before embarking on the effort to develop AIX/ESA, IBM went out and hired enough university graduates that knew and loved Unix that they made up a third of the development team.

Disparagement

Who is going to want Unix on the mainframe? According to Frevert, IBM's target markets are compute-intensive technical applications, activities that require a large consolidated file server, and environments - such as university and research campuses - requiring a centralised interactive computing resource. As usual, IBM has come so late to a market that for years it derided that it is running the risk to which it exposes itself so often, that of people that wanted the thing but were put off by IBM's disparagement reacting by thinking "well if it is all right after all, even in IBM's book, we'll certainly go that way, but we'll go with the people that believed in it all along." And that is a more serious danger than IBM anticipated, because Frevert comments candidly that the company is finding more interest from large commercial customers than it expected. Moreover, IBM isn't quite there yet: the current plan is to start shipping the product next June, and to have everything promised for the first release available by the end of next year. But once again, IBM is doing all it can to get the message over that it really has changed: Frevert says that with Unix, there can be no question of adding support for new standards only in releases that come out six, 12 or 18 months apart as has been the case with MVS - new functions will have to be bolted on as addenda to the current release as soon as they are implementable, he says.

Vector Facility

So what do you get with AIX/ESA? To start with, a kernel that has been designed to support up to 64-way multiprocessing, which will run single-image on the current biggest machine, the six-processor ES/9000 Model 900. There is this nasty little problem that all IBM's Unices are different, so that at minimum you need to recompile to move applications between AIX PS/2, AIX 3 and AIX/ESA - but IBM recognises the problem and the fact that users want the same environment right through the product line. The base AIX/ESA 1.0 will include the base OSF/1 from the Open Software Foundation, and compliance with Posix 1003.1, the X/Open Portability Guide release 3, Unix System V.3.2, BSD 4.3, X Window 11.4, Motif 1.1, and the Network Computing System 1.5.1.

It runs on all 370 ESA machines as well as ESA 390s, can be run in a PR/SM partition or under VM as well as native, supports the Vector Facility with equivalent performance to MVS or better - that is a promising market because Unix is probably a better host environment for vector processing than MVS. It also supports Extended Storage, the fibre optic serial channel, Escon, the HIPPI High Performance Parallel Interface, and 3088 channel-to-channel connection. Other communications include TCP/IP (of course), the SNMP Agent for network management, which means that it can be controlled in an SNMP network, but cannot be a control point; and the 3172 device that directly connects local area networks to the mainframe channel. IBM long ago stopped being dogmatic about local area network, and the 3172 connects Ethernet and Fibre Distributed Data Interface as well as Token Ring. So how do you attach ASCII terminals to the EBCDIC host? The 3172 is probably the cheapest way: the ASCII terminals, and X-terminals can be interfaced via the local area network. What about the 3174, which comes in versions that now support some ASCII terminals as well as 3270s? Well, yes, that is being looked at, and it may well be a means of getting at Unix through 3270s one day, but there remains the ASCII-to-EBCDIC conversion problem. What about SNA support? "Do you know any Unix programs that use LU 6.2?" asks Mike Frevert rhetorically. Another way to hook up terminals is to use the new channel-attach feature on the RS/6000. It works out kind of expensive if the RS/6000 does nothing else, but it does provide access for terminals directly attached to the RS/6000, to terminals on a local area or a wide area network, provides full SNMP support, and access to X25 networks. If a large number of terminals is to be connected, the RS/6000 route may be the best, since up to 256 can be directly attached using the Outboard Communications System, with buffering code in both the RS/6000 and the mainframe. AIX/ESA supports the Berkeley Fast File System with multi-volume support and mirroring, data spaces greater than 2Gb, 2Gb process size, and data striping and memory mapping. Needless to say, AIX/ESA already brings some baggage with it: there are 200 AIX/370 licensees out there to be taken care of, so AIX/370 binaries and the AIX/370 file system are supported - along with about 100 applications available for the old VM guest.

Gossip

Languages: VS/Fortran, ANSI C and Cobol. That's more or less what to expect in 1.0, but in the works are the Distributed Computing Environment - a toolkit by late next year or early 1993, the full product by mid-1993. OSF 1.1 will include Unix System V compatibility; the Open Systems Interconnection Gossip specifications are to be supported; there will be page printer support and security will go up to B1 from the present C2, achieved via Secureware. X-Window 11.5, Motif 1.2 and network management on the mainframe are coming as well as asynchronous input-output, capacity planning and performance tools, Distributed Management Environment, Parallel Fortran, Vector C, C++, Ada and transaction processing monitors, with a tie between the Transarc Corp product and CICS. How about database? Ah, that is a tangled tale for another day.

FIRST KENDALL SQUARE PARALLEL SUPERCOMPUTER AT MANCHESTER

Henry Burkhardt's Kendall Square Research Inc is planning to unveil its technical- and business-oriented massively parallel machine in the spring. Called the KSR1, the machine is based on custom 64-bit processors, CMOS and has a multiple-instruction-multiple-data architecture, although the system doesn't require message-passing between processors, since it can be programmed like a shared-memory machine. Susan Parrish, vice president of corporate communications for the Waltham, Massachusetts-based company, explains that the machine's memory architecture, called AllCache, delivers the conventional, sequentially-consistent shared memory programming model, but in a MIMD-style parallel system. "The KSR1," she adds, "is the first highly-parallel computer to deliver a mass storage subsystem that is a direct extension of memory;" the AllCache memory capacity ranges from 256Mb to 35Gb, with virtual memory of 1 Tera-byte per process. The machines can be configured with eight to 1,088 processors; these are grouped in multiples of 16, making for a scalable architecture. Input-output bandwidth ranges from 210Mbps to around 15Gbps; RAID disk capacity from 210Gb to 15.3Gb. According to the company, the KSR1's peak performance ranges from 160 MIPS to 21,760 MIPS, 320 to 43,520 MFLOPS. The machine is designed to run under OSF/1-compatible Unix; software tool offerings include Cobol, Fortran and C, and Oracle Systems Corp's Oracle database is expected shortly to be up and running on the machine. For interoperability, the parallel KSR1 supports TCP/IP, Network File System, Token Ring, SNA, Open Systems Interconnection, X25, open VMEbus-based interfaces, High Performance Parallel Interface and Fibre Distributed Data Interface. Kendall Square says the KSR1 is targeted at the technical supercomputing market. The machine's three existing installations include two at US national laboratories and one at Manchester University in the UK. Manchester's machine supports 3,000 users, and will be used as a time-sharing system on a bureau basis for industrial users. The KSR1 costs \$1m for an entry-level configuration, and ranges up to \$30m for a 1,000-processor machine. The date of the formal launch of the KSR1 will be set when the Oracle implementation has been completed or when the start-up company has made its first commercial sale.

IXI SITTING PRETTY WITH TOMEN'S BACKING

Tomen Corp's Tomen Electronics Co, which last month announced that it was taking a stake in IXI Ltd of Cambridge, UK and jointly establishing IXI Japan KK for the support of its Japanese OEM business, has expanded on its new relationships. In the two and a half years since its initial tie-up with IXI, Tomen has established 10 OEM vendor relationships, with companies including NEC Corp, IBM Japan, Kubota, Sanyo Electric, Omron, Matsushita and Nippon Unisys; Tomen expects that with release of X.desktop 3.0 in its Japanese version, and a Desktterm terminal emulator that enables the addition of OSF/Motif graphical user interfaces, an additional five companies will sign on for the IXI products. Atsushita Suzuki, now non-executive director of IXI, attributes Tomen's relative success in Japan to the fact that it beat rival products such as Visix Software Inc's Looking Glass to the Japanese market, was faster out with a Japanese version (Japanised by Unix specialist Astec) and gained the early support of major vendors. Looking Glass is distributed in Japan by Science Research Associates, and is available for both Sparcstations and Sony News workstations. Japanisation of Looking Glass was a bigger task than doing X.Desktop, according to Visix's director of international sales, Mark Steffler, but he said SRA would make major announcements in the near future.

IBM WINS BIG RS/6000

FACILITIES DEAL AT QUOTRON

IBM Corp has picked up an attractive and highly visible facilities management contract from Citicorp's floundering Quotron Systems Inc financial information services company and direct competitor for that side of Reuters Holdings Plc's business. Under a five-year contract that has not been announced by either side, the Wall Street Journal understands that Quotron will end its development and maintenance of computer terminals and hand the business over to IBM, and Quotron will transfer its software to IBM's RS/6000 Unix servers supporting PS/2s as terminals. IBM will also transfer all Quotron traffic to its Information Network and will assume responsibility for installation, service and support for Quotron customers. In the third quarter, Citicorp wrote down its investment in Quotron, taking a \$400m charge to write down the value of Quotron hardware. It has invested over \$1,000m in the company, but has never seen a profit from it. The move gives IBM direct access to potentially lucrative customers on Wall Street, a position it originally sought by forming a joint venture, International MarketNet, with Merrill Lynch & Co, which collapsed after software development problems.

SEQUENT UNDER FIRE, BUT PLANS COUNTER-ATTACK IN JANUARY

Sequent Computer Systems Inc has recently been on the receiving end of a pretty vicious campaign from some who would have the firm teetering on the edge of Chapter 11 bankruptcy (UX No 360). A clutch of enquiries to this office alone testify to the extent of belief. The allegations, thought to have originated in the UK, have been denied equally as forcefully by Sequent, which says there is no truth to them. It believes competitors, worried about losing accounts to its Symmetry series of Intel Corp 80486-based commercial multi-processing systems, have taken up the firm's last two loss-making quarters as a stick with which to beat the jungle drum. Sequent says its fourth quarter results, due on January 21st, will show a return to profit, and it plans to announce systems with 50MHz versions of Intel's 80486 the following day (UX No 361), also the first day of the UniForum show in San Francisco, which runs from 22nd to 24th. In the UK, Sequent says it is now hiring staff again, following the job cuts which followed its second quarter loss back in July (UX No 341), the latest recruit being UK marketing director, Mark Miller, who comes across from Santa Cruz Operation Inc, where he was system marketing manager, after being made "an offer he couldn't refuse."

SCO READIES V.3.4 FOR FEB, BUT NO SVR4

As far as SCO's other operating system products are concerned - see front page - the firm will be announcing SCO Unix release V.3.4 next February. This is not an SVR4 implementation, nor will there ever be one, according to Hill. Primarily, he says, because Unix Systems Labs pulled together so much in its SVR4 release that the stuff is too big, for SCO as a player in the small computer system business, to productise. In any case, it maintains, recent homework shows many large European corporate users in favour of OSF/1-based system software, whilst governments, it believes, care little as long as what they get is X/Open conformant.

COGNOS FORMS A NEW DESKTOP SOFTWARE DIVISION

Cognos Inc last week announced the formation of a new Desktop Software Division to handle the products it previewed at Cognition '91 in the summer - the desktop executive information system for Windows 3 and Hewlett-Packard Co's NewWave, now called PowerPlay - which will now support the Apple Macintosh too, and the SQL query tool for Windows, which is now called Impromptu. Dun & Bradstreet Software will incorporate PowerPlay in its upcoming client-server applications. Cognos has become an Alliance Partner for Lotus Development Corp Notes and future versions of PowerPlay will tie in with Notes. Digital Equipment Corp will distribute PowerPlay and Impromptu and Ross Systems Inc will bundle it with its financial applications software for DEC VAX minicomputers.

unigram·x

The Weekly information newsletter for the UNIX @ community worldwide

USL last week said it sold a record 1.2 million units this year equalling a 35% increase over 1990.

Rumours are rife about goings-on at Bull: insiders claim the French have split Zenith's European operation off from its American base and now have Zenith Europe reporting directly to Bull. Thinking is they want to fatten up the US operation, which is reportedly due to lose something in the neighborhood of \$200m this year, for a fire sale and keep Europe as a low-end market organisation.

And ICL is now strongly hinting that it will enter the desktop Unix market next year, running Unix V.4 on its DRS 3000 Intel PC range, where previously its focus for Intel Unix has been small multi-user servers: ICL is reportedly responsible for the Sparc version of the Novell/Unix Software Labs Destiny product (see front page), which sounds like more bad news for Solaris.

Frequent flyers coming back from Japan say some of the Japanese companies are bracing to report the unthinkable: operating losses.

The Univel people last week were shy of discussing their upcoming product but couldn't help but throw a few buzzwords around: Stuff like "ideal applications and database engine," workgroup-oriented, keyed to multimedia, heavy on interoperability, shared resources, messaging. Now we'll see how they interpret them.

IMI plc last week duly submitted a formal offering for Redwood International Ltd, holding company for Uniplex Software, for an initial aggregate consideration of £15m, plus additional payments dependent on future profit.

UK, Milton Keynes firm, Pericom Software Inc's team-x software, which allows character-based, to run on X-Windows terminals, is to be bundled with Oslo, Norway-based Tandberg Data's range of X-terminals.

Datrontech Ltd, Aldershot, Hants, is to distribute Fountain Valley, California-based Kingston Technology Corp's memory board and storage system products for Unix workstations running CAD/CAM applications.

UK, Manchester-based Northern Software Consultants Ltd is offering a new tool for converting IBM MVS/VSE or ICL VME Cobol applications into software which, it claims, will run on any Unix box.

Uniform and EurOpen are putting together OpenForum 92, touted as the first pan-European open systems exhibit and conference and scheduled for November 25-27 of next year in Utrecht, Holland.

Venture capitalist extraordinaire Ben Rosen, of Compaq and Lotus fame, has left the Borland board.

Sources say Microsoft is pinching pennies for a war chest to fund its 1992 battle campaigns against OS/2 and Univel: oddly Solaris isn't mentioned.

Ross Perot has resigned from the board of NeXT Inc, leaving only Steve Jobs and the representative of largest outside shareholder Canon Inc as directors, although Jobs says he intends to expand the board early next year: Perot, who holds 11.5% of the NeXT equity, is said by NeXT to want to devote more time to his own Perot Systems Corp firm.

Qume Corp's Zentec unit is taking over the manufacture and marketing of Northwest Digital Systems Inc's X-Window products, leaving Northwest a role in new product development and enhancements: under the name Zentec X Station, initial products will be the XT.15 and XT.19 monochrome X-terminal based on NDS X10 logic boards; behind these will be a new series of high performance colour X terminals using Northwest Developments' X20 board based on the 40MHz TI34020.

Motorola Computer Group says that system-level products based upon the next-generation 88110 RISC could be announced as early as next January, though products are unlikely to become available in the UK before the end of next year: the commercial systems side of the group claims that it is the sixth largest supplier of multi-user Unix systems, and has between 3,000 and 4,000 boxes installed in the UK - it plans to double its present roster of 50 or so resellers over the coming year.

Correction: Sun Microsystems Inc says that although it has in the past bought disk drives from IBM, it has no formal OEM agreement with Big Blue for these products (UX No 363).

TriGem Computer Corp of Taiwan has given up on marketing of its SLT-100 Sparc-based Unix and handed it over to San Diego-based RDI Computer Corp, which has renamed it the BriteLite LC for low cost, dressed it up to look like its other machines, and offers it at \$8,000 with 20MHz chip, 215Mb disk, 640 by 480 paperwhite LCD and Solaris 1.0 Unix.

Computer Products Inc, Boca Raton, Florida power supply manufacturer, is looking to diversify and has reached agreement to acquire Madison, Wisconsin-based Heurikon Corp, a manufacturer of VMEbus single board computers for real-time applications. Annual sales at Computer Products are running at \$110m, Heurikon is doing \$22m. Terms of the acquisition were not disclosed.

IBM Corp? Best information is that IBM did \$1,000m in RS/6000 sales last year, which means about \$1,600m this year and the forecast 50% rise next year would take it to \$2,400m, which would mean that in 1992, it was still doing less in Unix workstations than the \$3,221m Sun Microsystems Inc did in its 1990-91 fiscal year, which ended June 30.

Rubbing salt into IBM Corp's wounds, Sun Microsystems Inc shares have been a lively and rising market following a conference call with analysts on Tuesday in which it indicated that it was very pleased with the tone of business so far in the current quarter, two analysts told Dow Jones Professional Investor Report: the call was particularly surprising in that in order to attempt to avoid those meretricious shareholder class action suits, the company has made it a practice never to comment on its business prospects; Sun said that US business to date had been especially strong, Japanese business remained robust, although growth of European business is slowing, with the UK difficult but in line with expectations, while France has been surprisingly weak, the firm said.

Digital Equipment Corp has announced plans to enter the former Soviet Union, starting in Russia and the Ukraine and later moving into neighbouring republics, with sales and service offices and an education centre. Contracts have already been signed with several customers for projects in the automotive, aviation, hotel, finance and natural resources areas. DEC has identified nearly 50 projects for which proposals are under consideration.

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Solbourne cut the price on its S4000 server last week so that it gets to say it costs \$2,995 or \$117 a MIPS, the lowest priced Sparc system on the market at the moment, at least one offering 25.5 MIPS and 13.3 Sparcmarks performance. The \$3,000 price is for a 8MB diskless configuration, a 50% reduction. An 8MB S4000 with 200MB disk and 19-inch monochrome screen is down 47% to \$5,000. The S4000DX has been reduced between 23% and 36%. Solbourne/US is taking its cues from its European operation which has already slashed its prices.

Reports have Sun Microsystems beta testing its Sparcstation 3 in February and shipping next summer: our informants claim there are two sizes of memory cache but you have to buy the larger one to get the performance.

San Jose-based multiprocessor Unix systems builder Arix Corp, trading under Chapter 11 bankruptcy protection, reports that it has reached agreement on a reorganisation plan with the creditors' committee of its Arix Computer Corp subsidiary under which they will receive one share of common stock of the parent company for each 87.5 cents of debt. Arix expects to issue about 15.5m new shares to pay off \$13.5m of debt.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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Registered at the Post Office as a Newspaper



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unigram · X



The weekly information newsletter for the UNIX ® community worldwide

London, December 23 1991 - January 3 1992

Number 365

NEW YEAR BEGINS WITH OBJECT-ORIENTED ROLLOUTS

Westborough, Massachusetts-based HyperDesk Corp, the Data General Corp spin-off and object management pioneer which has spent the better part of this year holding its own against the likes of Sun Microsystems Inc and Hewlett-Packard Co, is promising to be first out of the starting blocks with a product based upon the Object Management Group's hard-won, patched-together common Object Request Broker standard. HyperDesk of course was one of the companies whose technology, in concert with its partner DEC's, was merged with those of Sun, HP, NCR Corp and Object Design Inc to create the ORB (UX No 358). Next month, at Uniforum in San Francisco, the company is reportedly slated to announce its Distributed Object Management System (DOMS), a tools and services kit for building applications that can be distributed across disparate Unix clients and servers as well as MS-DOS platforms (UX No 360). DOMS will doubtless be touted as a vehicle for achieving that heady but illusive feature which is expected to dominate 1992's industry proceedings, interoperability (UX No 364). DOMS is expected to provide application developers with ready object access to application programming interfaces, remote procedure calls, network protocols and operating systems. In addition, it is meant to be used to define, build, modify and store objects. DOMS, which is believed to support both Windows and Motif, is distinct from the joint HP/Sun contribution: it is dynamically constructed, meaning applications can be created or modified at run-time and will not need to be re-compiled. It will also support relational and object-oriented databases. Tools include a definition language to create objects. Services will include an object database with repositories and class libraries for object storage, a Kerberos-based authentication service for user validation and a location service to track objects. DOMS is expected to be licensed to OEMs, independent software vendors, value-added resellers, integrators and end-users when it becomes available in February, priced around \$2,000 per-user. A run-time version should follow in the summer, priced at around \$5,000 a user. Although reportedly wanting to hear only the sound of its own thunder at the show, the company will have alongside it, UK, Cambridge-based IXI Ltd, which is expected to be one of the first HyperDesk users out of the hat. IXI will be demonstrating the object-oriented version of its X.desktop manager (UX No 335).

NeXT JOINS DESKTOP UNIX BATTLE

Following IBM's licensing, but subsequent lack of further interest in the NeXT Computer Inc's NextStep operating system environment, Steve Jobs has recently been window shopping for other supporters for the proprietary software. Jobs said back at the Unix Expo in November that NextStep was up and running on four architectures in the labs (UX No 358), and now, it is reported, a version for the Intel Corp 80486 is to be publicly unveiled at the NextWorld Expo '92 show in San Francisco on Jan 22. The implementation does not herald a Intel i486 Nextstation from NeXT, rather it is aimed at personal computer clone manufacturers, a number of whom are expected to sign up for the stuff. Not only will this give NeXT wider visibility in the market, but will encourage developers to port to its Motorola Inc-based NextStations, providing much-needed revenue for the firm which, according to Business Week, has yet to finish a quarter in the black and has run through most of the \$133m invested in it by Canon, Ross Perot and Jobs himself (UX No 360). Thought to be called NextPC, the Intel version is likely to include most of the functionality planned for release 3.0 of the vanilla NextStep, due next quarter (UX No 364). NextStep 3.0 will include Novell NetWare support, Macintosh EtherTalk and SQL Server. SQL support is part of a database kit now in testing. 80486 boxes will need high-resolution graphics capability and a minimum of 4Mb RAM to run NextPC.

NOW FEDS SNIFF AROUND IBM-APPLE

Well you might ask why we haven't heard more of late from our dynamic duo IBM and Apple. The fault, it seems, lies with the US Federal Trade Commission. Sometime between October 2 when the pair made their intentions formal, and a month later - the time limit set for the government to stick its nose in - the FTC started asking for more information - stuff like their business plans. It also started asking competitors what they thought about the whole thing. This, according to IBM corporate spokesman Paul Bergevin, cornered at an IBM Christmas party in New York last week, is why Taligent and Kalieda et al haven't taken formal shape even though Apple and IBM are working together in the absence of any official sanction.

SPARCSTATION 3

TAGGED AT 80 SPECmarks

Sun Microsystems Inc is still playing its Sparcstation 3 cards close to the vest, even though it's going around non-disclosing to potential customers. Seems it's got a SuperSparc chip - aka Texas Instruments' Viking - doing 50MHz, or around 80 SPECmarks, three times or better what a Sparcstation 2 will do, which is what the Mountain View, California-based workstation manufacturer promised. It also claims the superscalar technology used is truly scalable, an important factor that has met with some scepticism of late, and will do 100MHz parts or increments in between.

SEIKO EPSON TO DESIGN, MAKE MIPS ACE WORKSTATIONS IN US

Seiko Epson Co, which has been trying to make a living out of clones of NEC Corp's market-dominating PC-9801 family of personal computers, is to diversify its computer interests with the introduction of a family of workstations built around the MIPS Computer Systems Inc R4000 RISC chip and compliant with the Advanced Computing Environment initiative's Advanced RISC Computing architecture. The company plans to offer several models, including both desktop and deskside machines, and is aiming to introduce them first in the US and Europe, probably in the spring, following up with a Japanese launch later in the year when the Japanese software is available. The workstations are being designed and developed by the Epson Technology Centre in California and will be manufactured at the company's factory in Portland, Oregon. The move is seen in part as a response to declining US Equity sales.

Unigram.X would like to wish all subscribers a happy Christmas and a successful New Year. The next edition will be No 366, week ending 10th January 1992.



DESKTOP UNIX CONTENDERS JOCKEY FOR POSITIONS

NeXT's move, see front page, propels Jobs' company into Unix's next strategic battleground - the desktop environment. Shrink-wrapped, integrated, cut down, modularised and user friendly versions of Unix for the new breed of high-performance, low-cost desktop machines now coming to market are mounts that will spearhead the industry's charge into a new swathe of territory over the coming year. Winners will be those who can persuade the greatest number of software houses to port applications to their respective environments. Lining up alongside NextStep to do battle are Unix Systems Labs Inc's Destiny, SunSoft Inc's Solaris and the ACE initiative's OSF/1-based Open Desktop from DEC, all due around the middle of next year. SCO already has its AT&T Unix-based Open Desktop-on-Intel bundle out there, which is making slow progress at the very low-end of the market, though it has no plans to include compatibility with Unix SVR4. USL and Sun, traditional allies, will be going head-to-head with Destiny and Solaris: both are based upon SVR4 and both are aimed at the Intel and Sparc Unix markets. SunSoft's Bill Larson reckons that as a product, the USL stuff is still two years away, and believes the Solaris-on-Intel play will double Sun's existing 250,000 Sparc users that are expected to move across to Solaris-on-Sparc. Solaris for Intel, which will be delivered 90 days after the Sparc version, already has the likes of AST Research Inc, CompuAdd, Dell Computer Corp and Toshiba backing it. However, Sparc system supplier ICL is thought to be undertaking a Sparc version of Destiny for USL (UX No 364) - much in the same way that it did the original reference port of Unix V.4 for Sparc - which could mean bad news for Solaris, although ICL is committed via its technology agreement with SunSoft, to making its Sparc system software compatible with SunSoft's offerings. The ACE initiative, which has stoked up the desktop Unix battle throughout the year, seems to be losing steam rapidly. Its gambit was to have been an SCO-developed OSF/1-Ultrix-Open Desktop combination for both its MIPS Computer Systems and Intel hardware architectures, due out at the same time as Microsoft's Mach-based NT environment, also for ACE. However, DEC now appears to have taken over responsibility for an OSF/1-Ultrix-SVR4-Open Desktop product that will only figure on the MIPS RISC (UX No 364). SCO is supposed to be doing the same for ACE's Intel platforms, though when and if it arrives, and what it will look like, is still very much up in the air. Further out is the object-oriented PowerOpen environment which will come from IBM and Apple's collaboration, although that's not due for another couple of years. The various desktop managers are also expected to become more prominent in this arena as what actually goes on behind what the desktop user sees becomes less important.

Uniform

Next month's UniForum show in San Francisco is tipped as the place where riders will begin to declare product. Industry-watchers agree that desktop Unix(s) will be good for the advancement of the operating system as a whole: Unix on the desktop will be more visible, and it should lose some of both its perceived and real unfriendliness. On a cautionary note, several manufacturers contacted said they weren't really seeing pressure from the marketplace - from customers - for these types of products, but that the impetus is mostly, if not wholly, coming from the manufacturing camps.

SUN HAS NEW CONNECTIVITY OPTIONS

SunConnect has released a 4- or 16MB per-second SunLink Token Ring Interface/SBus card, bringing token ring network connectivity to Sparc systems. The card allows Open Network Computing applications and services to be shared with other systems in token ring networks. The board includes a TCP/IP driver, network monitoring facilities and uses Texas Instruments' TMS 380 token ring chip set. It is priced at \$1,200, now. SunConnect has also released the latest version of its SunLink SNA 3270 communications gateway, bringing token ring support to its IBM mainframe connectivity software. It includes an SNA communication gateway for managing programme-to-programme communication, document interchange services and an application programming interface for LU6.2 protocols. It's priced at \$3,000.

USL FORMS NINE BUSINESS UNITS FOR UNIX DRIVE

Now that it has completed its first round of equity investment and spun out some strategic initiatives into the joint venture with Novell Inc (UX No 362), Unix System Laboratories Inc is looking to get down to the serious business of shifting units. Following the current fashion for restructuring, it is reorganising its management, marketing and development operations into nine business units - each will operate as a distinct profit centre. Mike DeFazio is overseeing the transition. The marketing and research and development divisions - headed-up respectively by Stan Dolberg and Dennis Wise - will provide services to each of the units. A new worldwide sales management team - comprising vice president Joel Moss, USL Europe managing director Bob Mitze and USL Pacific managing director James Clark - will coordinate USL's marketing efforts. The firm has US sales offices in Boston, Houston, San Jose and Summit (New Jersey). Its worldwide efforts are handled out of London, Tokyo, Seoul, Sydney, New Dehli and Tapei. The Unix System V software organisation becomes an operating system business group with three units. A core operating system division is headed by Patrick Smyth, and will provide base Unix operating system technology for all markets. The low-end Unix division will concentrate on system software for desktop and server markets, and is to operate under Biff Traber. A high-end and real-time unit, headed by Jennie Brown, is to focus on corporate server, mainframe, real-time and micro-kernel Unix markets. Don McGovern, currently manager of the desktop Unix effort, keeps his job until the Destiny desktop is out of the door, sometime around mid-1992. The open solutions software organisation, formerly headed by Joel Applebaum, who has moved across to take charge of Univel, becomes the distributed computing group. Its three units will be managed by Andy Huffman. A transaction systems division under Howard Elder will work with Tuxedo. An open networking platform, headed by Wolf Bauer, is to work with USL's OSI stuff, and the distributed computing planning and architecture division will work with customers to develop new networking products and with Unix International to make available the reference technologies in UI's Atlas distributed computing framework. Other new units created are services and technical support, headed by Hoot Gibson, publishing and documentation, under the charge of Bill Klinger, and a programming systems operation which is to be set up next year to work with C++ and C language resellers and launch a new software tools which will be run by Wayne Hunt.

IBM OFFERS DEVELOPERS FULL OS/2 2.0 PROGRAMS AT \$750

IBM Corp still needs to rustle up as much support as it possibly can for still gestating OS/2 2.0 and is inviting application developers to sign up for an Early Application Development Programme for \$750. They get the right to install, pre-release code of OS/2 Version 2.0 - which includes the Workplace Shell and the ability to run "most" Windows applications - and four development tools on up to 10 processors. The tools are Developer's Toolkit; C Set/2 - 32-bit OS/2 C compiler and 32-bit OS/2 Presentation Manager debugger; Workframe/2 Version 1.0, a configurable, project-oriented application-development environment into which developers can integrate their "favourite" tools; and a Microsoft Windows-to-OS/2 migration kit - using Micrografx Inc's Mirrors to enable migration of application programs to OS/2 and its Oasis for moving printer presentation drivers across. They will also get one licence - a complete package of media and documentation - for the first generally available version of OS/2 Version 2.0 and the development tools apart from the Windows migration kit. Participants can also install pre-release code of the LAN Requester and the NetWare Requester on up to 10 machines - but quantities are limited and will be provided on a first-come, first-served basis. If any code is improved before March 1, the new version will be provided at no additional charge; all requests to participate must be in by March 1. The licence to use and make 10 copies of the pre-release code and documentation expires 60 days after OS/2 2.0 general availability. Extended Services for OS/2 and LAN Server 2.0 will be added later.

BULL DEBUTS SERVERS AT UNIFORM

Bull will announce two new DPX/2 server models at UniForum next month, the 270 and 380. Both will run an OSF/1ified version of BOX, a derivative of System V 3.2. Bull isn't planning a straight OSF/1 until mid 1992, when it comes out with a new hardware line. The new DPX/2 boxes are intended either as workgroup servers or front and back-end processors for the company's proprietary systems. They have been gussied up for distributed computing and will support BOS/TP, Bull's on-line TP monitor; Distributed Data Access software; OpenTeam, its Lan Manager for integrating PCs, and its Distributed Computing Facility (DCF), Bull's implementation of DCE.

ICL PREVIEWES GRAPHICS LIBRARY FOR BUSINESS X USERS

ICL has begun previewing graphics technology that it has been working on with Fujitsu's artificial intelligence department since 1988. ICL Xg is an object-oriented graphics toolkit for X-Windows which has resulted from a collaboration between Fujitsu and ICL's Dublin-based software development centre: it was shown both at the recent Unix Fair in Tokyo earlier this month, and last week to a party of journalists visiting the Dublin centre. The toolkit, which ICL will show at UniForum and officially introduced in March 1992, will be pushed as a standard toolkit for commercial developers producing graphical user interfaces under X, still a highly complex task. While toolkits exist for "dialog" interfaces such as Open Look and Motif, few toolkits exist for the production of graphical data (exceptions include DEC's GoBE, InterViews from Stanford University and DataViews from VI Corp), the alternative being to use raw Xlib. The Xg toolkit includes interfaces to linked C and C++ libraries and a distributed server. A set of objects includes the traditional lines, circle and bitmaps, but extends them to higher-level, specialised objects such as trees, graphs, tables and networks. For instance, container objects can include any number of other graphics objects contained within them; there are also bar graph objects (using pseudo 3D - full 3D is on the way), line graph object, animation objects (a series of bit-maps run in sequence) and table objects for charts. Objects can be directly manipulated via mouse, including selection, dragging, resizing and rescaling. ICL has already used early versions of the software at customers such as Cathay Pacific in Hong Kong, and the National Westminster Bank, both ICL DecisionPower users. Cost in the UK will be £2,000 per user for a development system and £20 per user runtime. It will run on ICL Sparc and Intel systems running V.4, and on Sun workstations.

CONSORTIUM READIES WINDOWS STANDARDS FOR CHARACTER TERMINALS

The AlphaWindows series of display terminals, which hopes to set standards for windowing/mouse operation on alphanumeric display terminals, will be shown for the first time at UniForum in San Francisco next month. The Alpha effort, proposed by DataQuest in May this year, but under negotiation long before that (UX No 321), is backed by the Display Industry Association, previously known as the International Association of Character Windowing Standards, which now includes 16 members: AT&T, Applied Digital Data Systems, Cumulus Technology, DEC, Edisa Informatica, Esprit Systems Inc, Intel Technology, JSB Computer Systems, Liberty Electronics, Link Technologies, Microterm, Microvitec, Nutec Informatica SA, Sherwood, Structured Software Solutions, Summitpointe Technologies, Systech Corporation, Televideo Systems Inc, Santa Cruz Operation and Wyse Technology. The terminals offer a "near painless upgrade" from single session display terminals to multiple windows, icons, menus and buttons, with no modifications to existing software. Software house JSB says it has adapted its Mascot user interface technology to suit the terminal, and is working with SCO on a window manager and session link for SCO Unix on Intel. AT&T, Cumulus, Edisa, Link, Microvitec and Televideo will be showing prototype terminals at UniForum.

UNISYS FOLLOWS NCR, STANDARDISES ON INTEL, RENEWS SEQUENT TIES

Unisys Corp has decided to follow AT&T Co's NCR Corp in standardising its Unix machines and personal computers on the Intel Corp iAPX-86 family, and has also revived its moribund OEM agreement with Sequent Computer Systems Corp, taking Sequent's iAPX-86-based Symmetry multiprocessors as its top-end U 6000 series machines. The move is a disappointment for Motorola Inc - Unisys had been flirting with using the 88000 RISC and has a machine that uses it out in Japan. By making the commitment, it has won a privileged relationship with Intel, which will listen to Unisys' input on architectures for future members of the family, and will give the company early access to its forthcoming designs. Unisys and Intel will mutually support key areas of interest in software development, such as advanced implementations of Unix System V.4, the Intel Application Binary Interface standards activities, advanced distributed software and multiprocessor hardware implementations. The 1989 agreement with Sequent is extended until January 1994: it was a three-year pact with two optional one-year extensions.

RIVAL UNIX CLUBS AGREE SINGLE MEANS OF ENCODING JAPANESE

The Open Software Foundation, Unix International and Unix System Laboratories Pacific have agreed to support the EUC Extended Unix Code for Japanese language, enhancing prospects for portability and interoperability of local software between OSF/1 and Unix System V.4. The Japanese state-sponsored Sigma Project used the EUC code. The common definition includes support for Japanese standard code sets established in 1990, JIS X0212 Supplemental Kanji, JIS X0208 Kanji, and JIS X0201 one-byte Kana. The OSF/1 1.1 release, due in the first quarter, will support it.

INTEGRAL LAUNCHES POPLOG IN USSR

Integral Solutions Ltd is launching its Poplog multi-language development environment for artificial intelligence and rapid prototyping in the former Soviet Union via Moldavan-based Soviet distributor PCB/ASU. The Basingstoke, Hampshire-based firm has announced that Poplog will run on the Soviet-built workstation Sapsan Oversun Besta. Besta is the Soviets' first Unix workstation and is produced in Moscow by Oversun, a joint venture of the Soviet Academy of Sciences, and Zil, better known as the manufacturer of Zil limousines. Integral's Dr Alan Montgomery says that the Besta is roughly equivalent to a Sun-3 workstation. It uses the Motorola M68030 microprocessor and runs Unix V.4. It has a standard VMEbus with SCSI, SA 470, RS232 and Centronics parallel interfaces. Oversun licenses the X-Windows system and the Oracle and Informix databases. Integral's Clark Morton said doing Poplog for the Besta was easy and took three weeks. The PCB/ASU contract is worth £20,000. Integral is participating in a European Community-backed Tempus project organised by Sussex University, which aims to improve knowledge-based system skills in Bulgaria. Poplog is marketed under licence from the University of Sussex. The project will use the Poplog multi-language development environment to develop a range of university-level courses on knowledge-based systems. The projected collaboration stems from existing links between British institutions: Sussex University, Kingston Polytechnic, Brighton Polytechnic, the University of Amsterdam, Milan-based independent research laboratory Dida*Lab, and in Bulgaria: the University of Sofia and Bulgarian Academy of Sciences. The three year project has been organised under Tempus, a scheme funded European Community, which encourages collaboration between academic and commercial institutions in the Community and Eastern European academic institutions. First year grants are £67,000 and £133,000, the former to finance travel for Bulgarian academics, the latter for equipment and course development.

IBM, OBJECTS, A DATABASE FOR UNIX AND THE MYSTERY OF THE DOGS THAT ARE NOT BARKING

by Tim Palmer

IBM Corp recently took a party of UK journalists to Dallas and Austin in an effort to get across the message that the company really does believe in open systems and to demonstrate what it is doing to back up its proclaimed aim to propel the RS/6000 and the company into the number one or number two spot in the Unix market within the next two or three years. On these occasions, there always seems to be a dog that doesn't bark, a dog indeed whose silence is so manifest that it doesn't take a Sherlock Holmes to spot that there is something afoot, Watson. On this occasion the mute mutt was the one that should occupy the kennel labelled database.

Reinvent the wheel

Whatever the speaker and whatever the ostensible topic, the question of what database was to be used cried out for an answer, but each time it was raised, it was met with dissembling and disclaiming of responsibility. The answer for the present is simple enough - if you want a relational database, be it on the mainframe or the workstation, the recommendation is that you take your pick from Oracle, Ingres, Sybase or Informix. Which is fair enough: all are solid, heavily tested products, each has its attractions for different applications and it makes absolutely no sense to reinvent the wheel, especially at the dawn of the object-oriented programming age where it is certain that all the rules the computer industry has learned to live by will be overturned. Because reinventing the wheel is what the industry has assiduously been doing for the past 30 years: the prospect held out by object oriented programming is that whatever routine your application requires, you will be able to go out and buy it off the shelf as a fully-tested, ready to go object which, if it is written to the standards that the Object Management Group intends to lay down, will mesh seamlessly with all the other objects that you buy from sundry other sources, so that the process of programming will be reduced largely to linking objects - and the biggest software fortunes will accrue to the companies that succeed in developing the most widely-used objects. At the dawn of the object age, it seems highly likely that IBM's own AD/Cycle applications development schema and tools will scarcely be in place and solid before they become obsolete. It is noteworthy that when a question about AD/Cycle followed immediately upon a discussion of the impact of object-oriented programming on software, the IBMer conducting the session, who clearly has his own ideas about where the industry has to go, joined in the laughter that greeted mention of AD/Cycle. If software engineering remains a major activity at the user site, the object revolution will have failed, and all the benefits that it promises will be lost.

Visionaries

The caveat has to be entered that object-oriented programming doesn't come free: there is an overhead, significant or substantial according to your point of view, but the potential benefits are so great and the cost of hardware is falling so fast that it is hard to imagine that it will prove an insuperable obstacle... and there's another dog that has not barked in a very long time. A decade ago, talk among the visionaries was all about object-oriented hardware architectures, with the failed Intel Corp iAPX-432 chip set held up as the paradigm, a role that would have been held by IBM's own System/38 had the company not steadfastly refused to discuss the 38 in the context of object orientation. In the context of the developments outlined above, it is hard not to come to the conclusion that the world needs another undifferentiated relational database management system like a fish needs AD/Cycle.

IBM has made it clear that database is so important that it needs to have its own database for Unix. It was made clear that there will be a single IBM database for all IBM's Unix offerings - AIX/ESA on the mainframe, AIX 3 on the RS/6000, AIX PS/2. So what is it doing? The answer is that it appears to be deriving a Unix relational database from the Database Manager from OS/2. One speaker hedged on that by saying that it had been one of the options considered, another said categorically that the OS/2 database would run under AIX - and would be offered as a product to run on alien machines as well. But he said that it would not run under AIX/ESA. The IBM database for Unix would conform to ANSI SQL and Federal Information Processing Standards. As to putting a date on it, well it won't appear next year. All of which makes it sound like a leftover from the old IBM: by the time it arrives, if IBM has been at all successful with the RS/6000, there will be so much investment tied up in existing relational database management systems that the company will have a very hard time getting a new one accepted, even if it does bundle it with the operating system. And if it is greeted with a yawn by the market, the investment won't be forthcoming to keep it up to speed. The OS/2 Database Manager already looks like a product that few users really need, making it an extremely inauspicious jumping-off point for a Unix database. But in that case, what is IBM to do? Well it seems that it would hate to be reminded of the fact, but it does already have an object-oriented database management system, one that has been tried and tested over 10 years now: it's the nameless one that comes bundled with the AS/400.

Lip service

And given all IBM's lip service to hooks, links and commonality between its proprietary and its open systems, it would seem that the AS/400 database would be the ideal starting point for development of a database for AIX. Those IBMers that dislike the IBM world being polluted by open systems will raise the problem of ASCII and EBCDIC - cited as a reason why IBM would go to third parties for an office system for Unix rather than extend its own OfficeVision into the Unix world (other IBMers say OfficeVision for AIX is, notwithstanding, highly likely). IBM mainframes and AS/400s use the Extended Binary Coded Decimal Interchange Code where almost the entire rest of the world - including the Unix fraternity - uses the American Standard Code for Information Interchange. It is pretty clear that one of the first objects all applications in the IBM world are going to need to call is the ASCII-to-EBCDIC converter, which clearly should be a chip installed in every IBM proprietary machine - and it is equally clear that IBM needs to conduct a fundamental rethink of its AIX database plans and take another close look at the database in the AS/400.

ORACLE CORP STRETCHES DELIVERY CYCLE OF ITS APPLICATIONS-RELATED SOFTWARE

Oracle Corp is stretching the delivery cycle of its applications-related software in its efforts to put earlier quality problems behind it. Until George Koch arrived as senior vice-president of Oracle's applications division last spring, the products were on a six-month delivery cycle, but Koch has put them on an annual cycle, which he says is more appropriate for this particular market. New releases are now planned for the middle of next year, rather than this past September as originally intended. Koch added that all development from now on is being done in Oracle CASE so that value-added resellers and customers can enhance the applications and integrate them with their own and should also boost Oracle's software engineering revenues.

VI CORP, IMPERIAL SOFTWARE TEAM ON REAL-TIME FOR MOTIF

VI Corp, Northampton, Massachusetts has teamed up with Imperial Software Technology Ltd, Reading, UK to create DVX-Designer, a program designed to enable users to develop applications that require real-time data display inside a Motif interface, and claims that it is the only product on the market to integrate real-time data display with Motif. DVX-Designer joins VI's DataViews family of graphical interface development tools and combines the dynamic graphics of DataViews with X-Designer, a Motif interface builder that generates C code and UIL and X resources files, and shortens the time needed to implement Motif and X-Window System interfaces. DataViews provides the real-time, dynamic data display and X-Designer aids generation of code for Motif widget creation and management. The dialogues are always active as the hierarchy is edited, providing the developer with an instant picture of the state of the interface. Written in C, DataViews is claimed to be portable across all major Unix systems and there is also a VMS version. DVX-Designer is available for \$1,500 as an option when bought with DV-Tools.

RETIX OFFERS FULL OSI SUITE FOR UNIX SVR4

Santa Monica, California-based Retix Inc has come out with what it describes as a complete implementation of the Open Systems Interconnection model for Unix System V.4. It includes a full suite of Open Systems Interconnection applications and core stack products, the company says. Applications include X400 electronic mail, X500 Directory Services, File Transfer, Access and Management and Virtual Terminal, and the core stack supports all the industry-standard application programming interfaces that have been endorsed by Unix International Inc, including Transport Library Interface, Data Link Provider Interface and the new programming interface, ACSE/Presentation Library Interface, Retix said. The core stack uses a kernel-based Streams implementation of APLI, Presentation and Session technology developed by Unix System Laboratories Inc, and the offering is the result of an alliance between Retix and Unix Labs agreed in May 1990. The complete set of Unix System V.4 products includes MH-440 1984 X400 Message Handling System; MP-130 X400 to smtp Gateway; MH-445 X400 Gateway API; DS-520 Distributed Directory Services (with XDS Applications Programming Interface); FT-820 File Transfer, Access and Management; and VT-720 Virtual Terminal. Core stack products include the LT-610 Local Network Transport software; WT-325 Wide Area Network Transport software; AP-240 Presentation Syntax Manager; and UL-220 APLI-Upper Layer Software. The company gave no indication of how it will be charging licensees of the suite.

ROUNDUP

Digital Equipment Corp shares fell \$5.375 to \$51.125 as we went to press last week as it warned that it was likely to report an operating loss for its fiscal second quarter because of falling customer demand for larger systems, and competitive pressures. Also, several recent products are not yet shipping in volume, but all of them will be during the company's fiscal third quarter to March.

Meanwhile it has licensed Wind River Systems Inc's VxWorks real-time Unix kernel, which it will use in a new Posix-compliant real-time software development environment called DECelx Toolkit: that's out in the second quarter on Digital DECstations.

And Wind River has also won support from Hewlett-Packard, which will add VxWorks to its new Intel i960-bases HP 700/RX X-Windows terminals.

ICL Plc reports orders totalling £750,000 and looks for over £4m all told for DRS 6000 Unix systems and personal computers from 6,000 local councils in Czechoslovakia. It also bounced Siemens AG at Czechoslovak State Railways UVTD Bratislava, which wants three DRS 6000s and 50 personal computers worth £375,000 at the former user of Siemens kit.

Behind the French government's proposals to merge Compagnie des Machines Bull SA, Thomson SA and France Telecom is the need to get round European Community rules barring subsidies to industrial companies: the thinking is that the profits made by France Telecom could be used to prop up the chronic loss-makers without running afoul of Community regulations - but France Telecom is appalled at the idea.

TriGem Computer Corp of Taiwan has given up on the marketing of its SLT-100 Sparc-based Unix and handed it over to San Diego-based RDI Computer Corp, which has renamed it the BriteLite LC for low cost, dressed it up to look like its other machines, and offers it at \$8,000 with 20MHz chip, 215Mb disk, 640 by 480 paperwhite LCD and Solaris 1.0 Unix.

At Uniform in January, Control Data is expected to trot out the Fax 4000, an E-mail style network fax product for large systems.

Quality Software Products is supposed to show up at Uniform with a collaborative version of its eXclaim spreadsheet which will allow users to simultaneously edit the same spreadsheet on different workstations.

Also at the show, Lucid is to introduce its Sparc-based Energize Programming System for developing and understanding C++ and C code: the software is said to be built on a client/server model and object technology.

Paris-based Non Standard Logics is moving its offices from Santa Barbara, California to Boston effective January 1. The move will cost the company its American chief, executive VP Gerard Brevier. The firm, a latecomer, is facing an uphill battle positioning itself as a GUI contender (UX No 355), and hopes the relocation to a site rich in software expertise will help realize its goals.

Visix Software Inc, Reston, Virginia has a strategic marketing and technology partnership with Applix Inc to integrate the newly rechristened Aster*x office automation software with Visix's Looking Glass Professional graphical user interface and pursue joint sales: first ships are due first quarter.

Menlo Park, California-based Gupta Technologies Inc has SQLBase Server 5.0 ready to ship within 30 days. It is scalable over MS-DOS, OS/2, Unix - initially only SunOS Sparcstation servers - and NetWare systems - as a NetWare Loadable Module for NetWare 3.11. No changes are needed at the client application level in terms of coding when the server is switched. Five-user versions cost \$1,000, and unlimited user licences will cost \$3,000 for MS-DOS, \$4,000 for OS/2, \$5,000 for NetWare and \$10,000 for SunOS Unix.

For reasons of its own, JYACC is putting JAM, its 4GL in the Unix-like QNX operating system.

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The Weekly information newsletter for the UNIX @ community worldwide

We've been playing around with our Unix shells here, and have come up with a few gems. Note that the '%' prompt indicates the C shell, while the '\$' prompt indicates the Bourne shell. Go ahead and try some.

% scan for <<"Arnold Schwarzenegger""JD
"Arnold Schwarzenegger": << terminator not found

% ar m God
ar: God does not exist

% "How would you rate Quayle's incompetence?
Unmatched".

% ^How did the sex change^operation go?
Modifier failed.

% If I had a (for every \$ the Congress spent,
what would I have?
Too many ('s.

% make love
Make: Don't know how to make love. Stop.

% sleep with me
bad character

% got a light?
No match.

% man: why did you get a divorce?
man:: Too many arguments.

% ^What is saccharine?
Bad substitute.

% %blow
%blow: No such job.

% cat 'the can of tuna'
cat: cannot open the can of tuna

\$ mkdir matter; cat>matter
matter: cannot create

\$ drink <bottle; opener
bottle: cannot open
opener: not found

As you have probably already heard, Microsoft and DEC are planning to put NT on the DECstation 5000 series.

Media '92, a new multimedia expo and conference, is scheduled to debut at the Los Angeles Convention Center in California February 26-28.

Young as it is, Microsoft's promised NT is reportedly fat, demanding one heck of a lot of RAM, we understand.

At Federal Unix down in Washington DC recently, OSF chief David Tory talked about a future release of OSF/1 called OSF/1.1, whose interfaces would be compatible with SVR4, meaning that - at least theoretically - the same applications would run under either operating system. Apparently SVR4 compatibility is in the OSF roadmap for OSF/1.2 due in 1993, in any case.

Frame has signed Software Research Associates, the largest independent Japanese software firm, as its development partner for Japanese FrameMaker providing local engineering on future Japanese-language versions and ports to new platforms: SRA is to work with Frame's other Japanese outlets, Matsushita and Toshiba, addressing new markets.

Starting in 90 days, when the software is ready, SunPics' NewsPrint 2.0 package will be bundled with SRS Imaging's \$12,000 workstation-oriented Imager 12000L printer, a 600-dpi 12ppm laser featuring an 11 x 17-inch (B size) format: Unbundled, SunPics has repriced the stuff at \$700.

Hunter Systems has made Microsoft Word 5.0 one of its XDOS Open Applications able to run native on a bunch of Intel and 68000-based Unix platforms: The software, selling for \$500 for a single user, \$200 for each concurrent user, supports heterogeneous environments. Hunter and Microsoft will be doing the same thing for Word 5.5.

Scopus Technology, an Emeryville, California Sybase spin-off, is focusing on Unix software houses with a second generation expert system, co-developed with LSI's CAD group, intended to automate OA and technical support: The product, using Sybase as the database engine and Motif or Open Look as the interface, is going into companies like Ready Systems and View Logic. Pricing is between \$25,000 and \$100,000.

The Interface Group has started peddling a Unix showcase at Comdex/Spring in Chicago: the dates, April 6-9, overlap Sun Expo '92 set for California.

SAIC has acquired Market Focus Technologies Inc, authors of Visual Programming Environment (VPE), a development tool for the GUI designer that SAIC is applying in its own products.

Digital Tools' AutoPlan graphical project management software for HP9000s has been encapsulated into HP's SoftBench Motif-based software development environment.

Unix mail order house UniDirect is now peddling Uni-Zip, the Unix equivalent of the PKZIP utility for mail codes: the 386 version is shipping and a Sun version is expected soon.

The SAS Institute is planning to start going after specific vertical markets with its software, kicking off with a package for pharmaceutical companies that will be written for Unix boxes after the VMS, MVS and VM versions are out.

Informix Corp has signed a DBMS contract with the Czechoslovakian Federal Ministry of the Interior: the country's local municipalities are planning to use the stuff on Wyse/SCO systems to register and administer all citizens. The software they're installing is in both the Czech and Slovakian languages.

Integrated Computer Solutions, Cambridge, Massachusetts, has released version 2.0 of its Builder Xcessory application development environment for the OSF/Motif graphical user interface: prices start at \$3,200 - 8Mb RAM and Motif libraries are pre-requisites. And ICS has signed BIM, Everberg, Belgium; Graphael, Paris; IQ Products, Munich; Italian firm Opensoft and UK, Manchester-based K2 Software Developments Ltd to distribute its products in Europe.

In the UK, Reading, Berkshire-based Imperial Software Technology's X-Designer, a graphical user interface builder, is being ported to ICL's Unix platforms. And NCR has signed up for IST to develop C and Cobol software engineering environments, which will be marketed as Composer workbenches by NCR on its Unix platforms, and as Software Engineer by IST.

Disk and tape subsystem manufacturer Interphase International Inc, Bicester, Oxfordshire, has opened a German office in Munich: it's headed-up by Reinhard Muller.

Spatial Technology Inc, has integrated its CAD/CAM ACIS geometric modeler with Object Design Inc's ObjectStore database.

ModComp president Guy Rabbat is out, replaced by Kurt Wiedenhaupt, head of parent company AEG's North American operation AEG Corp: turnaround expert Doris Bencsik becomes CEO.

Folks familiar enough with Gain Technology's looked-for new multimedia products (UX No 363) to describe them as "hypercard on steroids" say the stuff is good but not the kind of fundamental technology that's going to give IBM and Apple pause or derail their groundwork over at Kalieda - much as Gain and its partner Matsushita would like that to be so.

Commodore's not putting its back into its Unix line, so the manager of its Unix marketing team, Paul Calkin, has jumped ship to go to Unix System Labs as strategic marketing director: he picks up from Jim Daniels who now becomes head of USL's new strategic planning group - see page two. Calkin will be responsible for USL's first ACE project.

This Steve Jobs event, NextWorld Expo, set to run counter to Uniforum next month - see front page - is forecasting 5,000 attendees: if you want to be among the body count, it's at the San Francisco Civic Auditorium starting January 22.

With Novell Inc climbing into bed with everyone and his brother these days, the Santa Cruz Operation Inc doesn't want to be left out in the cold: SCO officials are telling the US press that Novell and SCO will announce that they are working to integrate NetWare and SCO Unix next month.

A new Downsizing Expo has caught the fancy of a bunch of Unix peddlers: it's scheduled for Chicago March 10-12.

Unigram. X is published by Unigram Products Ltd, 4th Floor, 12 Sutton Row, London W1V 5FH.

Telephone +44 (0) 71 528 7083. Fax +44 (0) 71 439 1105. Editor: William Fellows. Group Editor: John Abbott. Circulation: Kate Woolf. Publisher: Simon Thompson.

Annual subscription rates: UK £335, Europe £370, World £380. New York bureau: (516) 759 7025. Tokyo bureau: +81 3 5232 0647.

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