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TOPOPLOGIX USES INMOS TRANSPUTER TO SUPERCHARGE SUN WORKSTATIONS

Niche Technology Ltd of Bristol and its associated sister company Niche Data Systems Inc in Houston, Texas aren't the only ones to see potential in supercharging Sun Microsystems workstations with Inmos International Transputer-based coprocessor boards. Newsbytes reports that Topologix Inc of Denver, Colorado has just announced the Topology 1000 board, its first product. The Topology 1000 board packs four 32-bit T800 Transputers, each with its own memory array, and each board is rated at a peak 80 RISC MIPS. Each board can have up to 64Mb of high-speed memory and up to eight boards can be connected to a standard Sun workstation via a simple wiring harness, yielding a claimed peak performance of 640 RISC MIPS, equivalent to 40 or 50 68020s, Topologix claims. Topologix has been demonstrating the board running the classic travelling salesman problem, determining the most time- and cost-effective travel plans for a salesman who must visit 12 cities. It claims that a standard Sun 3 takes 15 hours to solve the problem, which with one Topology board falls to 20 minutes. But when the workstation has four Topology boards, it steams through the problem in five minutes. The board is offered with a parallel Common Lisp compiler and an extended C compiler for parallel numeric applications, and provides a Unix interface to give Lisp and C access to Unix system calls. Making use the inter-Transputer links that are a feature of the Inmos chip, computer networks of arbitrary size and topology can be built, so that a grid can be overlaid onto an image, with each Transputer responsible for processing in individual grid areas, or the system can also be configured into a tree structure for search applications. Topologix will be looking for sales in simulation and image processing, and says that the Topology 1000 board is out now at about \$500 per MIPS.

DANA BECOMES ARDENT, SETS GRAPHICS CPU FOR EARLY 1988

This probably belongs at the bottom of the back page rather than here at the front, but Allen Michels has decided to rename his Sunnyvale, California start-up Ardent Computer Corp, the name being chosen because it "reflects the zeal with which our team has met the challenge of defining and creating the first of a new class of computer - one that dedicates supercomputer-level power with high-performance three-dimensional graphics to individuals whose work is of the highest priority to a company or research lab." The two-year-old firm, formerly Dana Computer Inc, changed its name to get around trademark conflicts with similarly named companies. Michels said that prototype units of Ardent's Titan personal graphics supercomputer are now running at the firm's Sunnyvale headquarters and a formal introduction is scheduled for the first quarter of 1988. Ardent was founded in November 1985 by Michels, former president and co-founder of Convergent Technologies, and a team of entrepreneurs and technologists from Convergent, DEC, Burroughs, Hewlett-Packard and Amdahl. The most recently named executive, vice president of engineering and research and development Gordon Bell, was the key designer of two generations of DEC minicomputers. Ardent has so far raised \$32m in two rounds of equity finance, \$19m from industrial equipment maker Kubota Ltd of Japan.

APOLLO RISC "NEXT MONTH"

Apollo Computer will unveil its own RISC answer to Sun's SPARC in January, says Electronic News. Using multiple gate arrays the 64-bit box will have one to four CPUs, a 160M-byte-per-second bus, 8Mb to 128Mb, doing 10 to 25 MIPS or 40 MFLOPS.

NEC PUTS UNIX ON NEW MODEL OF ITS SUPERCOMPUTER LINE

NEC Corp has begun marketing a new model in its SX supercomputer line, and says the machine - sold jointly with Honeywell in the US, will run Unix as well as its proprietary operating system. It has sold 16 SXs and looks for 60 over four years.

X/OPEN COUNCILS FORMED TO ADVISE ON FUNCTIONALITY

The X/Open group has formed user and independent software vendor councils which are intended to act as a public checking system on the group's efforts. The main thrust of the two councils' work will be to ensure that the Common Applications Environment is functional. To involve users further the group will also be introducing a newsletter service and holding public seminars during 1988. The meeting procedures for the councils have not yet been worked out but the members have. The User Advisory Council members comprise senior executives from: Aetna Life and Casualty; British Airways; Commission of European Communities; Central Computer and Telecommunications Agency, HM Treasury; Eastman-Kodak Corp; Lockheed Corp; Manufacture Pneumatique Michelin; National Bureau of Standards Institute for Computer Sciences and Technology; Shearson-Lehman Brothers; Swedish Agency for Administrative Development; US Department of the Treasury. The Independent Software Advisory Council has all the major Unix-related software houses represented including: Cullinet Software; Foundation Computer Systems; Information Dimensions Europe Inc of Switzerland; Informix Software; Multihouse Systeemhuizen Gouda BV of The Netherlands; Oracle Software; Quadratron Corp; Relational Technologies Inc; Softlab GmbH; Sybase; Unify Corp; Uniplex (UK).

UNIX IN 1987

January: The worthy folk slaving away at the IEEE POSIX standard, have a chance to sign off the core standard by the end of the year. Some 57 companies - including IBM and AT&T - show their support for the standard at an otherwise lacklustre Uniforum in Washington. And in a further boost for committee standards - and an indication of how AT&T has retreated from its former role in leading the Unix market - AT&T joins X/Open. The UK's preeminence as a home of experienced and cheap Unix talent draws Siemens, Europe's most successful indigenous Unix vendor, to set up a development centre in Woodley, near Reading. The great and the good of the workstation world gather at the Massachusetts Institute of Technology to declare their support for the X Windows standard. A joint announcement by Microsoft, Santa Cruz Operation and Interactive Systems promises merged, binary compatible Unix/Xenix product for the 80386, probably be the most important microprocessor in the Unix market for the next couple of years. Unfortunately, the announcement raises more speculation than optimism because AT&T is not ready until February to tell its side of the story, which is that it appears to have been able to pull together disparate 80386 Unix developments onto a System V.3 base and in return for AT&T's control, the companies will be able to resell the merged product under the Unix name. The world will have to wait until the end of the year for this marvel, we are told.

February: Apollo Computer, which has been looking rather lost of late, makes a bid for the limelight with the Network Computing System, a means of distributing applications across networks of dissimilar computers. The Apollo-inspired Network Computing Forum, which brings together users and competing manufacturers and software vendors to pool ideas on the problem, begins to generate considerable interest. The X/Open Group holds a demonstration of portability in which a carefully adapted version of a single application is run on various carefully adapted machines. Some people think this is significant. The flop of 1986, the IBM 6150, begins to look more serious as IBM doubles the CPU power and adds all manner of communications. Most interest, however, centres on the declaration that the RT's AIX operating system is the model for IBM's future Unix offerings across the board - and on the fact that an extraordinary 1000 people are said to be working on the RT and Unix in Austin, Texas. Philips is the latest European manufacturer to seriously pitch itself into the Unix market.

March: Apple promises Unix for the newly launched Mac II - not due for many months, but it later emerges that the company is bidding Unix for at least one major US defence contract.

Dataquest reckons the 1986 US Unix market totalled 220,000 systems valued at \$4,413m, up from \$3,520m in 1985 and forecast to grow at 28% in 1987. IBM starts to talk about an intangible panacea called Systems Applications Architecture, which is promised to bestow uniformity on IBM's incompatible product lines, in the process dissuading customers from defecting to DEC or even Unix. Noone is quite sure whether IBM's AIX version of Unix has a role within SAA.

April: In Germany, Nixdorf and Siemens are set to split the biggest ever Unix systems contract in Europe, estimated at \$165m over three years to automate unemployment exchanges through the country. IBM excels itself with the announcement of AIX for the new Personal System/2 Model 80 - it won't even give a release date for the product until the fourth quarter 1987. The UK Government computer purchasing body, the CCTA, makes noises publicly about a future formal backing and specification of Unix for Government procurements. Meanwhile suppliers are called in by the Ministry of Defence for a briefing on CHOTS, a planned 24,000 user Unix based defence office automation contract.

May: The X/Open Group's grand plan for an applications porting centre near Heathrow, England comes a cropper as a survey indicates software houses are not overenthusiastic about flying in from all over Europe to port applications. But the group is planning to extend its portability guide to cover networking and security - and plans to pitch into the relatively unexplored area of a standard method of distributed transaction processing. A £5m order for Unix systems may be small beer compared with the monster emerging from the US Government, but it still represents the largest ever single computer order from the Danish Government and is accordingly awarded to Denmark's Dansk Data . Sun Microsystems, which now appears to have half the industry reselling its workstations, signs yet another major order, this time with Stratus Computer. At the UK's European Unix User Show, the CCTA finally commits itself with a statement backing POSIX and the X/Open Group's work.

June: The workstation market, that fertile and lucrative breeding ground for Unix systems, undergoes a ferocious round of price cutting as Sun and Apollo move to stave off the impending threat from 80386-based PCs in engineering markets. Even DEC cuts the price of a diskless monochrome VAXstation to under \$5,000.

July: Sun Microsystems launches the SPARC reduced instruction set processor, lays down a development schedule under which semiconductor companies will take performance up to several times the 10MIPS claimed for initial implementations, and offers to licence the product to the world in general. IBM, which has a long-term Unix development pact with Interactive Systems Corp, ignores the Interactive-endorsed VP/ix and goes to Locus Computing Corp for a version of DOS under Unix for the 80386-based PS/2, generating further gossip and speculation about its long term Unix plans. In Sweden, the Government rejects established suppliers NCR and DEC in favour of an increased emphasis on European vendors for its second phase of Unix systems purchasing. Marking another stage in the quietly growing Unix threat from Japan, Fujitsu is tipped to offer Amdahl's Unix on its supercomputer line. And in a wonderful illustration of how a common operating system can open the way to unlikely alliances between manufacturers, US company Tolerant Systems, Bull of France and Denmark's RC Computer have a technology exchange agreement under which Bull and RC will use Tolerant's operating system for new products which will then be fed into Tolerant's product line. Latest chapter in the sad story of AT&T's ill-conceived Unix PC is that the machine can be had for \$1,900 compared with the \$5,400 list price. By the end of 1987, some US observers reckon they can get one for under \$1,000. AT&T, whose tardiness in introducing a System V mechanism for handling different European languages led the X/Open Group to base its standard on interfaces devised by Hewlett-Packard, finally announces French and German Native Language Supplements for System V.3.1.

August: GEC Computers finally throws in the towel on its Series 63 Unix minicomputer after making only a handful of sales. The Korean Government is the latest to make a sizeable Unix commitment, using Tolerant systems as the basis of a \$176m development of administrative systems. Industry entertainment is provided by DEC's appeal against the US Air Force Computer Acquisition Centre's decision to specify System V compatibility for a \$4.5bn, 20,000 system office automation contract. DEC, which is one of the most vehement opponents of AT&T's System V.3 licencing policy, wants the non-proprietary POSIX standard used. The International Standards Organisation, which has begun to work on the adoption of POSIX as a standard, rebuffs an attempt by Japanese manufacturers to promote a rival standard.

September: Those holding their breath for the legendary Unix/Xenix merged 80386 product will have to hold it a little longer: the development has gone the way of many collaborative efforts and delivery dates have slipped to the second half of 1988.

AT&T launches a mass of Data Systems products including a top-end multiprocessor - and steps up its effort to generate business in licencing Unix-related software by promising to resell source code for communications software.

October: Torch Computers is the latest UK manufacturer to feel the crunch as Australian company Catsco acquires a majority shareholding. Just 15 months earlier, Whitechapel Workstations also needed a drastic refinancing package. X/Open works with the US National Bureau of Standards towards a common applications environment. The Posix 1003.1 standard slips to spring 1988. IBM half-reveals plans for a new line of engineering workstations - and is tempting customers with talk of a 50MIPS RISC machine crammed into a PS/2-like floor standing system. AT&T is readying a secure Unix for the market to satisfy some of the stringent requirements emerging from government procurements. Sun, meanwhile, scores yet another coup by teaming with AT&T to proliferate its SPARC RISC processor and Unix implementation throughout the industry; the agreement promises a standard hardware platform with software guaranteeing binary applications portability between products - and what is the software? Why, the merged System V/Berkeley/SunOS product for which AT&T enlisted Sun's efforts back in 1985. Old developments from innovative US startups never die, it seems, they just get bought up by large European manufacturers and after Nixdorf finally gave birth to fault-tolerant systems based on technology from defunct Auragen, British Telecom launches an integrated voice/data system using technology acquired from long-gone Sydis Corp. DEC is finally rebuffed in its battle over the US Air Force System V specification, and shortly afterwards commits to doing a System V compatible product - something it promised several years ago but conveniently forgot about.

November: One of the few sparks of originality on the world of mainframe operating systems, Amdahl's Aspen transaction processing system, is killed off by the company which will transfer the effort to Unix. IBM meanwhile is said to be readying versions of AIX to run native on its mainframes. Unisoft and Motorola collaborate on a distinctly low-key attempt to bring to 68000 family Unix systems the same level of compatibility as is promised for the Intel 80386. AT&T's computer systems partner Olivetti deals a further blow to the AT&T 3B line with the launch of its own range of Unix systems.

December: The Japanese industry has invested vast amounts in the development of Unix hardware and software, although it so far has little to show for its efforts in overseas markets. Undeterred by early lack of success and sounding a warning to the rest of the industry, Japanese vendors are lining up a mass of new products for 1988: NEC plans a new line of workstations, Sony plans a new US drive behind its News workstation, and Hitachi launches a new range of superminis.

OS/2 LANS CHALLENGE UNIX - BUT NOT THIS YEAR

Bill Gates of Microsoft Inc. reportedly told a meeting of the Tandy User Group in the US last Spring "not to rush out and buy the first releases of OS/2, because there'd be nothing to run on it". But recent predictions suggest that over one million OS/2 systems will be in use by the end of 1988. IBM says it has already shipped a million PS/2 systems to dealers and third parties (currently running DOS, but ripe for upgrade business), and the commitments of companies such as Compaq, Olivetti, Tandy and Zenith, amongst many others, to offer OS/2 on their products within the next month makes it a certainty that by December 1988 the new operating system will have affected the low-end computer market significantly.

What form are those changes likely to take? Microsoft of course also has a large stake in the other two operating systems strong in this area: MS-DOS and Xenix, and is therefore concerned to show that each has its place in the future. Gates has been quoted as saying that MS-DOS will continue as the main workhorse for PCs over the next few years, particularly for those only needing to run real-mode applications. And whilst OS/2 should provide the facilities required for a new generation of sophisticated applications for PCs, Xenix offers a cheap, multi-user solution with a wide range of existing software.

But although Microsoft says it that OS/2 is intended as a single user operating system, John Bondi of Kernel Technology, Leeds, said that this was more of a marketing decision than technical limitation. "OS/2 is multi-tasking, and it would not be difficult to extend it for multi-user operation", he said. "But even as a single user operating system, OS/2 is far more suitable than DOS as a vehicle for networking. Whereas DOS always had to be bodged to make LANS work, OS/2 will make competition between local area network systems and Unix viable for the first time".

However, many hardware manufacturers, formulating their strategy over the next year, seem to believe that the three systems can co-exist, at least for the next few years. Apricot Computers has both DOS and Unix Intel-based systems, and will be offering OS/2 from this month. Peter Horne, Research and Development Director at the company's Birmingham offices, said that although significant applications would not be available for OS/2 until at least 1989, Apricot would be implementing it on servers to provide increased functionality in 1988. Unix would continue to provide the most effective means of shared resources at a departmental level, communicating with workgroups of MS-DOS PCs attached to their own OS/2 servers. While seeing a "gradual migration to OS/2 over a number of years", Horne said that in the meantime "the company first out with effective network management software to bring them together will be dominant".

Software developers, of course, have to decide when to

begin porting applications over to an OS/2 base. John Bondi says that many will choose a half way house solution. "Monolithic applications will port simply on to OS/2, but to take full advantage you may have to change the underlying philosophy of the program, reorganising it as a suite of functions, in order to take advantage of all the OS/2 facilities". DOS, however, will continue to be a mandatory requirement, so developers will need to provide both DOS and OS/2 versions, a task not helped by the incompatibility of Microsoft Windows 2.0 and the OS/2 Presentation Manager, due out in October 1988.

Meanwhile, over the last year, IBM has made what many software developers interpreted as its most important endorsement of the Unix standard so far, by announcing the availability of its AIX version of Unix for the PS/2 Model 80 at Unix Expo and Comdex last October. This was followed with a statement that AIX was now regarded by IBM as its standard Unix platform, which would also be offered on the S/370 range. AIX for the Model 80 is a subset of the operating system as it appears on the IBM 6150 workstation "only in a very few areas" according to Entry Systems Division VP Frank King, whose department took over responsibility for AIX in the Summer. King said that the intention was to implement "as full a version as hardware differences permit" on the Model 80. He was not prepared to predict sales of AIX on the PS/2 range, but said that there were "large amounts of customers for Unix that require multi-user applications", and that IBM was committed to helping developers port their applications to the PS/2.

Rumours at Comdex had it that IBM was planning a merged version of the 6150, which has been more successful in Europe than in the States, and the PS/Model 80, either by adding a RISC-based processor card to the Model 80, or by adding microchannel architecture to the RT. Such a move would both expand IBM's workstation range to compete more effectively with Sun and Apollo, and provide PS/2 users with a higher range system. Currently, however, it appears that there will be a considerable overlap between the 6150 and the PS/2 Model 80 running AIX when it becomes available in September. King would not be drawn on the rumours, but said that IBM would be utilising more common elements between the two systems, including the microchannel architecture. The 6150 already includes a co-processor board for PC-DOS applications, and that could be upgraded to faster processors.

The piecemeal introduction of OS/2, culminating in IBM's OS/2 Extended Edition Version 1.1, due out in November, will mean that even by the end of the year the full effects of OS/2 on the rest of the marketplace will not be fully apparent. As Bondi says, "the key to OS/2 is that it is there to provide better applications to the end user". Those applications are unlikely to emerge until at least 1989.

C ITOH TO SELL ITS PICK BUSINESS TO BONNECO

C Itoh and Co is selling its CIE Systems Inc business, which builds microcomputers to run the Pick operating system in Irvine, California, to Bonneco Inc of Santa Ana. The assets to be sold - next month and on undisclosed terms - include the manufacturing facilities, the RM/COS Cobol Operating System, and the Regulus Unixalike. C Itoh will remain a minority shareholder; Bonneco already has exclusive marketing rights to the Pick machines in the US. The Itoh business claims 2,500 of the 680X0-based systems installed worldwide and says sales have been growing at a quarter-to-quarter rate of 40%. C Itoh will continue with its CIE Terminals Inc business, also in Irvine, which markets DEC VT-compatible displays. Sanderson Computers Ltd of Sheffield sells the CIE boxes in the UK.

DEC TO BUILD MICROVAX II AT NEW 40%-OWNED INDIA VENTURE

DEC plans to follow ICL into India with a 40%-owned local manufacturing affiliate that will initially build the MicroVAX II in India. It expects to get Indian government approval for the new Digital Equipment (India) Ltd shortly, and its plant will be in Bangalore, India's new high-tech capital in the southern state of Karnataka. DEC will hold 40% of the new company, in partnership with long established local company Hinditron Computers Ltd, which will have 30%, and the balance of the equity will be floated on the Bombay Stock Exchange. Rather than accept a similar arrangement for its former IBM India subsidiary, IBM pulled out of the Indian market altogether. Other products will also be made at the plant, for export, but they will initially account for only 10% of output. DEC also has its eye on the army of trained programmers in India, and says it hopes to have software written there for export.

FLEXIBLE RAISES VETURE FUNDING FROM LUXEMBOURG

Flexible Computer Corp, Dallas, Texas builder of the Flex family of minisupercomputing Unix processor boards has run into a severe cash shortage in recent months, leading to a one third reduction in its staff through resignations and lay-offs. The company now thinks it may have solved the problem with a tentative agreement signed on December 9 with a Luxembourg-based investment company that has committed to provide up to \$1.5m in new equity financing for the company by December 31. The agreement involves issue of Flexible preferred stock convertible into common stock. The company reported revenues of \$633,000 and \$1.9m and net losses of \$1.9m and \$5.3m for the three and nine months ended September 30, respectively; at that time it had \$3.0m assets and \$3.9m liabilities.

APRICOT TAKES SEQUENT COMPUTER'S OEM WORK-IN-HAND OVER THE \$200m MARK

With its agreement before Christmas (UX No 159) Apricot Computers Plc joins an army of OEM customers that have been signed by Sequent Computer Systems Inc, Beaverton, Oregon. As well as the \$50m multi-year contract signed by Siemens AG of Munich in March last year, the company has agreements with business systems builder MAI Basic Four Inc of Tustin, California; test equipment manufacturer Teradyne Corp of Boston; add-on memory and peripherals supplier Amperif Corp of Chatsworth, California; medical systems company CliniCom Inc of Boulder, Colorado; and CLSI Inc of Newtonville, Massachusetts. As well as having marketing rights to the Sequent machines in the UK, the five-year agreement - under which Sequent looks for over \$50m of business - gives Apricot's Financial Systems subsidiary the right to sell the new machines as part of its investment management products in key international markets. Apricot claims the largest installed base of multi-user systems in the UK and to be the market leader in investment management systems for City institutions and has established a Major Systems Division under Peter Thomas, former UK general manager of Altos UK, and Terry Radford, former director of Unisys to market the Sequent systems. Apricot's new Major Systems Division will have full product responsibilities to support the sales divisions of other Apricot Group companies and the resellers who will be appointed specifically to handle the concurrent computers. Final integration of the Apricot systems will be done at Apricot's plant at Glenrothes, Fife. Since the launch of its Balance family in September 1984, Sequent claims to have installed more than 280 systems on its own account, and another 400 systems through OEM customers, as well as securing over \$200m of future OEM business.

NCR SEES DOUBLE-DIGIT GROWTH IN 1988

Analysts are already frantically scaling back their forecasts for what was to have been IBM's year of strong recovery in 1988, but NCR Corp sees so little sign of recession in its own business that it is confidently forecasting double digit growth in both turnover and profits for 1988. It expects to set new company records for sales and profits, chairman Charles Exley told Japanese securities analysts in New York this week. "Our plans and expectations call for double digit revenue growth in a constant currency environment, and earnings growth that will outpace revenue growth," he said. Nevertheless he added a note of caution, saying that the forecast was conditional on there being no significant slowdown in the US or world economies. Although NCR will approach 1987 with caution as a result of the decline in financial markets, "we see no need at this time to cut back our programmes for progress". Research and development expenditure in particular will increase in 1988 by double the average 7% of the past five years. In the first nine months of 1987, net rose 27% to \$258m on turnover up 15% at \$3,820m after a 1986 that saw net up 9% at \$336.5m on turnover that rose 13% to \$4,880m.

Sybase Inc has filed a suit against Oracle Corp in a San Francisco court alleging that theft of trade secrets: Sybase believes that Oracle has obtained a copy of the Sybase rdbms system which was not licensed to the company - Oracle declined to comment on the suit.

- 0 -

Information Builders Inc has released a new version of its Focus generator for Unix that includes SQL and enhancements improving data and applications portability, applications development and facilities to access Unix environments.

- 0 -

The Christmas spirit has broken out all over the West Coast, and Microsoft Corp and Borland International Inc have settled their differences over former Microsoft staffer Rob Dickerson who wanted to go and work for Borland: the pair have agreed that Dickerson can take up the post of vice-president of marketing, but he is barred for nine months from working on anything that directly competes with Microsoft, and mustn't disclose Microsoft secrets, and the two have also agreed not to poach from each other's top management for six months.

- 0 -

Compaq Computer Ltd has announced the availability of the Pick operating system on its 80386 boxes: Pick/386 supports up to 17 users and is being supplied to Compaq's dealers by XSoft Ltd of Northants.

- 0 -

Sage Software Inc has reported second quarter net profits down 37.1% at \$264,000, on sales down 1.3% to \$3.4m; mid-term net rose 9.3% to \$506,000, on sales down 3.2% at \$6.2m. Net per share fell 58% to \$0.05 in the quarter, 23% to \$0.10 in the half.

- 0 -

TeleVideo Systems Inc saw a fourth quarter net loss of \$6.4m, up from a loss last time of \$1.9m, on turnover down 1.3% at \$25.5m; net loss for the year to October 31 was \$8.9m, up from a loss last year of \$2.3m, on turnover that was up 0.2% at \$98.9m.

Minigrams

Unisoft Corp will be closing its Munich-based research and development offices during the Spring of 1988 and will be transferring all work-in-progress to the London office, formerly called Root: the six members of the development team have declined to be relocated to London but want to stay together as a team in the Munich area.

- 0 -

Century Research Center will introduce into Japan the Ctrl-C computer-aided design package for development of control systems, from Mitchell & Gauthier Associates Inc, Concord, Massachusetts, offering both the package itself and services based on it: \$33,000 to \$66,000 Ctrl-C runs on DEC VAX and MicroVAX machines and Unix workstations and in Japan will be pitched at designers of robots, car suspensions, gas turbine engines, and plant and process control, a field where Japanese companies still program largely in Fortran.

- 0 -

Sumitomo Bank and Nippon DEC have jointly developed a DEC VAX-based artificial intelligence system designed to analyse English-language telex messages received and sent and to compile transmission statistics: written in Lisp and C, the system has a dictionary of 40,000 words, mainly place names and abbreviations, and a knowledge base of about 200 rules; the system has been test since he and the rate of correct analysis is said to be around 90%, compared with only about 50% for the similar system developed by Citibank; Sumitomo Bank will market the thing at \$150,000, and is hoping to sell 10 systems next year; Nippon DEC will handle support.

- 0 -

Informix Software Inc introduced a pre-release version of its Informix-ESQL/Ada compatible with the beta test version of the Macintosh II A/UX at the Ada Expo show early in December.

Following rumours of a possible bid for Apollo Computer Prime Computer has put in a bid for ComputerVision - ComputerVision has not yet responded.

- 0 -

Multi Concepts of Wokingham, Berkshire has announced two linear programming products, PCLP and PCBlend, for Unix-based systems: PCLP is a linear programming package for the professional linear programmer, PCBlend is a menu driven package for the solution of blending problems which groups data logically and provides reports of results - including material balances and final blend compositions.

- 0 -

Logic Replacement Technology has introduced low-cost versions of its EtherUser workstations which incorporate NFS for the first time: a 30Mb version of the workstation is available without streamer for £2,995, with streamer it costs £4,495 and the price of a 100Mb version is £5,495.

- 0 -

The dedication of San Francisco-based Systems Concepts Inc to keep alive the old DECsystem-10 and 20 36-bit mainframe architecture with its SC-25 machines has been rewarded with a contract for nine SC-25s over 18 months from CompuServe Inc, which wants them to replace some of its old DECsystem-10s - the SC-25 is a reimplementation of the 32-bit DEC architecture, discontinued by the minimaker in 1983, and can run all the 36-bit operating systems, including TOPS-10, TOPS-20 and Tenex: in case the replacement market for DECsystems proves too small, Systems Concepts is also committed to a version of Unix for the SC-25.

- 0 -

Unisoft Corp has won an order worth £70,000 from window manufacturer Fersina International of Barnsley to supply an integrated financial and stock control system.

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TOLERANT SYSTEMS UPGRADES TO 32332, DOUBLES BUS BANDWIDTH

Tolerant Systems Inc of San Jose, California, is preparing for a renewed push to provide more cost effective top-end systems aimed at key government and telecommunications markets, following a claimed doubling in performance of its Eternity Series fault tolerant boxes. The new systems use an upgraded P300 system building block (SBB), based on National Semiconductor's NS 32332 microprocessor instead of the older 32032 processor used in the current P200 Series, resulting in twice the throughput, according to Tolerant. Also upgraded is the P440 System Interconnect Bus (SIB), which links multiple SBBs together into a loosely coupled, transparently distributed system, which now provides twice the bandwidth of the existing P400 SIB. Tolerant has faced increasing competition in recent months, both from established fault tolerant vendors Tandem and Stratus, and from fellow start-up Sequoia Systems which uses multiple 68020 processors. The new systems should improve Tolerant's price performance, with the P300 SBB priced at around \$10,000, around a fifth more than a similarly configured P200 SBB but twice as powerful - particularly significant in top-end multiple SBB configurations costing \$300,000 or more. The gain in bandwidth on the bus is also particularly important in these cases. The new SBB can operate at 5 Mb per second and 4,000 messages per second, and also provides four data paths, which means that under failure conditions three paths remain open rather than one in current systems. Available immediately, the new hardware can be installed as an upgrade to existing systems at a cost of around \$20,000. Tolerant says it will continue to market the older systems, but will also be looking to upgrade systems further as new NatSemi processors, such as the recently sampled NS32532, become available.

LOCKHEED, McDONNELL IN WINGS AS PRIME MAKES HOSTILE \$390m BID FOR COMPUTERVISION

With \$500m of cash earmarked for acquisitions burning a hole in its pocket, and two years of fruitless wooing behind it, Prime Computer Inc finally lost patience and on the Sunday after Christmas made a \$390m bid for Bedford, Massachusetts neighbour Computervision Corp. The offer is \$13.50 a share, \$4.50 above the price in the market immediately before the bid, but well shy of the \$20 high Computervision reached earlier in 1987. Computervision has not yet responded to the bid beyond saying that it will consider the offer with the help of its advisor Goldman Sachs & Co. In current market conditions, the move by Prime makes it a near certainty that Computervision's independence is at an end, but there is a string of large customers led by planemakers McDonnell-Douglas and Lockheed that are likely to be interested, and Prime is likely to have to raise its offer to win the prize. With \$500m in cash, Prime can afford to pay a little more, but president Joe Henson told Reuters that Prime is after acquisitions in other areas of the computer industry and simply wants to lock up Computervision first. The merger would enable Prime Computer to leapfrog Data General to annual sales of over \$1,500m and give it the critical mass to survive the next couple of shakeouts. Despite its success with the British Medusa system - actually owned by Computervision - CAD/CAM currently accounts for just 16% of Prime's turnover, but would be about 50% of the combined company, shooting Prime past Intergraph to second place behind IBM in CAD/CAM. Prime stresses that Computervision users would not have to convert to Prime hardware - Computervision's hardware currently consists of IBM 4300 or 9370 database processors, its own proprietary minicomputer, and Sun Microsystems workstations. Prime points out that Unix is increasingly a common factor in the two companies' lines.

SONY FORMS NEWS UNIX SALES UNITS IN EUROPE, US

1988 is the year Sony Corp tries to take on Sun Microsystems and Apollo Computer in the Unix workstations market with its BSD 4.2- based News station. To that end, the company has formed Sony Microsystems Europe in Cologne, West Germany, and Sony Microsystems Co in Palo Alto, California. It has already said it will start manufacturing the News at its San Diego plant next month.

SYSTEME SHIFTS DEVELOPMENT EFFORTS TOWARDS SOFTWARE

In a move designed to lessen its dependence on hardware manufacturing, Control Data's Systeme Computers Ltd has set up a new division, named Systeme Technologies, which is to shift its central effort onto the development and supply of strategic software tools for system houses, consultancies, and blue chip government installations. Managing Director and Chief Executive of Systeme, Peter Barron, said that the company had realised at the end of 1986 that it could no longer afford to be a long term developer of Unix boxes, with the porting of layered software products necessary to support them seen as too expensive. So whilst the company launched its own 32 user 80386 machine in May 1987 it also introduced a 96 user box rebadged from Computer Consoles Inc as the 3-100 (UX No 126), and later on in the year announced a partnership with Altos, allowing it to supply the Altos Series 2000 as its 3-400, 64 user system. At the Which Computer Show this month, Systeme is tipped to announce a further deal with Altos, for the supply of the new low-end Series 1000 supermicro (UX No 154). Barron sees the future of Systeme centering around what he terms "enabling resources" - pointing to existing products such as the Trans-Basic emulation product and the recently launched PC-Connect PC to Unix tool as examples - which are designed to provide the skills and resources to companies looking to implement their own IT strategy, with the hardware element seen as less significant. Systeme Technologies is currently spending £1 million on further software developments, with a central team of 15 people at the company's headquarters in Leeds. Although Systeme did not achieve the overall profitability it had hoped for in 1987, Barron says that sales took a 40% leap in the fourth quarter, and he expects that growth to continue.

UNIX LETS PICK RUN AS EQUAL IN NEW SOFTWARE ARCHITECTURE

While the hardware designers at Edge Computer Corp have been hard at work perfecting the new Edge 2000 systems (UX No 149), the software developers have spent the last year creating Symetrix, a software architecture claimed to allow Pick and Unix to run with equal efficiency on the same machine. And the system will later allow other operating systems to be added with no degradation and will include transaction processing extensions such as a fault tolerant file system. Symetrix was designed to run on the Edge 1000 and 2000 computers and is said to be adaptable to other systems based on the Motorola 680X0 family. With more work it could be ported to other processor instruction sets. Users have long wanted a system that would allow two or more operating systems to run concurrently on the same machine, to take advantage of applications and services that are only available on some systems. But up to now only one operating system has been able to run native, "supervising" the other and trapping and translating all the system calls it makes to the machine. This invariably causes the performance to suffer, sometimes dramatically for some applications. With Symetrix, each operating system runs native and has full control of the machine while it is running. Both operating systems reside in the supervisor memory space and a small hypervisor switches contexts to allow either complete control of the processor. To switch contexts the hypervisor saves the contents of all registers and then loads the values for the other operating system. The basic time slice is 4 milliseconds: the operator can set the number of ticks for each operating system depending on the mix of jobs and users. But the systems also continuously monitors and dynamically balances the load if either operating system goes idle - if all the jobs are finished before the time slice is over the hypervisor switches to the other operating system. The system has a common file and input/output service based on Unix because of its extensive device drivers, networking file access features. It also has facilities to allow processes in one environment to communicate with processes in the other.

In version 1 these facilities are fairly basic, but version 2, available early next year, will have more and more powerful features. (Symetrix version 1 is a combination of System V, release 2 and Pick Systems Pick Open Architecture, version 1.2. Versions with MS-DOS and other operating systems are in the pipeline.) Version 1 uses the Unix daemon and the Pick phantom processes for communications. When a Pick program wants to access data from a Unix file the daemon takes the request and performs the file access. Similarly, the Pick phantom accesses Pick functions such as its powerful relational database for a Unix program. The Pick side also has access to the Unix device drivers in the common I/O service level. Standard Pick I/O calls are issued by the programs, but the Pick device drivers have been replaced by virtual device drivers that intercept the calls and reinterpret them as Unix calls before sending them to the I/O service. The I/O service also has some transaction processing extensions purchased from the now de-funct EnMasse Computer Corp, which made Unix-based transaction processing machines using dozens of processors. These include a fault-tolerant file system using mirrored disks, enhanced terminal handling for a large amount of transaction processing terminals, and a transaction management system with transaction logging to reconstruct and restore partial transactions. Mirrored disks are in version 1, intelligent terminal handling will be in version 2 while the full transaction management will be available by mid-1988. Version 2 will have three kinds of interprocess communications for a tighter coupling between the operating systems and more advanced file sharing. The first way is through named pipes, the Unix interprocess communications feature that has been extended to Pick. A Pick application, for example, could use a named pipe to transfer data to a Unix X.25 packet switching network server and on over the network. And a Unix application might use a Pick select operation to access Pick's outstanding relational database management system, which would return the data to the application via a pipe. So the pipes allow any two processes on either side to communicate as well as allowing the two sides to share their file handling, I/O and communications services. The second way is through shared memory: Pick applications will get an interface to Unix's shared memory facilities. This would allow one program to dynamically gather data from programs running on both sides. The third way is through the semaphore from System V, which is a software mechanism that coordinates processes that need to cooperate. And all these facilities can be made transparent to the user. The Unix and Pick programs in an application can be installed under the shell and invoked from a customised menu without the user knowing or caring what is running under what.

ALTOS LAUNCHES SERIES 1000 IN UK

Altos this week bolstered its mid-range offerings with the UK launch of the 80386-based eight-user Series 1000 machines announced in the US back in November (UX No 154). The new machines run the Unix V/386 operating system developed by Altos that combines System V and Xenix, and are designed to offer more attractive price/performance for small business and departmental systems at the expense of the expandability offered by the top-end Series 2000 systems. The 80286-based 686 and 886 systems remain in the Altos product range. The floor-standing Series 1000 comes in four models ranging from the entry Model 1000/2-40P, which starts at £8,250 and includes 2Mb RAM, 40Mb disk, two terminals and eight ports, up to the top-end 1000/4T-90P with 4Mb RAM, 90Mb disk, cartridge tape, eight ports, and five terminals for £16,495. All models include 1.6Mb floppy. Altos claims UK sales grew 65% in 1987 and that it installed some 2000 systems bringing the UK installed base to 10,000. Following the move to a larger UK headquarters last year, the company is also planning to offer field service direct from mid-1988. The company is also setting up a "strategic marketing" division to identify niches for further growth.

TORCH RE-EMERGES AS OEM SUPPLIER

Troubled UK workstation manufacturer Torch Computers of Cambridge appears to be finding its feet again after financial problems led to a rescue package set up by backers Newmarket Ventures and the Australian Catsco company back in October (UX No 148). The company has signed a three year technology exchange agreement with US VME board specialists Performance Technologies (PT) of Rochester, New York, which will licence the Torch Manta controller board for 3.5 inch SCSI floppy disks in the US, resulting in sales revenues estimated at around \$240,000. The board has also attracted licencing agreements in the UK from Thame Microsystems Ltd in Oxfordshire, and Integrated Micro Products of Consett, Co Durham. Torch says it plans to use the ~~PT custom VLSI VME Bus interface gate array circuit~~ as the basis of a new product range. Meanwhile, the company has found OEM and distribution deals for its Advanced Triple X VME board from electronics giant Marconi, and from Europel, which will distribute the board through Thame Microsystems to OEMs and system integrators as the Venus board - it features a 68020-based dual processor, dual bus architecture which includes a Torch-developed RISC I/O processor, OpenChip. Torch's own Advanced Triple X board is due out in February, with complete systems ready a month later. Meanwhile, December saw the first available Triple X Turbo 68010-based systems, with Unix V.2, 5 Mb memory and 80 Mb hard disk, claimed to be 30% faster than earlier versions. New Chairman Tim Lowden, seconded from Newmarket Ventures, says that Torch will increasingly look for business from OEMs and VARs, and at further American and European partnerships. Catsco, the company's third biggest customer after Marconi and BT, could well be viewing its interest in Torch as a gateway into the European telecommunications market, where it has achieved dominance in Australia.

APOLLO INTRODUCES DIRECT-CONNECT ETHERNET BUT WILL NOT ABANDON TOKEN-RING

Apollo Computer has introduced direct-connection Ethernet support for its graphics workstations and servers. The add-in card, the Exos 202-M4 Ethernet controller board which has on-board TCP-IP support, is supplied by Excelan. Apollo says that the decision to enhance its proprietary Domain token-ring architecture to run on Ethernet was taken because of customer demand. The company also intends to develop Domain to run on a variety of other networks adding that Ethernet was the first because "it is the prominent competitor in its marketplace". It maintains that its token-ring product is still a viable product and will remain such but it sees around 25% of its high-end workstations shipping with the VME add-in cards during 1988. The terms of Apollo's OEM agreement with Excelan were not disclosed except that it is open-ended with an option to sell the Exos board throughout its product life.

JAROGATE TO ADD SUPERMICRO FAULT TOLERANCE FOR BUSINESS AT WHICH?

Jarogate Ltd, one of the few surviving UK computer designers and manufacturers of those that sprung up at the end of the last decade, is to reveal new products at the Which Computer Show later this month, designed to push its Intel-based supermicro products into wider markets. The company will be adding fault tolerance to its 286 and 386 Sprite multi-user systems, and offering fault tolerance modules for existing Sprite users. According to Managing Director Robin Tracey, small to medium size firms are increasingly taking advantage of high powered 80386-based hardware to run "business critical" applications, and therefore risking serious disruption in the event of a system crash.

Winchester failure

"A small business may have 30 people on a system, with no data processing department and not even have traditional minicomputer features such as fast tapes and removable disks to help with back-ups", said Tracey, who also pointed to a recent survey by Novell that revealed that up to 70% of installed Winchester disk drives fail within two years. Jarogate fault tolerant machines will include; a second disk drive to automatically mirror the first (this also improves system performance, said Tracey); an uninterruptable power supply on the main system, with software to automatically close down everything after five minutes of power failure, and bring it back up again afterwards; protection against database corruption with facilities to store a previous record during updating; and a program to record keystrokes between tape backups that will restore data up to the moment of the crash. Jarogate also offers fast file by file backup software for changable data. Fault tolerant facilities will add around £2,000 to the price of a low-end £4,000 micro, and £5,000 onto a basic 80386 configuration currently costing around £20,000. but Tracey feels this is a small price compared with three days of grief after a serious system crash - one day waiting for the engineer to come, a second for the repair, and a third recovering the information. He said that he was amazed at supermicro vendors offering 64 user systems without these facilities - Jarogate currently stops at 32 users with its Sprite 386, but will offer 64-user system once the new security features are in place. One of the earliest micro manufacturers to include performance related features such as disk cache memory and I/O controllers, Jarogate still does its on manufacturing at workshops in Surbiton, and claims it has survived through "continued growth at a reasonable level, concentrating on particular targets". Although until recently the company had its most success with Concurrent DOS systems, it now has around 100 Unix/Xenix systems installed in the UK.

RACAL IMAGING SYSTEMS PICKS SYBASE FOR HIGH-END OPTICAL DOCUMENT SYSTEM

Infant Racal Electronics offspring Racal Imaging Systems Ltd has given the UK end of Sybase Inc its first local success in the Unix relational database market, with an initial order for two licences to the Sybase database management system, to be used as a hub to the Racal document image processing system. The system has so far won itself only a handful of installations, and have all been based around the Informix database to date, but Informix has been found wanting when the number of documents held in a system starts to approach the very large numbers - 2m to 3m - already envisaged by some of Racal Imaging Systems' customers. A spokesman for Racal would say little more than confirm the purchase of the licences with the intention of inclusion into the document system, and added "it is attractive when used in bigger systems, with higher transaction rates and where you want to back up and modify the database while it is still running." The Racal system works by taking an image through a Canon scanner, and storing it on optical disks after processing by a Sun Microsystems Sun 3 workstation and some Racal proprietary image processing hardware. The document isn't translated into an easily handled digital form in the way an OCR scanner would handle it, but instead the image is just broken down for reconstruction in its original form. This means that handwritten documents and drawings can be stored on the optical disks as well as more traditional text only documents. The relational database management system is run on the Sun workstation to keep track of the documents. When it launched the system in March, Racal said that a basic system, with one Sun workstation, 2Gb of optical disk storage and 150Mb of traditional magnetic disk costs around #89,000. No price difference has been established yet for the Sybase version, but it will primarily be for use on bigger systems. Racal's customers tend to be the larger institutions such as the major banks and insurance companies, and the UK government's Central Computer & Telecommunications Agency has one of the Racal systems on trial, and hopes are high that successful tests will lead to multiple government orders.

UCL PLC ACQUIRES NORTHERN COMPUTING FROM NORTHERN BANK IN ULSTER

UCL Group Plc has made its second acquisition since going public in April and its third in 12 months, paying an undisclosed sum for Northern Bank Ltd's Belfast-based computer subsidiary. Payroll bureau and software developer Northern Computing Ltd lost money in the year to October 1987 on turnover of #664,000. UCL hopes to turn it round quickly by selling its Pick-based payroll software in Great Britain as well as Northern Ireland. UCL is also hoping that its new purchase will help it penetrate government accounts in Northern Ireland. Northern Computing's 36-strong team will be strengthened by additional programmers, analysts and sales people. At the start of last year, UCL bought Unix system distributor Nexel Ltd (UX No 113) for £1.3m, going on to take Computer Factors Ltd in October.

NASA BUILDS \$100,000 NEURAL NET SIMULATOR OF TRANSPUTERS

In one of the most convincing endorsements yet of the exceptional potential of the Inmos International Transputer parallel processing reduced instruction set microprocessor, the US National Aeronautics & Space Administration has built a Neural Network workstation out of 40 Transputers after rejecting several available parallel processors including the Connection Machine, the BBN Butterfly, the Ncube and Intel Hypercubes as either too inflexible or too expensive. Developed at NASA's Johnson Space Center in Houston, the Neural Network Environment Transputer System consists of 10 of the Inmos board-level four-Transputer boards to form a 40-node system. The system uses an IBM Personal as the controller and also uses a graphics Transputer driving a colour monitor. The Microbytes newswire reports that the workstation is already up and running several different neural networking applications. NASA/Johnson already has a very fast neural network simulator running on its NEC SX-2 supercomputer - but time on that machine is very expensive, and the workstation will cost less than \$100,000, a sum which buys less than two days' time on the SX-2. The purpose of the workstation - which simulates the SX-2 simulator - is to reduce the time needed to analyse the ability of a neural network system to solve real world problems in robotics, vision applications and fault diagnosis, and will be used to develop neural net applications cheaply. Unlike other neural net simulators, which are confined to one or two types of network, the one at NASA should be able to simulate all known types of neural nets and make it possible to implement a new kind in less than a day. Once proven, the design will be offered to other NASA bases to duplicate, and will be released into the public domain.

DEC-APPLE ALLIANCE TO OFFER COMPLETE ALTERNATIVE TO IBM?

With Apple chairman John Sculley booked as keynote speaker at the next Dexpo show, Dexpo East 88, and the ~~promise that the show will include a room devoted to an~~ event billed as the "world's first Apple-DEC Computing Center", observers are convinced that the Maynard minimaker and the Cupertino Macmaker are cooking up a formal relationship that will enable them together to offer Fortune 500 companies an integrated alternative to IBM's Systems Applications Architecture. DEC's singular failure to crack the personal computer market leaves the company critically short of an attractive low-cost computer to deliver the power of its VAXes to users' desk-tops, while the Macintosh needs commitment from a major manufacturer to be acceptable to the generality of major corporate users. Asked outright by MIS Week whether a formal relationship was in the works, Apple acknowledged that the two companies had been talking, while DEC said simply that its micro integration strategy applied to all personal computers and that the Mac was a personal computer.

WORKHORSE FROM IRELAND SET TO MANAGE THE OFFICE

Latest entrant on the office automation scene is Workhorse Systems Ltd of Dublin, Ireland set to launch its integrated management office automation system at Uniforum in February. The Unix-based Workhorse product incorporates all the standard packages that are now expected from office automation, such as: word processing; database facilities; spreadsheet; diary; and electronic mail, as well as additional software that is intended to help the user manage his day. Tasks which are performed by more than one person are passed from one user to the other once the first has completed his part of the job and messages are left on users' screens, in priority order, telling them that they have got these tasks to perform and that they are waiting for someone else to finish doing another before they complete the job or continue with it. The software is written in a superset of C that the company calls S2 and describes as a 4GL-type language. The product is aimed specifically at the 80386-based machines because it is the smallest machine with sufficient power and storage for the product: at least 1.5Mb memory is needed. One flaw in the system is that full text retrieval is not available but Workhorse says that this will be available when the standard for CD ROM and WORM settle down. A C-ISAM interface will be incorporated during the second quarter this year. Although the company will start shipping its product, at an expected entry-level price of £2,500, within the next couple of weeks it was actually formed in 1985 when development work started. This privately funded company received funding from CitiCorp but still retains control. A US office is planned some time during this quarter and the company is also looking at developing an OS/2 version.

MINX DEVELOPS NFS/RFS DATABASE PRODUCT FOR DISTRIBUTED PROCESSING

Minx Software Inc specialist Unix-based software supplier for the manufacturing industry has introduced a new database product for its customers that allows them to distribute database files over a network of computers supporting NFS or RFS. MinxNet is primarily intended for use with NFS as it handles larger networks running under Ethernet. Minx says that the new database product will work with a number of different machines but adds that it would perform much better if all the machines were the same. The hardware requirements for MinxNet are two or more computers supporting either NFS or RFS, 150Mb disk storage and 2Mb main memory on each computer. MinxNet costs \$12,000 for each computer added to the network. The three and a half year old company from Los Altos, California numbers AT&T, Arete and Gould amongst its customers which primarily use the company's software to run their manufacturing plants. During the first half of this year the company intends to establish distributors throughout Europe concentrating initially on the Germany, Spain and the UK and is looking for third party software houses that specialise in manufacturing.

FLETCHER DENNYS MOVES INTO UNIX WITH CIRCULUS BUY

Fletcher Dennys Systems Plc has made its first purchase since being rescued by a consortium led by Hillsdown Holdings Plc's Hillsdown Investment Trust in September. The West London personal computer dealer is paying £244,250 in shares for Unix communications and desktop publishing software house Circulus Ltd. Circulus has warranted net pre-tax profits of £80,000 and net assets of £84,250 for the year to November 1988. The purchase price will be reduced by the amount of any shortfall in net assets and by twice the amount of any shortfall in profits to that date. Fletcher Dennys ran into trouble soon after going public last year when anticipated local authority orders failed to materialise. At the time of the rescue, Hillsdown said it wanted to make Fletcher Dennys the basis of its activities in the computer industry. Hillsdown owns 35% and the other members of the rescuing consortium, including Gartmore Special Situations Trust and clients of Parrish Investment Management Ltd, hold another 35% of the equity. It is still not clear what Hillsdown is going to do with its 14% stake in typewriter distributor Office and Electronic Machines Plc which is moving into the PC-based market. One possibility is that it will be put into Fletcher Dennys. FDS is in any case likely to make further acquisitions in the not too distant future.

GENERAL ROBOTICS BECOMES GENROCO, SHIPS SUPER PYTHON AFTER LIQUIDATION

MicroVAX II competitor, General Robotics, started shipping its NS 32332-based Super Python on time at the end of last year despite going into liquidation in May. The company was liquidated due to over extended debt but the employees of the company bought up the assets of the company and carried on with business as usual. The new company, Genroco, started trading on June 1st and promptly acquired the old General Robotics UK subsidiary, now Genroco Europe Ltd. Although the US company has slimmed down and moved to smaller premises in Slinger, Wisconsin the UK division has remained the same in employee terms and moved to larger offices which incorporate factory facilities. Both sites now, however, have given up being "all things to all men" and are concentrating on developing specialised products, built around the Unix-based Pythons, to individual customer specifications. Genroco now regards itself as an engineering company, the US parent company does all the processor development work while the UK arm develops controller products as well as acting as sales and support office for US-developed products and assembling them in Caldicott, Gwent.

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Saying that it did not have time to implement the System V Interface Definition for its implementation of Unix, DEC was a no-show when the bidding for the \$4,500 contract for the 20,000 small Unix systems for the US Air Force closed the second time around on December 22: AT&T has acknowledged that it bid but Computer Systems News could not find any others who put in bids, although Unisys and IBM and perhaps Wang were likely.

- 0 -

Newsbytes reckons that Apple's implementation of Unix, A/UX, will be coming out on 70 floppy disks.

- 0 -

Prime Computer Inc faces having the ratings on its \$375m of subordinated debt downgraded by both Moody's Investors Service and Standard & Poor's Corp in the wake of its \$390m hostile bid for Computervision Corp (see front page): the two New York credit rating agencies currently rate Prime Computer's debt at Baa-2 and double-B-plus respectively.

- 0 -

National Semiconductor Corp has reported second quarter net profits of \$11.1m after a \$1.5m tax credit and a \$90m gain from sale of two buildings, against a loss last time of \$5.7m, on turnover up 40.1% at \$640.0m; mid-term net profit was \$24.1m against a loss last time of \$7.1m, on turnover up 20.0% at \$957.9m. Net per share was \$0.08 in the quarter, \$0.18 in the half.

- 0 -

Convergent Technologies Inc has formed two new subsidiaries, CT Espagne SA for Spain and CT Italie SARL for Italy: its French subsidiary has also established a European centre for software translation.

- 0 -

Diab Data of Sweden and Dansk Data Elektronik of Denmark have signed an OEM contract for Diab's C compiler, D-CC, to run on the Dansk Data Supermax range.

Minigrams

IBM confirmed to continental journalists last month that there is an OS/3 operating system specifically for the 80386 models of the PS/2 waiting in the wings: the company reportedly acknowledged that since OS/2 supports a maximum of only 16Mb main memory, the full benefits of the 386 microprocessor are not used, and that there will therefore be an OS/3 as well; it is expected in the latter half of this year.

- 0 -

Information Builders has announced an interface between the Focus 4GL dbms and the Sybase rdbms for DEC VAX systems running VMS.

- 0 -

Unisys is to start Spanish manufacture of B25, the box it builds under licence from Convergent Inc, at the Madrid, Spain facility that includes the firm's European artificial intelligence base.

- 0 -

Digital Information Systems Corporation has launched a set of utilities for its portable version of the Dicol language that runs on MS-DOS, Novell's Netware, RSX, VMS as well as Unix and Xenix called DBL Synergy which to date only includes windows allowing: portability among operating systems; field definitions that simplify menu selections; multiple window displays; a tutor; save and restore programs; and prototyping utilities, and DISC intends to implement a data dictionary, an interface to relational databases, report generator, and a "make" utility.

- 0 -

TIS Ltd has acquired the exclusive rights to the Conosil range of computer products for the glass and window industry: the Uniglass, Uniframe and Unisell software products allow companies to integrate aspects of glass and window supply including order processing and production control, through to optimising the cutting process.

It is generally agreed that the 68020-based News Berkeley Unix workstation from Sony Corp, soon to be launched in the US and Europe, is the top-selling workstation in Japan, but such things are relative, and the 1987 Japanese sales of the workstation are put at just 2,300.

- 0 -

Digi-Data Ltd has launched a new version of its Gigastore mass storage system for DEC VAX systems running under DEC'S Ultrix, which the company claims gives users of these machines access to a low cost, mass storage backup system with up to 2.5 gigabytes of formatted data on standard VHS video cassette tape: the end user price for a VAX Gigastore is around £6,000 with discounts for OEMs.

- 0 -

GEC Computers has introduced a toolset that allows users to develop software for its 4100 series of computers, running the Babbage system language, on the Unix-based Series 21, Series 24 and Sun workstations: the entry level price for this toolset is £4,000.

- 0 -

Mari Advanced Microelectronics Ltd will be leading a project sponsored under the Department of Trade and Industry's Software Engineering Demonstrator Initiative, set up last year intended to encourage good software practices: Mari will be developing a grain trading system and will be experimenting with a formal design methodology as well as a 4GL.

- 0 -

NCR's Financial Services Division has signed an agreement with software house DSL to market DSL's CAN-8 computerised learning and assistance system under the name NCR Learnmaster: the product is intended for use by the financial service industry including banks, building societies and insurance companies and will run on the Unix-based Tower series as well as its DOS-based PC and workstation systems.

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RISC WARS HOT UP - CCI'S REGULUS FOR DELIVERY THIS YEAR

With a string of RISC processors including products from Motorola, Apollo Computer and Texas Instruments due to be unveiled over the next few months; competition in the field is set to intensify still further and Computer Consoles Inc now says its Regulus RISC project, aimed to take its Unix line into the 40 to 50 MIPS range is nearing completion - and it is eagerly seeking collaborators on the project. The two year development at the mini makers Irvine, California plant is expected by CCI to start generating revenue late this year, and the company which is headquartered in Waltham, Massachusetts says it will consider offers of collaboration from potential OEM customers, software developers, or would-be marketers of the machine. OEMs for CCI's existing range of Unix minis include Unisys, Harris and the UK's ICL. Unisys has just extended its OEM contract with CCI for a further three years - see page three for details. Motorola's 78000 RISC, meanwhile, is now tipped for launch late March while Apollo Computer is due to announce its own offering next month. Texas Instruments is also seeking to revive its fortunes in the microprocessor market and according to Electronics will be describing a RISC built in Gallium Arsenide at the International Solid State Circuits Conference in San Francisco, February 17th to 19th. The 32-bit processor which has 16 32-bit registers and a six stage pipeline will be fabricated in 1.5 micron GaAs technology, the paper said.

WHITECHAPEL TAKES RISC MANUFACTURE TO GERMANY

Whitechapel Workstations is taking the manufacture of its RISC workstation to Germany because of its planned expansion into Europe and the US. Whitechapel intends to sell around 600 of the MIPS Computer-based Hitech-10 machines over this year but has a production capacity of 2,000 at Alcatel's subsidiary, ComputerTechnik Muller plant in Konstanz, on the shores of Lake Constance. The Hitech-10 became available from Whitechapel on the 1st January and is intended mainly for OEM sales. Whitechapel established a US sales and support office in New York six months ago from which it will only sell the Hitech-10 to OEMs. The National Semiconductor-based MG-1 and MG-200 will continue to be manufactured at the company's East London base. The reason Whitechapel did not go to Thomson CSF of France, with which it has an existing manufacturing arrangement (UX No 144) for producing large unexpected orders of MGs, is because the French plant was undergoing a physical reorganisation at the time Whitechapel wanted to start production.

XENIX ON THE PS/2 "SEVEN TIMES FASTER" THAN OS/2

Tests on the initial version of the IBM/Microsoft OS/2 operating system appear to indicate that the system may run up to seven times slower than Xenix, when performing the same tasks on the same computer. Carried out by performance analysts Neal Nelson and Associates of Chicago, a set of 17 different types of work including both calculation and disk intensive tasks were compared running on a 2Mb IBM PS/2 Model 80 with 70Mb hard disk, using first IBM's Release 1.0 of OS/2 with programmers toolkit and C/2 compiler, followed by SCO Xenix V Release 2.2, with 80386 kernel and 80386 compiler. The tests involved up to 20 concurrent tasks. Results showed that in 13 cases Xenix was up to 700% faster, with OS/2 faster in three cases with a maximum of 85% difference. Although based on the first available version of OS/2, the results contradict IBM's suggestion that OS/2 is required to tap the full potential of the PS/2 range. As OS/2 supports only 16Mb main memory however, the full benefits of the 386 processor cannot yet be used: IBM recently confirmed to continental journalists that an OS/3 operating system specifically for the 80386 models of the PS/2 range is currently waiting in the wings.

AT&T BUYS SUN SHARES AT A PREMIUM

Wryly commenting on AT&T's planned investment in Sun Microsystems in light of its own lacklustre performance in the computer business PaineWebber analyst Jack Grubman told the Wall Street Journal "I'd rather see AT&T give Sun \$300m than have AT&T spend it internally". The two companies could not divulge the pact back in October when announcing collaboration on Unix and the Sun SPARC chip (UX No 151), as they hadn't then hammered out the complex terms finally released last week. Under the agreement, Sun may require AT&T to buy shares equivalent to 15% (currently estimated at a value of around \$300 million) in stages over the next 18 months and may buy another 5% in the open market. With Sun determined that AT&T should not invest in it on the cheap, the deal specifies that whenever Sun comes to AT&T for cash during the next three years, AT&T will pay a 25% premium to the average of the closing price of Sun's shares over the previous 20 trading days; there is also a provision that if another investor buys between 20% and 40% of Sun, AT&T may buy the same amount to remain the largest shareholder; Eastman Kodak Co took the a 7% stake in Sun some three years ago, since reduced to 4.5% after further share issues. At its current rate of growth, says Sun, it will need a substantial cash injection during the next eighteen months, and the AT&T deal is by far the most attractive option open to it. Meanwhile, the three phase technology collaboration is currently on schedule, according to technical spokesman Bill Woo. Phase 1, led by Sun, will result in a merged SunOS 4.0 (BSD) and Unix System V: this will be delivered to AT&T by July, with a product from Sun by September, followed by an AT&T version for 80386-based machines. Phase 2 is a major release of System V merging the main variants into one, due mid to late 1989. And Bill Joy heads a 40-man team at a Menlo Park systems technology centre, updating the kernel to include facilities for caching, real-time operation, security, and concurrency for phase 3 "next generation" Unix. The API and ABI components of the system are now well defined, apart from the vital "look and feel" user interface, which will be resolved within the next few months, according to Woo, who also says that an as yet unnamed major European hardware vendor has recently committed itself to the SPARC chip.

BASMARK FINDS NEW HOSTS FOR ITS BASIC COMPILER

Cleveland, Ohio company Basmark Corporation continues to find new hosts for its IBM BASICA and Quickbasic compatible Basmark Basic compiler: the product now works with C- ISAM and a version for the DataFlex data management software is in the works. Other ports completed or in the works include SCO Xenix/386, Microport System V, Interactive Systems' 386/ix, while new hardware ranges supported include the complete ICL Clan range and DRS 3000 under Unix, Altos and Stride Micro. Basmark reckons that its products appeal to software houses and users seeking to shift their PC software to multi-user systems - Unix, Xenix or VMS - as quickly as possible by recompilation, in contrast to the more involved process associated with the growing number of products that translate PC Basic software into C. Basmark Basic is distributed in the UK by Multi Concepts of Wokingham, Berkshire.

AUSTEC GOING FOR VAR MARKET WITH NEW SOFTWARE SALES PROGRAMME

Austec is this week launching a VAR programme that it expects will make hardware a commodity. A software developer or VAR joins the programme by choosing from one of three hardware categories and pays an annual fee in monthly installments for the Ace Cobol development environment tools, recently renamed RM/Master since Austec's acquisition of Ryan MacFarland. Category A includes PC-type machines that run Xenix, DOS or OS/2: category B includes any non-proprietary Unix machines, 386-based Xenix machines, or low-end proprietary machines: Category C covers all the large proprietary machines such as Pyramid. The charge for Category A is \$3,000 a year in the US and slightly more expensive throughout the rest of the world, category B machines have an annual fee of \$6,000, and category C \$10,000 per annum. Austec hopes to create its own VARs through this programme, encouraging software developers to start their own businesses and port applications that they may have developed for particular vertical markets to a wide range of different hardware platforms. The message that Austec, as was, will be pushing as it starts a major publicity and advertising campaign for this new move is that applications are the important factor for users now and that the VAR is now the dominant player as opposed to the hardware manufacturer, especially as hardware prices fall.

MAC DESKTOP FOR UNIX INTERFACE STANDARD?

Apple Computer, set to launch its A/UX version of Unix at Uniforum in February, may go one further and start to promote the Macintosh interface that goes with A/UX as the standard Unix user interface: Sun Microsystems spokesman Bill Woo says that the Mac software is one of the three main alternatives that could form the basis of the user interface component of Sun's ABI program, the others being IBM and Microsoft's Presentation Manager for OS/2, which may also be ported to Unix, and the Next Inc screen-based version of Adobe Systems Postscript language (UX No 146) due out this summer - an announcement on the final choice could be made within the next few weeks.

PENTAGON TO DISTRIBUTE UNIGEM ON ICL HARDWARE

The UK's largest ICL trader in Unix-based systems, Pentagon Business Systems plc, Walton-on-Thames, Surrey, has signed a multi-million pound contract with software developers Software Laboratories Ltd of Dublin, Eire, for the exclusive distribution of its Unigem accounting and transaction processing development environment on ICL hardware in the UK. Said to be worth £13 million resale value over a three year period, it is the third major distribution deal for Unigem in as many months: the product is exclusively distributed in Australia by NEC, and last month Paris-based sales and marketing company Linkor bought the rights to sell it to major users, small to medium sized computer manufacturers and systems integrators in a £15 million agreement. Pentagon, which has 40% of the UK ICL Unix market, and is particularly strong in high-end systems business, will act as a master distributor for other ICL dealers, and can also operate on a non-exclusive basis for ICL business abroad: the company's first order, about to be signed, is for an ICL customer in Jamaica. Software Labs says that Pentagon's large systems experience suits the Unigem product, which has been developed using mainframe software principles: further UK deals with computer manufacturers will be announced shortly, and the company is currently planning its entry into the US marketplace.

MBS LIFE SYSTEMS MAKE MOTOROLA DEAL OFFICIAL

After announcing initial details in August last year, (UX No 142), MBS plc and Motorola Computer Systems have at last made their commercial distribution deal official. A new MBS division, Life Systems (after the US Motorola brand name standing for Linked Information Environment) has the exclusive commercial distribution rights for the Motorola 8000 Series in the UK - technical and industrial business is handled by Thame Microsystems, Oxfordshire. Martin Dean, Sales and Marketing Manager for Life Systems says that the company was looking for between 40 and 50 VARS by the end of the year, and so far has appointed six. The most recent, Warrior Systems of Peterborough, says it expects the deal to be worth £350,000 in end-user sales. Although largely addressing the same market as the Altos boxes sold on by MBS's Microtex division, Dean says that the differentials of UNIX V.3, and the Motorola-based VME architecture will open up new sales, especially with "developments in the Motorola line on the microprocessor front". MBS will have an early 68030-based Series 8000 machine, the Model 8430, at its hospitality suite booked out for prospective VARS at the Which Computer Show. The company says it is only looking for "active" VAR partners, which it will back up with marketing and technical support. Meanwhile, those of Motorola's existing ten or so VARS that sell on the 8000 Series will be transferred to the control of MBS, leaving Motorola to concentrate exclusively on system building. Life Systems currently employs eleven people at its Ascot, Berks offices, and expects this to rise to eighteen by the Spring. Separately, Motorola has combined its boards and systems groups in the UK, in an effort to provide a better service to its OEM customers buying both board and system level products. Previously, VME boards were handled by the Semiconductor sector in the UK, although in the US boards and system sales have been integrated for some time.

UNISYS GIVES COMPUTER CONSOLES NEW \$100m OEM UNIX PACT

Sperry successor Unisys Corp has extended its OEM contract with Computer Consoles Inc for another three years and doubled its size to \$100m, saying that the CCI machines have sold like "hot cakes" over the previous three years. Unisys calls the Computer Consoles machines the Series 7000, and they come in above the 6000s from Arete and the 5000s from NCR. The agreement covers the full Power6/32 minicomputer line, built around a proprietary 32-bit Computer Consoles processor, and is extended to include the new 6/32MP multiprocessor version that is rated at up to 15 MIPS. The original processor was replaced by an enhanced one last year, and ~~the line now starts with the 6/32EX, supporting 32 to 80~~ users and rated at 5 MIPS; a processor swapout is required to upgrade it to the 6/32X, rated at 8 MIPS; adding a further CPU and floating point unit upgrades this to the asymmetric master-slave 6/32MP rated at 15 MIPS. Unisys says that it has sold the machines across the board in application terms but adds that the three top selling environments are to: the public sector; retail; and manufacturing. Commenting about RISC developments Unisys boasts an awareness of the Regulus project but says that it has no commitment to take it on but is keeping an open mind concerning the incorporation of these new technologies into its product line.

NCR, AT&T OFFER TO INTEGRATE RETAILER'S STORE NETWORKS

Acknowledging NCR Corp's dominant position in the retail point-of-sale business, AT&T Co has teamed up with the Daytner to create a systems architecture enabling department stores to use a common network for speech and point-of-sale data communications at the store level. AT&T and NCR have tested the architecture by connecting NCR point-of-sale terminals through AT&T PABXs. For the test, an NCR Tower Unix supermicro, a T9100 processor and the NCR 7052/7003 Stores system were linked to AT&T System 75 and System 85 PABXs connected by the AT&T Accunet T1.5 Service. Testing is under way to include AT&T's Premises Distribution System wiring plan for connecting voice and data systems within a building, building complex or campus, which would simplify the task of reconfiguring the two nets. The partners promise end-to-end system support so that if there is a failure, AT&T and NCR will provide the technical support to solve the problem in a co-operative manner. The combined data/voice architecture from AT&T and NCR is available now in the US; cost and savings will depend on the size and type of systems installed at each store. The announcement was made at this week's National Retail Merchants Association show, New York.

COMPUTERVISION VOWS TO ESCAPE FROM PRIME BUT IS TALKING TO OTHER INTERESTED PARTIES

As we were going to press Computervision Corp said that it had opened preliminary discussions with third parties that have expressed an interest in buying part or all of the company; it said that it was also putting golden parachutes in place to protect the interests of 17 key employees. At the end of last week, however, armed with an opinion from financial advisor Goldman Sachs & Co that the \$13.50 a share tender offer from Prime Computer Inc was inadequate, the board of Computervision Corp, Bedford, Massachusetts, finally responded to the bid by unanimously rejecting Prime's offer. Computervision instructed management to work with advisors to explore alternatives, which include merger with another company or the acquisition of a substantial business that would put the enlarged Computervision out of Prime's reach. It will also oppose any move - threatened by Prime - to solicit consents to replace directors with Prime nominees to facilitate consummation of the proposed takeover.

ALLIANT RESTRUCTURES TO EXPAND ITS INTERNATIONAL SALES

Minisupercomputer builder Alliant Computer Systems Corp, Littleton, Massachusetts, is restructuring its operations in an attempt to expand its foreign business, and has taken on Roger Parsons, formerly president of VMark Software Inc to be vice-president of worldwide sales. The company is cutting 40 jobs at its Littleton headquarters, but is taking on another 50 people in international sales and marketing. The OEM pact with Apollo Computer Inc has accounted for most of Alliant's overseas sales.

BINARY SECURE UNIX IMPLEMENTATIONS FOR SALE FROM AT&T FEDERAL SYSTEMS - SOON

AT&T's Federal Systems Division expects to be selling binary versions of its secure Unix implementation certified to the B1 level defined by the US Orange Book of computer security specifications by the end of this quarter. The Federal Systems Division says that this binary system, specifically for the 3B2 family, will not reflect what may happen to the source in the future. AT&T Information Systems meanwhile is just embarking on the process, that takes at least two years, of getting a system up to B2 level. Although the Federal Systems Division's secure implementation is "more or less" SVID-compatible the developers have taken short cuts, such as disregarding backward compatibility issues, in order to get a system together as soon as possible to cash in on some of the emerging US government contracts.

ERICSSON TO LAUNCH SYSTEM 20 AND AIMS TO DOUBLE PROFITABILITY

L M Ericsson is to start announcing the availability of its X/Open-compliant machine this week. Details of the machine are sketchy but it is based on a Sun 3 series workstation and is called the System 20. Ericsson has added additional software to comply with the Swedish government's call for additional security features. One of the first public viewings of the machine will be at the Hannover Fair in March. The company's chairman Hans Werthen aims to double profitability over the next five years by increasing market share. He looks for the CGCT acquisition to increase the stake in France to 25% from 16%, says great success has been achieved in the UK, Italy and Spain, and has great hopes for the US.

SYMBOLICS TO CUT 10%, TAKE BIG CHARGE

Symbolics Inc, the Cambridge, Massachusetts symbolic processing systems specialist, has decided to take further measures to reduce operating expenses and streamline operations. The company will reduce its workforce of approximately 730 people by about 10% and the expenses associated with the lay-offs will be included in a "substantial" charge to second quarter earnings for the period to January 3. The charge will include additional reserves for excess capacity and assets and will substantially increase the loss the company expects to report for the second quarter - the figures should be out by the end of the month. The company says that earlier measures have reduced by operating expenses by about 16% over the past year, gross margins have improved, and its cash position of \$12.1m at the end of the last fiscal year, has remained stable. The company hopes that the new cuts will enable it to return to profitability by the end of the current fiscal. However the company believes that maintaining the best available customer service is particularly important" and therefore, "notwithstanding the workforce reduction, we will be adding resources and increasing personnel in this area." For its fiscal first quarter to October 4, 1987, Symbolics reported a net loss of \$4.5m, \$2.2m of the losses from operations, on turnover of \$24m.

TANDEM PACT WITH CACI FOR MARKETING AND SUPPORT

Tandem Computers Inc announced this week that CACI International Inc of Washington DC is to market and support on-line, point-of-sale software for retailers using Tandem NonStop systems. CACI will market, support and enhance the StoreLink package which enables retailers to do remote credit authorisation, current flash totals, network management and data integration for numbers of NCR's point-of-sale terminals from a single point.

PRIME STARTS MASTER VAR PROGRAMME FOR UNIX SYSTEMS

Prime Computer Inc has made the first VAR agreement of its kind for Prime with Copley Systems Corp of Needham, Massachusetts which is intended to get its Unix-based small multiuser EXL 316 system off the ground. Copley is now a Prime Master VAR and its job is to deal with all small VARs for the Unix product range because it can afford to give them the attention they need whereas Prime cannot. Once these smaller VARs have reached "sufficient volume" they will then be able to buy direct from Prime. Prime intends to sign up other Master VARs throughout 1988 but details of where and how many are not available. Separately Copley also expects to become part of AT&T's proposed authorised distributor programme which will replace its Value Added Systems Distributor programme, intended for launch at the end of January. Until Data General disbanded its distributor scheme late last year ten-year old Copley acted as a DG distributor and now hopes that the Prime and AT&T contracts will fill the hole.

HITACHI UNVEILS GMICRO/32 TRON MICROPROCESSOR

Hitachi and its two partners, Fujitsu and Mitsubishi Electric yesterday unveiled the fruits of their joint development effort to come up with a 32-bit microprocessor and support chips optimised for Tron, The Real-time Operation Nucleus that competes with Unix in Japan as the operating environment. The Gmicro/200 part integrates some 730,000 transistors, and is due to be available in July. The Fujitsu contribution is three key support chips - the Direct Memory Access Controller, the Interrupt Request Controller and the TAGM tag memory chip for configuring the cache for holding temporary data at interrupts. Mitsubishi will add a cache controller to the set by year-end.

CRAY RESEARCH "HIGHLY RECOMMENDED"

In expectation that Cray Research Inc will announce its forthcoming multiprocessor supercomputer within the next 40 days, Goldman Sachs & Co analyst Daniel Benton has put the company on his list of "highly recommended" issues - and the shares obligingly leaped \$4.50 to \$78 even in last week's trading. The list embraces the "most compelling stocks" that the firm recommends to investors. The shares in the supercomputer builder have been depressed since IBM announced that it would be bankrolling the new firm formed by former Cray Research designer Steve Chen.

INTERACTIVE SOFTWARE TOOL DEVELOPED BY ACADEMICS

FOR BUTTERFLY PARALLEL PROCESSOR

A new software tool designed to help users optimise the execution of programs on the Butterfly family of parallel processing systems, BBN Advanced Computers Inc has been developed at Indiana University. The Blaze Editor, or Bled, is a public-domain program which the developers claim helps programmers optimise parallel programs, ensuring that users are getting the best performance from their multiprocessing systems. Normally, the task of porting code to a parallel machine requires the user to recode and restructure the algorithm to make it work well. There are several automatic paralleling systems that facilitate this process, but many users prefer to improve performance beyond what these automatic systems provide. Bled is an interactive program editing and transformation system that helps the user improve performance. The system consists of a user interface manager that provides the user with several tools, including program editing, transformation and evaluation tools, which can be applied to selected parts of the program. The user works with Bled to restructure the code for the Butterfly architecture and monitor this transformation. If the user attempts to transform the program in violation of the original code semantics, the system warns that a change in the meaning of the program has occurred. The user can ask the system what legal parallelising transformation can be applied to a segment of the selected code or, the user can ask the system to make the desired program modifications, thus ensuring the correctness of the code. Bled is also being designed to make estimates of potential program execution behavior, providing the programmer with feedback about the suitability of algorithm constructs and problems that may be encountered during execution. When the code is actually running on a Butterfly parallel processor, the user may switch to a performance evaluation package to do final fine tuning. The Indiana University researchers now are working with CRSD at the University of Illinois in Urbana and researchers at INRIA in Paris on two extensions to the system. One is the performance prediction package mentioned above. The other is a portable runtime environment supporting a dynamic microtasking facility that incorporates ideas from the Argonne Schedule package and the Massachusetts Institute of Technology multiLisp system.

CONVEX SELLS TO CHINA

Convex Computer Corp, Richardson, Texas, has sold the first two Convex minisupercomputers into China. The first, a Convex C1 single processor system will be used for meteorological simulation and research by the government of China. And a dual processor Convex system has been sold for oil and gas exploration, using SuperMineMap geophysical software from Aerospace Technologies Inc of Fitchburg, Mass., who won both sales through its subsidiary Geotech USA, specifically concentrating on the Chinese marketplace. Aerospace has recently signed an agreement with Sun Microsystems, allowing it to be sold on customised Sun-based workstations as a front-end to the Convex systems. Aerospace vice president Jay Lange says he expects to make more sales to China over the next year.

SYMMETRIC LAUNCHES CLIPPER-BASED "META-MICRO" MACHINE

Intending to fill a price performance gap in the DEC product line Symmetric Computer Systems Corp, Fremont, California, has introduced its Model 875, dubbed a meta-micro, based on the Intergraph Clipper C100 chip set. Symmetric claims to have built a computer the size of the MicroVAX II that delivers the performance of a VAX 8600. The 32-bit Model 875 uses the Texas Instruments/Apple NuBus, which the company considers the RISC bus of buses. When it is combined with Texas Instruments' Lisp-compatible processor boards Symmetric says that the machine can become a Lisp machine with Unix running on the 875 processor acting as a front end. The system will also be sold as a technical workstation with the addition of a graphics controller board from Apple for the NuBus. Available as options is Ethernet and X.25 packet switching networks controller boards. The system has 4Mb per second per channel SCSI bus adapters for adding on disk and tape drives, memory can be expanded from 4Mb to 128Mb. The Model 875 will be sold with Symmetric's version of Unix, combining 4.3BSD and Unix System V but a VMS shell is under development. A standard configuration with a VT220-compatible terminal, 4Mb main memory, eight serial ports, 80Mb disk and an operating system license is priced at \$10,000. A fully-configured machine with 128Mb memory and 3.2Gb of internal disk storage costs \$45,000. Symmetric will be selling the machine through five regional distributors in the US into the traditional DEC mid-range market. The Model 875 is scheduled for delivery in March and will be able to use the recently announced Clipper C300 when it becomes available later this year.

SUN BUILDS ON BUSINESS INTERESTS WITH INNOVATIVE DEAL

More evidence of Sun Microsystems' increasing interest in the business marketplace comes from a joint development deal between Sun and Innovative Software Inc of Lenexa, Kansas, authors of the Smart office automation suite. The two companies are to jointly develop new applications software to run on Sun workstations, taking advantage of the windowing and mouse facilities. The move follows another joint development set up last month with Relational Technology for a window-based user interface to Ingres, the fruits of which are expected in June. Innovative says it is committed to develop powerful graphics oriented products for combination with its business products, which have recently been ported to Xenix. Sun says it will be marketing the co-labelled product, but did not reveal when it would be available. Innovative Software announced its intentions to merge with Unix database vendors Informix Software Inc, Menlo, California back in October, due for completion in February.

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Minigrams

Unisys, AT&T, IBM and surprise contender Prime Computer Inc are now believed to be the only bidders for the US Air Force's \$4,500m tender for 20,000 small Unix systems: Wang has followed DEC in saying it decided not to bid.

- 0 -

Prime Computer Japan and its local partner, Sumitomo Metal Industries, have introduced a Japanese language version of the 80386-based EXL-316 MS-DOS and Unix workstation, on which Sumitomo assisted with the tailoring: the partners are looking to sell 200 to 300 of the workstations at some \$33,000 apiece.

- 0 -

Yet another of the "names" attracted by Encore Computer Corp has left the Marlborough, Massachusetts company: this time it's president James Pompa, who was formerly head of Honeywell Minicomputer Operations, and is leaving for "personal reasons; founder Ken Fisher will add the title of president and assume the duties of that office.

- 0 -

The rumour mill was working over time in the City of London last week after Hull-based Texas Instruments reseller Radius Plc announced on last week that it held just over 5.0% of Altos Computer Systems Inc and Wyse Technology Inc distributor Logitek Plc: the story doing the rounds was that Logitek - yes, that way round - was preparing a bid for Radius, a suggestion described by Logitek boss Jim Pickup as "absolutely untrue": both shares were strong, Logitek up 10 pence at 133p and Radius, after a 23p advance, leaped 15p to reach 240p.

- 0 -

Fast-growing UK flackery Aeberhard and Partners Ltd, whose clients include Compaq Computer Ltd, Systems Designers Plc, TIS Ltd, and Sphinx Ltd has launched a joint venture - A Plus Video - with Iain Carson, presenter of Channel Four's Business Daily and formerly business editor of the Observer, to produce corporate video programmes.

Excelan Inc, San Jose, California is chortling that for the second year in a row it has been chosen to network the 1988 UniForum Trade Show at the InfoMart in Dallas, February 8 to 10: the network will link equipment from approximately 50 represented vendors at UniForum and Excelan will be responsible for installing the Ethernet-based TCP/IP network and for co-ordinating all connections to the network.

- 0 -

Plans are also in the pipeline at Coda of Leeds, England to do a Unix version of its Integrated Accounting System but says that that will wait until vendors of mid-range equipment commit themselves to the operating system.

- 0 -

IBM reportedly said that the PS/2 project started as far back as 1982 and went through many re-designs, with only the last of these resulting in Micro Channel Architecture - and even acknowledged that there was considerable internal disagreement over whether the original Personal Computer bus should not simply be enhanced rather than supplanted by a new one.

- 0 -

Unisys UK Ltd reckons that the ICL DRS 300 workstation line when used in an ICL environment around a VME host is a soft target, and is investing to tailor its Convergent Inc-designed B25 workstation family to the desires of ICL users: it has enlisted the aid of Logica Plc and Tata Unisys, the Bombay, India joint venture formerly called Tata Burroughs to write software to emulate ICL's File Transfer Facility and other utilities, initially using the ICL proprietary CO3 protocol, and later with X25 and Oslan.

- 0 -

ITL has won an order for its Momentum 9000X Model 23 fault tolerant mini from the Shell International Pension Fund.

- 0 -

HCR Corp of Toronto, Canada has announced its intention to join forces with Intercative Systems Corp of Santa Monica, California to distribute Interactive's 386/ix product family throughout Canada.

The two-week old lawsuit (UX No 160) came to an abrupt end when Sybase admitted that it had wrongly accused Oracle of using and copying its software: lawyers from both companies said that Oracle did not have the Sybase software - negotiations between the two companies brought forward the fact that Sybase had a copy of the Oracle dbms but further investigation showed that it belonged to a Sybase employee that previously worked for Oracle and that the software had not been used by Sybase - both Sybase and Oracle have now agreed to return any of the other's software although both say that they have not got any.

- 0 -

Ron Posner has resigned from the board of Borland International Inc to "pursue other business interests": company president Philippe Kahn has temporarily taken over Posner's position as general manager of the group's Apple Macintosh division until a replacement can be found: Posner was formerly chief executive of Ansa Software, the Paradox microcomputer database company Borland acquired last year.

- 0 -

Micro Focus has announced an agreement to supply its Cobol v.1.5 on AT&T's 3B systems and Micro Focus Cobol/2 for the AT&T 6386 WorkGroup System, Micro Focus claims that these compilers will be sold by AT&T as "its premier Cobol development environment".

- 0 -

Excelerator Software Products of Berkhamsted, England has developed its PC-based CASE products to run on Sun Microsystems' workstations - Sun provided Excelerator with development assistance for this new port.

- 0 -

UK-based Unix magazine Unix Systems has got a travel package together for those wishing to travel with them to UniForum 88 next month, to be held in Dallas - the return air fare will be £375: those interested should contact Philip Flaxton on (04862) 27661.

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X/OPEN THROWS OPEN THE DOORS TO SUN AND NCR

The X/Open Group has brought two more of the industry's most prominent Unix systems manufacturers into the fold in the form of Sun Microsystems and NCR Corp. The involvement of Sun, which is of course largely responsible for producing future generations of Unix under its agreement with AT&T, is likely to help ensure that the X/Open standards work remains closely in touch with the Sun/AT&T development. Although the group now denies requiring a minimum level of revenues from prospective members, Sun has only just passed the previous lower limit of \$500m. Member companies are required to produce systems that conform to the X/Open Common Applications Environment; Sun says it plans to do so "at an early date".

Rumours of the imminent enrolment of NCR have been circulating since as long ago as January 1987 (UX No 112) when NCR officials were indicating that the company was ready to join. X/Open says there has been no delay on its part in making NCR a member. Sun and NCR bring the X/Open membership to thirteen; the others are founders ICL, Bull, Nixdorf, Olivetti and Siemens with Ericsson, Philips, AT&T, Unisys, DEC, and Hewlett-Packard. The standards group has a budget of about \$7m this year.

AS NCR, DEC, APOLLO, UNISYS OBJECT TO AT&T/SUN RELATIONSHIP

Fearing that they may suffer from the increasingly tight relationship between Sun Microsystems and AT&T, representatives from major vendors of Unix-based systems gathered to discuss their concern at DEC's western regional laboratory in Palo Alto and may formally seek a greater technical involvement in future Unix developments - or even take more drastic action. The companies think that Sun will have an unfair advantage in product design because of the knowledge it will have about the direction of Unix developments through its work with AT&T. Senior staff from Apollo Computer, DEC, Hewlett-Packard, NCR, Unisys, Data General and Tandem last week signed a letter sent to AT&T asking for a meeting with Vittorio Cassoni, head of AT&T's computer operations. The companies want to have their own technical staff helping AT&T and Sun with the development work. According to the Wall Street Journal some companies are suggesting that if AT&T will not let them become involved in the development they may file a lawsuit charging restraint of trade and others are thinking of setting up their own joint Unix development group.

DAISY SIGNS FOR SUNOS ON ITS 80386 BOXES

Sun Microsystems has never formally acknowledged that it is working on a line of 80386-based products, but an agreement announced this week with Daisy Systems Corp, also in Mountain View, California, suggests that an implementation of the SunOS version of Berkeley Unix with System V is ready. Daisy has taken a licence to SunOS that extends its use of the operating system to its 80386-based workstations as well as its Sun-4-based XL Servers, which acts as a network computing node for printed circuit board routing and analogue simulation, and began shipping in December. The 80386-based products include the Personal Logician 386, Logician 386, and Megalogician simulation accelerator. Initial release of SunOS on Daisy workstations is expected in the second half of 1988. Daisy is also incorporating the TCP/IP protocol and Sun's Open Network Computing/Network File System, and plans to implement the X11/NeWS graphics interface standard. Upgrade paths and conversion options are being offered to users of Daisy's older 80286-based workstations: they can be upgraded with an 80386 processor, users who retain their Daisy DNIX systems can connect them to the same physical network and share files and network resources with the Unix workstations. Daisy will offer X-Window with its initial release of SunOS, and plans to migrate to X11/NeWS subsequently.

TOSHIBA SETS UNIX LAPTOP

Toshiba Corp is tipped to announce a version of its 80386-based T5100 lap-top computer running the Unix operating system at Uniforum in Dallas next month. No word on price, but the machine will come with 4Mb memory, 3.5" 40Mb Winchester and high resolution gas plasma display. The new machine weighs in at just 10 lbs.

TRANSPUTER BOARD BOOSTS APOLLO TO 90 MIPS

The launch of a new Transputer-based Tram range of board products from Inmos International Plc, Bristol, Avon, (see page 3) has brought to light a worldwide deal between the company and Apollo Computer, which has been buying the modules for use in its DN3000 and DN4000 Series workstations. Apollo has yet to announce the product and will not reveal quantities or value, but it did say that a prototype system using the boards, which plug into the workstations' AT bus, has been implemented and could be available next month for running within a window on the system. A full co-processor function is expected to be available by the middle of the year, giving a theoretical performance of 90 MIPS. Although prices have not yet been set, the Apollo driver is likely to cost around \$2,000, giving a total cost of around \$7,000 for the total package using the Tram starter kit. Seen as a specialist tool for the likes of Occam programmers and for defence contracts which require Occam, the co-processor option will be an alternative to the higher performance RISC-based workstations expected from Apollo next month.

3B2/500 LAUNCHED AT WHICH? BY BRITISH OLIVETTI

British Olivetti has chosen the Which Computer? Show being held in Birmingham, England this week to launch the 3B2/500 that AT&T announced last September (UX No146). The machine slots in between the 400 and 600 will support 40 users and is priced at £24,995 in the UK.

ARDENT TO RUN INTELLIGENT AERODYNAMICS PACK

The biggest problem for a company seeking to establish a new computer architecture is to get software developers to support it, but Alan Michels Ardent Computer Corp, the Sunnyvale, California start-up that started life as Dana Group, has won something of a coup in that direction. Intelligent Aerodynamics Inc of Princeton, New Jersey has agreed to joint marketing of FL087, claimed to be the first computational fluid dynamics package with integrated graphics with the Titan, Ardent's forthcoming graphics supercomputer. FL087 was created for use in aircraft design, and is the latest version of software developed by Dr Antony Jameson, professor of aerospace engineering at Princeton, to solve Euler equations widely used for aerodynamic analysis in aircraft design and simulation. Ardent will license the FL087 software with its own Dynamic Objective Rendering Environment graphics library to Titan customers at \$15,000. A more comprehensive version, with pre- and post-processing on FL087, will be offered for \$36,000 later.

MICROSOFT TAPS ASHTON-TATE, SYBASE FOR MS-OS/2 SQL SERVER

Filling in the final major element in Microsoft Corp's promise to offer MS-OS/2 users a complete alternative to the networking and database facilities in the works from IBM for its own version of OS/2, the company yesterday announced agreements with Ashton-Tate Corp and Sybase Inc to create an SQL Server database product for use by a local network of MS-OS/2 and MS-DOS micros. The announcement, which anticipates IBM's announcement of a database for its own OS/2 users, seems to ensure that there will be two rival standards in the OS/2 world. That hardly looks an attractive situation from IBM's point of view, and underlines yet again that Microsoft leads a charmed life in its dealings with Armonk. The database technology is coming from Ashton-Tate Inc, which will be developing a new version of dBase, while Sybase Inc, Berkeley, California will supply the SQL interface. Under the agreement, Ashton-Tate will take a licence to SQL Server from Microsoft and market it as Ashton-Tate/Microsoft. Customers will be able to buy SQL Server by itself or in combination with a future version of dBase. Microsoft will license SQL Server on an OEM basis to hardware manufacturers: it will provide database services to network users and will be usable with dBase or with other workstation software. SQL Server runs on any OS/2 system-based network server, including those with the Microsoft OS/2 LAN Manager - developed in partnership with 3Com Corp to match IBM's promised networking products - and the IBM LAN Server. Ashton-Tate plans first ships of SQL Server to users in the second half of 1988. It says it will decide pricing for it in the second quarter.

PRIME SAYS \$15 A SHARE IS FINAL OFFER FOR COMPUTERVISION; OUTCOME NOW UNCERTAIN

Prime Computer Inc's chances of landing Computervision Corp receded a little after it raised the value of its bid to \$15 a share, \$435m, last week and characterised the improved offer as final. Reason is that a persistent buyer of Computervision shares on Tuesday was reportedly paying \$14.875, and must have been confident that a higher offer was coming from elsewhere, because no arbitrageur would be interested in a turn of only one bit a share. Prime's board said it would not go above \$15 because any further increase would not serve the interests of Prime. The new offer expires January 27. Since Computervision has not responded to Prime's request that it redeem its poison pill rights, Prime is now soliciting shareholder consents to remove the Computervision board and nominate its own directors who, if elected, will redeem the rights. In response to a Delaware legal action filed by Computervision, Prime filed a counterclaim seeking to invalidate and enjoin Computervision's poison pill rights and the golden parachutes for top management. Computervision had no immediate response to Prime's new offer, but since most of its shares now appear to be in the hands of professional investors, its independence is almost certainly at an end. Computervision has said that it is talking with unidentified third parties, but selling to another looks to be its only alternative to being bought by Prime.

LEGEND FILLS TETRA-CHAMELEON GAP

A year after introducing its top-end Chameleon accounts package at Which Computer, Tetra Business Systems of Maidenhead, Berks, has again used the show to launch two new products. Professional is an entry level package licenced from Compact Ltd and running under MS-DOS and OS/2, aimed at users not requiring the complexities of the company's mainstream Tetraplan MS/DOS and Unix software. And Legend is targeted at the current Xenix market, fitting in between Tetraplan and Chameleon, which appeals mostly to larger users. Legend offers higher functionality stock control and order processing features, and better price/performance for smaller users. Tetra Managing Director Sean Dowling said that the company now has a user base of over 150 Chameleon systems, with 10% of orders originating from overseas. The company says that customers wishing to upgrade can easily transfer data from one package to another.

FREE DOGS FROM FROM PAFEC

Pafec Ltd of Nottingham, England is practically giving away its PC DOGS computer aided design product in an attempt to attract more custom. Until December last year PC DOGS was available for £3,000 but now an enhanced version will be going to anyone who wants it for the price of £15. This is in order to cover the cost of floppy disks and literature. Pafec is confident that it is going to make money on this venture since, in its experience, CAD users who start off with the PC package have to upgrade to get the performance they require. This would appear even more likely as the product is only 2D and not 3D as is usual for sophisticated CAD problems.

McDONNELL BUYS PRO COMPUTER

McDonnell Douglas Information Services has reunited all the licences for the Pro-IV applications generator with the purchase of the assets of Pro Computer Sciences for an undisclosed sum. Pro-IV was conceived by Pro Computer founder Suchil Garg when he was working for DTA in Hawaii, but by 1981 four firms, including McDonnell Douglas's Microdata had taken licences to it. The last retained the Pick licence when Pro Computer reacquired the other three. Pro-IV is now available on IBM and ICL mainframes, DEC and Honeywell minis and Unix and Xenix micros but the cost of developing all these versions led to a cash crunch just before Christmas. Garg predicted in September 1985 that Pro Computer would be running at between \$10m and \$12m by the end of 1986. The UK ProLab Plc end had £1.7m sales last year. Suchil Garg will enhance Pro-IV under an initial two-year contract.

INMOS TRAM EASES TRANSPUTER INTERLINKING

With microsystems accounting for 65% of its business Inmos International plc has launched and is delivering a new range of board products. The Tram (Transputer Module) board range comprises a family of daughter modules, each with a different transputer and memory configuration that can be stacked on a Trams mother board as the user's application demands. The mother board can be used to interface the transputer array into a host computer such as an IBM PC, Apollo or Sun workstations and to "software" networks of transputers into configurations such as matrix or tree structures. Each module has a standardised interface which comprises a 16 pin dual-in-line socket with 3.5" pitch: the 16 pins support four transputer links, power, ground and clock pins and two other pins. The smallest module configuration has a T414 transputer with 32Kb static RAM and costs £384, the largest configuration has a T800 with 8Mb dynamic RAM and is priced at £4,270. Although only officially announced today the company has already shipped Trams to Apollo Computer which will be announcing a range of boards for its Domain 3000 and 4000 workstation series for added power and versatility. Start-up Niche Technology is also taking the Trams. Inmos expects to sell a number of the modules to customers like Niche that are developing add-in boards for workstations to be used in specific applications, Inmos points out that by taking the modules the companies save themselves time and effort which they can devote to developing application-specific machines. Inmos also has a Trams board for VME-based systems and will be bringing out mother boards for VAX and PS/2 machines in the future. New versions of Inmos' compilers will be launched during this quarter as well as a D705 Occam toolset aimed at scientific language developers and includes a compiler, linker, and configurator for an IBM PC using Trams.

RAIR TARGETS SOPHISTICATED USERS WITH COUNTERPOINT HARDWARE

TFB Rair is following in the footsteps of fellow British micromaker Apricot by moving upmarket with its Black Box III range, launched at the Which Computer Show in Birmingham this week. The new machines are the result of a "near exclusive" manufacturing licencing agreement between Rair and Counterpoint Computers (recently renamed Interpoint in the UK), Slough, England. Rair will assemble and rebadge the 68020-based System 19K multiprocessors at its central London headquarters, providing Counterpoint with its first major distribution outlet in the UK, and extending the Rair range from its previous 80386-based 24 user systems (UX No 94) up to a maximum of 128 users. Rair says the new range will offer its network of sixty resellers a low-entry level cost to the larger systems marketplace, offering incremental field upgrades by mixing and matching the various processor types - main cpu, and up to nine application, terminal, and display processors, all 68020-based - that make up the modular systems. The Counterpoint architecture claims to combine the advantages of the shared memory model (Sequent, transputer) and networked processors (Convergent Megaframe) by providing a distributed dual-port memory, allowing each processors' 2-5 Mb local memory to be addressed over the system buses - individual processors can directly access all system memory, while bus traffic processor can directly access all system memory, while bus traffic is reduced as the processors address their own memory most of the time. The C-XIX (Unix) operating system distributes the computing load across processors, with the main and applications processors each having their own copy of the kernel. Counterpoint says that in designing what it calls the OEM/VAR machine it had to stick to standards, so SVID, Posix, and X/Open compatibility is supported. Software shown at Which included Uniplex, Q-Office., Unify and Informix, plus Counterpoint's own icon-based graphical user interface. Prices for a typical entry level system were quoted as £20,000 for 15 users, 100 Mb disk, 60 Mb tape and 3 Mb RAM; a 36 user system with an additional 3 Mb application processor and two terminal processors would cost £38,000. Rair would not forecast numbers of expected sales, but said that its existing 30,000 small machine user base alone represented a significant potential business opportunity. Manufacturing is expected to begin in the next two months.

32332-BASED BOARD HAS HIGHEST COUNT OF VLSIS

A 32332-based board from Forum, a French board maker, is claimed to have the highest count of VLSI chips on a compact single board. The single board includes a 15MHz 32332 CPU chip, a 32382 memory management unit, a 32381 arithmetic unit, 16MB of RAM, four VLSI chips for the interface circuits, and a count of 9 other VLSI chips. The total size of the board is 30cm by 30 cm (about 11 inches per side). The board is offered with Unix System V and can support up to 64 users. Other features include a 4MIPS operation speed and support for a hard disk with up to 4.8 gigabytes of storage.

APPLE, DEC TEAM TO OFFER COMPLETE ALTERNATIVE TO IBM

Apple Computer Inc and Digital Equipment Corp duly announced their agreement to develop interfaces between Apple's Macintosh and DEC's VAX computers, and, as expected the agreement does not go beyond technical collaboration at this stage, although it is believed that much a closer relationship is under discussion. Apart from the need of both companies to be able to offer major users a complete alternative to IBM, the agreement is spurred by the fact that 36% of VAX users already have Macintoshes in their shops and are actively seeking to integrate the two. The aim of the collaboration is to provide a consistent set of application programming interfaces, and to make the Open Systems Interconnection protocols the framework for integration of the two environments. The pair have given themselves eight months to put flesh on the bones of their plans and technical specs will be given at a joint developers' conference in August.

AS DEC, 3COM PROPOSE PHONE WIRE ETHERNET

DEC and 3Com Corp have put a proposed standard to the IEEE 10BaseT Working on standards for 10Mbit-per-second Ethernets on common telephone wire, saying it offers the best means for supporting existing IEEE 802.3 coaxial standards, meeting the 10BaseT aims and maximising customer investments in thin-cable - 10Base2 - and standard-cable - 10Base5 - Ethernets. A key element of the proposal is use of a bi-directional signalling scheme, so a single pair of wires can carry both send and receive signals, enabling multidrop co-ax connections from a single connection to twisted pair. It also defines two attachment unit interface-compatible architectures, one needing a 10BaseT medium attachment unit at each end of the twisted pair segment, providing point-to-point connection between the workstation and the telephone wiring box, the other allowing coaxial multidrop of additional stations from the first. The pair reckon that their users together represent the world's largest installed Ethernet networks base.

PHOENIX SETS OEM PS/2 CLONE DESIGN CENTRES

Phoenix Technologies Ltd is opening a number of full-service design centres worldwide to provide a complete service to OEM customers wanting to clone the IBM PS/2 Models 25/30, 50, 60 and 80 as well as do non-Micro Channel-based 80286 and 80386-based systems. Phoenix says the centres will be staffed to provide the OEM client with expert engineering partners to produce complete systems using the Phoenix line of compatibility software, software application and option testing, testing and reporting, and implementations of all Microsoft operating systems software, including OS/2 and OS/2 with Presentation Manager. Initial centres will be in Cambridge, Massachusetts, Honolulu, Hawaii and Scotts Valley, California, but future sites for centres are being considered for Europe, Taiwan, Tokyo and Korea.

COMPUTER AUTO DEMANDS MICROCHANNEL POUND OF FLESH

Computer Automation Inc, Irvine, California is determined that no-one will clone IBM's Micro Channel architecture without paying the former minimaker a royalty on a key patent to which IBM took a licence prior to the PS/2 launch last year. The key patent is on an Automatic Modular Memory Address Allocation System, US Patent RE31,318, which the company and industry observers believe to be an important, if not indispensable, element in the Micro Channel. And anyone thinking of cloning the PS/2 needs to act fast - Computer Automation is offering a discount to those who sign a licence agreement before All Fools' Day, April 1. It warns that manufacturers who may have obtained Micro Channel related licences from IBM or relied on IBM's published design specifications did not secure any rights under the patent, which relates to add-on memory devices providing output signals indicating the memory capacity of the device, and to processors using the data to determine total available memory space. Add-on memory boards are likely to infringe the patent. Charges are a non-refundable advance of \$25,000 for low volume, \$300,000 for high volume. Royalties for low volume range from \$5 per down to \$2 per unit for processors, \$26 per unit to \$12 per unit for systems; and \$5 to \$2 per megabyte of memory for add-on memory boards. High volume royalties go from \$2.50 to \$1 per unit for processors; \$13 to \$6 per unit for systems; and \$2.50 to \$1 per Mb for memory boards. Before April 1, there are concessions on infringements prior to January 1.

CAUTIOUS DEC DOES WELL WITH WORKSTATIONS NEW 3000 GREETED WITH ENTHUSIASM

Commenting on the company's first half figures - net up 32% at \$599.5m on turnover up 23% at \$5,312m president Kenneth Olsen says "We are gratified that revenues continue to grow at a rate which indicates market share gains. Business overall is firm and our international business remains quite strong. Some of the industry sectors that performed particularly well in the quarter include health care, electronics, aerospace, retail, financial services, and state and local government." James Osterhoff, vice president of finance said, "We entered this fiscal year with an aggressive growth plan and we remain essentially on that plan. In light of the uncertainties relative to the economy over the next several months, we have become more cautious regarding new investment commitments for the second half in order to protect profitability." The company indicated that growth was strongest at the low end, citing the MicroVAX and VAXstation lines, which it says continue to find broad appeal across many industries and geographies as workstations, servers and in Local Area VAXclusters. The newly announced MicroVAX and VAXstation 3000 products "were greeted enthusiastically by customers" and volume shipments will begin in the third quarter.

UNISYS CELEBRATES UNIX SALES

Unisys chief executive Michael Blumenthal told Dow Jones that the company had been doing extremely well with its workstations and mid-range computers that use the Unix operating system, noting that Unix system sales tripled in 1987 to \$300m and should surge to between \$450m and \$600m in 1988, reaching \$1,000m before long. "Not only have we seen no (weakness), we've had the strongest quarter we've ever had in terms of orders. We go into the new year with a comfortable backlog", Blumenthal told Dow Jones reporter Paul Carroll this week. Blumenthal, in what is becoming an annual "state of the company" message, was responding to concern on Wall Street that the computer market may have weakened since Melt-down Monday. He forecast "good, solid, double-digit profit growth" in 1988 on a single-digit increase in turnover. He also said the company was encouraged by initial results from its plans for generating revenue in 1989 and beyond - crucial, since Unisys' initial successes have come from cost-cutting, and those benefits can't carry through for many more quarters. For 1987 the company expects to report earnings of \$2.90 to \$2.95 a share fully diluted, and hopes to be toward the high end of that range. At the time of the merger, Blumenthal talked of earning \$2.67 to \$3 a share in 1987, but analysts generally expected \$2 a share or even less. The current company forecast would put net income at \$580m to \$590m, compared with a loss last time of \$43.4m after \$280m in charges. Blumenthal said turnover increased 15% to 17% in the fourth quarter over ~~turnover from continuing operations of \$2,400m, implying sales of \$2,760m to \$2,810m in the quarter, and \$9,670m to \$9,720m in the year, still shy of the magic 10 billion dollar figure.~~

"FIRST WYSIWYG" SPREADSHEET FROM INNOVATIVE ON APPLE MAC

Innovative Software Inc has announced Wingz for the Apple Macintosh claimed to be the first "WYSIWYG integrated spreadsheet." According to George Everhart, director of business marketing for Apple Computer, "Wingz supports the full range of Macintosh features and capabilities. Wingz, coupled with the Mac's rich user environment, provides business and professional users the power and flexibility to accomplish virtually any task with greater impact and efficiency." Wingz will run on either the Macintosh Operating System or under the A/UX implementation Unix, taking full advantage of Apple MultiFinder and the A/UX multiuser and multitasking capabilities. Wingz offers an array of spreadsheet features that Innovative claim are among the most sophisticated currently available for Macintosh business productivity software, including: 32,768 row by 32,768 column matrix; over 180 functions including business, scientific, financial and general purpose; user definable functions; sparse matrix memory management; minimal, natural or background recalculations; relational spreadsheets; import/export Lotus WKS, WK1, Sylk, DIF, Smart and Text. Desktop publishing capabilities include: dynamic links to spreadsheets; up to 256 stylesheets allowing users to define formatting, justification, fonts and colour, from a palette of 16 million colours; graphics toolbox; import of scanned images, paint and draw files. Graphs can be created in a single step by clicking on the graph tool and marking the area for the graph to occupy. An automatic layout mode places titles, legends and plot areas within the designated graph area, or layout can be placed manually. On output, one command can print an entire sheet, including any combination of numbers, charts, words and images, on a single page. A text editor allows text entries to be entered, sized and placed anywhere on the worksheet. The editor includes support for multiple fonts, paragraphs with separate margins and indents, tab stops, and formulas referring to worksheet cells.

VALID INTRODUCES ACCESS - REDUCES EDA SOFTWARE COSTS?

Valid Logic Systems Inc has introduced software that allows customers to configure network systems of electronic design automation software based on expected usage, rather than the traditional turnkey approach of purchasing application-specific EDA software for each workstation. With Access, Valid's EDA application software is a network resource, with each application tool available to each user. When a software application is needed, for instance schematic capture, the user "checks it out" from the network server, uses the tool at his node, and returns the software package when finished with that portion of the design. This is in contrast to the traditional turnkey approach that permits the design engineer to use only those application tools resident on a particular network node. With Access-configured EDA environments, each workstation on the network is general purpose; that is, not dedicated to a specific application. "As a result of recent hardware trends, especially the move to industry standard platforms and falling hardware prices, EDA software and its management represents the largest portion of total EDA cost," said Joseph Prang, Valid product marketing vice president. "By making software a shared network resource, Access allows maximum software utilization at minimum cost. And since hardware prices have dropped to a point where each engineer can have a desktop workstation now, each engineer also has access to the entire range of EDA software available on the network." Valid points out that an installation with 35 desktop workstations may require approximately \$700,000 worth of EDA software but with Access, the same installation may only require \$575,000 in software, and would better match the customer's actual software usage. Available now on Sun workstations Valid's Access-based systems can be bought in hardware/software configurations, or as a software-only upgrade to the customer's existing installation. All Valid's application software is available through Access, there is a per-node fee to install Access.

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Whilst Apple Computer would not confirm our story last week (UX No 162) about promoting its A/UX user interface as an industry standard, it did say that a series of connectivity products allowing other Unix machines to be front-ended by the Macintosh interface would form part of the expected announcements at Uniforum.

- 0 -

TIS Ltd has announced the first order for the MIPS Computer Systems M/Series RISC-based systems since it became the UK MIPS distributor back in September of last year: said to be worth £1 million over the next two years, TIS is to supply electrical wholesaler Bennett and Fountain with six MIPS M/1000 machines.

- 0 -

Valid Logic Systems Inc, San Jose has landed a \$20m two-year credit agreement with Chase Manhattan Bank of New York; other banks will participate in the revolving line of credit, which replaces short term credit agreements totalling \$14.5m with Chase Manhattan and "another bank" - in addition to the new facility, Valid has about \$3m in borrowing arrangements with two foreign banks: commenting on the new line, the company says that Valid Logic's turnover "has been growing at over 60% during the past nine months, and this credit facility should allow us to continue to finance our working capital requirements".

- 0 -

And General Automation Inc has won agreement from Midland Bank Plc in London for a sterling-denominated 10-year term loan for £1.4m on which only interest will be payable during the first year: the rate is 2.5 percentage points above the London Inter-Bank Overnight Rate - the Midland has also opened a revolving credit facility for General Automation's UK acquisition, Aston Technology Ltd.

- 0 -

Computervision Corp saw fourth quarter net up 131.6% at \$8.0m against a period including a gain of \$1.5m from warrant sales on turnover up 13.8% at \$155.4m; net for the year 31 was \$19.5m after a \$7.5m gain from sale of a minority interest in its Japanese unit and sale of shares and warrants, against a loss last time of \$5.8m, on sales up 14.0% at \$564.0m.

Minigrams

Apollo (UK) has a new Managing Director, replacing John Parkinson who left at the end of last year: he is John Anderton, who joined the company on 4th January from Honeywell Bull, where he was Director of Manufacturing Control.

- 0 -

And the rumour is that Apollo's answer to the Sun SPARC RISC microprocessor (UX No 160) is now more likely to see the light of day towards the end of February than in this month.

- 0 -

Intel Corp has reported a fourth quarter net profit of \$96.0m, after a \$24.0m tax gain, compared with a loss last time of \$16.0m, on turnover that rose 60.7% to \$572.0m; net profit for the year to 26 December was \$248.0m, after a \$73.0m tax gain, compared with a loss last time of \$173.0m, on turnover that rose 50.4% to \$1,910.0m: net per share was \$0.55 in the quarter, \$1.38 in the year.

- 0 -

Cocking a snook at embarrassed rival Tandem Computers Inc, whose fourth quarter doesn't seem to have delivered the goods, Stratus Computer Inc last week rushed out an announcement that it will be reporting record fourth quarter figures.

- 0 -

Expanding on its neural network computer simulation announcement, Fujitsu Ltd says that the putative machine would have an "infinite" number of signal transmission routes between the node processing elements that will make up the computer: the simulator has 100,000 nodes - each node a processing element with its own memory - networked with a million paths between neurons, an average of 10 connections per node, although Fujitsu says that each neuron can "see" 50 signal transmission routes compared with the mere four supported by the Inmos Transputer; Fujitsu's next target is to perfect a super-heat-resistant neuro-chip node microprocessor, likely to take two to three years, after which it hopes to use it to build a neural computer made up of millions of neurons, which it believes could emulate the functioning of a vertebrate or even a human brain.

Honeywell Bull is test marketing the Unigem software from Software Laboratories on its stand at the Which Computer? Show this week with a view to signing a deal with the Dublin, Ireland-based company.

- 0 -

I/O magazine reports that a Japanese language version of Borland International's Turbo C was completed in July 1987, but was scrapped before release - because Borland fell out with the distributor which developed it, Southern Pacific and told it to abandon the development effort in August: Southern Pacific believes the reason is that Borland plans its own Japanese subsidiary and wants to collaborate with other Japanese companies; since, it claims, Borland approved the development, Southern Pacific wants the Scotts Valley, California company to pay its costs.

- 0 -

Groupe Bull has reorganised its marketing operations to create two major divisions, each reporting to managing director Francis Lorentz: the Direction Commerciale France will take in the mainstream and mass-market domestic operations, and the Direction Commerciale International will consist of three subdivisions - West Germany, the Rest of Europe, and "Overseas".

- 0 -

And the trades unions at Bull's plants in the Grenoble area say that the company is preparing to lay off 300 Bull-MTS mini and micro manufacturing employees in the area, and 600 all told in the MTS unit: they expect cuts in other parts of Bull to take the total to 750 or 800 staff.

- 0 -

Systems Marketing Ltd of Newbury, England has announced 'vi' and intended to give these users Unix experience before investing in new hardware.

- 0 -

Multiview developer JSB Macclesfield, England will be announcing a deal with a "major international computer company" at Uniforum in Dallas.

- 0 -

NCR Ltd has signed up Powerscourt Ltd, Maidenhead, England under its Partners in Business programme: as part of agreement Powerscourt has ordered seven Unix-based Towers valued at £500,000.

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Number 164

PRIME AND CYDRONE LAUNCH FIRST "DIRECTED DATAFLOW" MINISUPER

Prime Computer moved into the minisupercomputing market on Monday with the launch of its MXCL 5, the result of a strategic partnership with Cydrome Inc, Milpitas, California (UX No 157). Claimed to be the first commercial product to take advantage of dataflow parallel processing, the MXCL 5 will be sold exclusively by Prime throughout Europe, and to manufacturing and financial services organisations in the US, where Cydrome will also be selling the machine (as the Cydra 5) to government, education, and research users. The Cydrome "directed dataflow" architecture, in development since March 1985, spreads the computing load over five specialised subsystems, including a central 64-bit numeric processor, up to six Motorola 68020 interactive processors, two I/O processors, a 68010-based service processor, and a two-part memory subsystem providing 256 Mb main memory and 64 Mb support memory. Sophisticated Fortran 77 compiling technology, and a port of SVID compatible Unix V.3.1, optimised for symmetric multi-processing and transparent load balancing, results in a performance said to be five to ten times the floating point performance of comparably priced minisupercomputers, and suitable for the transparent parallelisation of a wider range of coding options than vector processors. Two base configurations are offered with different memory options: the entry-level MX1201 with 8 Mb each of main and supporting memory and associated peripherals is priced at £387,000 (\$549,000); and the 1401 with 64 Mb main memory and 16 Mb supporting memory costs £518,600 (\$734,000). Full configurations are expected to cost between £1.5 - 2 million. Prime would not be drawn on how many systems would be sold over the next year, but did say that it would be looking first at its existing user base, many of whom were currently either using Prime 50 Series minicomputers or Cray bureau services for intensive computing. Jerry Butler, Prime VP of Engineering and Scientific Products, said that the expansion of Prime's CAD/CAM users base brought about by a successful merge with Computervision, would have "a significant effect on this market".

ERICSSON PERSUADES NOKIA TO BUY ITS COMPUTER BUSINESS

Computer and communications equipment manufacturer LM Ericsson AB of Sweden, whose commitment to Unix includes an OEM deal with Sun Microsystems and membership of the X/Open Group, has thrown in the towel on its struggling computer business. The company announced last week that it had reached agreement with Nokia Oy of Helsinki, Finland for the sale of the data systems division of Ericsson Information Systems, which represents substantially all Ericsson's computer interests. No indication of the price to be paid was given, but Ericsson will retain a 20% interest in the new Nokia Data, which is to be headquartered in Sweden. The Ericsson businesses employ 5,000 people and products include terminals, personal computers, minicomputers, and small business and banking systems. Despite being a major Swedish manufacturer, the company only had the relatively low status of third class approved computer supplier to the Swedish Government, which is heavily committed to Unix. The Nokia lineup includes PCs, banking and point of sale systems, and Kalle Isokallio, president of the proposed company, said that the Sun workstation line would be continued but that it may be limited to Scandinavia; he added that the company wanted to retain its X/Open involvement. Included in the purchase are factories in Sweden, and the marketing companies in the UK, West Germany, France, Sweden, Denmark, Switzerland, the Netherlands and Spain. Nokia will also acquire Ericsson associate Oy Dava Ab of Finland. Nokia is not acquiring any operations in North America or in Norway, Belgium, Ireland, Austria, Italy, Australia or New Zealand, and related activities in these countries will continue to be handled by Ericsson's sales organisations. Ericsson says it is divesting the business, which has annual sales estimated at some \$630m, to concentrate on the areas where it is strongest, and that the rapid acceptance of communications standards means that Ericsson does not need a captive computer business. The business has almost certainly never turned a profit in the last 15 years. The deal still needs regulatory approval from both Sweden and Finland.

ITL DEVELOPING OWN FAULT-TOLERANT UNIX MACHINES

Not content with reselling US manufacturer Sequoia Systems Inc's Unix machines, British minimaker ITL is developing its own range of Unix-based fault-tolerant systems which are intended to eventually succeed its proprietary Momentum product line. The new products, which will combine ITL hardware with software based on Sequoia's Topix operating system, will come in below the Sequoia systems that ITL sells as the 21090 range and are predicted by ITL to offer two to three times the price performance of the 21090. They could be in beta test by the end of the year, and will complete an across-the-board commitment to Unix by the Hemel Hempstead, Hertfordshire manufacturer, which also sells Motorola's System 8000 supermicros rebadged as the 21040. ITL will be using ASIC technology for the range, and is adopting Tektronix's PCB WorkSystem and Gate Array WorkSystem to speed the design process. Although convinced that ASIC technology will improve reliability and increase performance of the resulting product ITL is approaching the project cautiously and will have two prototyping stages. The first phase, discrete semiconductor design, has already begun and is due for completion at the end of the second quarter. Work on an ASIC design will then start and the company hopes for a beta test product to be available at the end of the year.

FINANCIAL DEALS FOR UNIX

Major orders from the TSB Group and the Bradford & Bingley Building Society have underlined the popularity of Unix amongst UK financial institutions. The 1600 branch Trustee Savings Bank is part-way through a £16 million project to establish a communications network for voice, data, and image processing that will eventually tie-in the company's entire computing resources: a key component is a new Network Management System currently being designed by ICL to run on its DRS300 range of micros under Unix, which will be installed some time this year; it will handle basic transmission control. And Philips P90000 systems supporting over 1,000 terminals have been installed throughout the 250 branches of the Bradford and Bingley Building Society, in a deal said to be worth over £4.5 million.

PHILIPS SIGNS WITH SHARP FOR UNIX DISTRIBUTED PROCESSING SOFTWARE

Philips International BV has signed a multi-million dollar agreement with IP Sharp Associates Ltd of Toronto, Canada, for a Unix implementation of Sharp's decision support tool, Viewpoint. Viewpoint was originally developed for mainframes to allow users to work on different databases with different query and report languages but all appearing the same through using Viewpoint. Philips worked with Sharp to develop a Unix-based version realising that distributed processing would have the same problems. The Unix variant, sold as Allround View by Philips, includes features such as: access to MVS-based mainframe databases such as DB2, Adabas and IBM OS files; access to Unix database systems and files; report generation, electronic mail, graphics, ad hoc enquiry facility and word processing; integration of multiple P9000s in an Ethernet network; PC integration under Unix; DISOSS support through SNA; and national language version support. Allround View will be sold into large corporations with existing data processing facilities for applications such as financial modeling systems, stock control, planning systems, personnel, and payroll. The first system to be installed by Philips will be at its corporate headquarters in Eindhoven, The Netherlands to deal with its administration. Terms of the agreement were not disclosed.

TOPS AIMS TO SELL 125,000 NETWORK PACKAGES BY THE END OF THE MONTH

Sun Microsystems owned TOPS claims to have sold 100,000 of its network packages and expects to have sold 125,000 by the end of January. The Berkeley, California company also announced a new hardware device that attaches desktop computers and peripherals to low-cost AppleTalk/FlashTalk networks. The new product, called TOPS TeleConnector, supports FlashTalk, TOPS' standard for AppleTalk communications. FlashTalk allows PCs on an AppleTalk network to communicate at three times AppleTalk speed and supports PC- to-Macintosh communications at the standard AppleTalk rate of 236 kbps. TOPS TeleConnectors are fully compatible with AppleTalk networks and Farallon's PhoneNet Plus. The TOPS TeleConnect Systems allows networking software to run over accessible, twisted pair cabling, such as standard telephone wire. The system is now shipping to authorized TOPS dealers at the suggested retail price of \$59.

COMPUTERVISION CAPITULATES TO PRIME

Computervision Corp has decided its independence is at an end, and told its financial advisor Goldman Sachs to contact Prime Computer Inc to negotiate acquisition by Prime. It will nevertheless continue to look for an alternative merger partner.

UNIX PORTING CENTRE SET UP BY HONEYWELL BULL IN THE UK

Honeywell Bull in the UK last week announced its Unix Porting Centre despite it being operational for the last three months. The centre based at the company's Hemel Hempstead offices has had 16 companies pass through its doors: companies mainly from amongst Honeywell Bull's own Unix-based VARs and third party software developers porting applications including financial, local government, health care and manufacturing packages. The centre is open to anyone interested in porting Unix applications free of charge if no assistance is required but if any Honeywell Bull expertise is used a "nominal charge" will be made. The XPS-100 systems; Wyse terminals with printer, cabling and documentation suite; as well as office automation, dbms, 4GLs, communications and emulation software, are available at the centre. If the porting is approved by Honeywell Bull the company will offer to put the application in its approved list of Unix software.

DEC LEGITIMISES CONCEPT OF ADOBE'S DISPLAY POSTSCRIPT

The little noticed announcement by DEC that it had integrated Adobe Systems Inc's Display Postscript software into its DECwindows workstation architecture legitimises the decision of Steve Jobs' Next Inc to integrate Display Postscript with its forthcoming scholar's workstation, and indicates the direction Adobe plans to take as its market among laser printer manufacturers begins to mature. The DECwindows program is intended to provide users with network-transparent application programming interfaces for windowing, graphics and user interface services for its systems under the VMS, Ultrix and MS-DOS operating systems. The DECwindows architecture is based on the X Window System developed at the Massachusetts Institute of Technology. Display Postscript software brings to the screen the same graphics imaging capability as Postscript brings to printers and typesetters. Application developers get a programming interface to the complete range of Postscript's graphic and font facilities, enabling them to create their images within a window in a fully device-independent manner. Adobe, Mountain View, is actively seeking other licensees for the screen version of its page description language. DEC has also joined the Massachusetts Institute of Technology's new X Consortium, formed to champion X Window as a standard; the other members include Tektronix, Hewlett-Packard, Sequent Computer Systems CalComp and AT&T, each of which must pay a corporate membership fee of \$150,000. The consortium held its first meeting two weeks ago and decided on the priorities and aims of the group.

MOTOROLA TO SIGN UP AS EDGE OEM?

Edge Computer of Scottsdale, Arizona will not comment on a recent report that it is close to signing an agreement with Motorola Inc's Microprocessor Products Group, that would allow Motorola to offer the Edge 68000 series compatible custom and semi-custom gate array processors to customers that might otherwise desert the 68000 camp for a RISC processor at the top-end. Motorola has already lost Sun Microsystems because it could not offer the high-end performance it needed in the 68000 line, and others, including Apollo Computer, look set to defect in the near future. Edge currently offers a 6 MIPS cpu that is 100% 68010 compatible (it was designed before the 68020 was announced), configured as a single processor Edge 1100 system, and as a dual processor 11 MIP Edge 1200. Due out mid-year is the company's companion product to the 68030, with which it is fully compatible. Rated at 16 MIPS, and claimed to be between three to five times more powerful than the 68030, the processor will be used in the Edge 2000 Series, with the top-end 2400 system using four processors to deliver 55 MIPS. The report, in Computer Systems News, speculated that the deal could be extended from the Microprocessor Products Group to include Motorola's systems level divisions as well: an Edge spokesman, however, would only say that the company enjoyed "an excellent relationship with Motorola". Edge has a \$25 million three-year agreement with Olivetti for its processors (UX No 156), and says it has now signed two further OEM deals "in the \$50 million and up range", both with US companies targeting the European marketplace.

FRANZ PLANS LISP UNDER UNIX FOR CRAY SUPERCOMPUTERS

Cray Research Inc has signed Franz Inc, Berkeley, California to do an implementation of Common Lisp for Cray supercomputers under the Unicos implementation of Unix System V. Franz believes that its Allegro CL, already available on minis and mainframes under Unix, will be the first commercially-supported Lisp for a supercomputer. Allegro CL includes hooks that enable Fortran and C routines and programs to be integrated into the Lisp environment. The company hopes to have the Cray version out in November.

PRIME INSTALLS ITS FIRST MXCL 5 - FOR FREE

Prime Computer has high hopes for strong European sales of its MXCL 5 minisupercomputer, where it has exclusive rights to market the Cydrome machine (see front page). The pan-European launch, which was held ahead of the US event, included a tour around the University of Surrey in the historic town of Guildford, where the first MXCL 5 in Europe has already been installed. The University has not bought the machine, however, but in what is thought to be a unique arrangement, will use it for its own purposes in return for acting as a benchmarking centre and demonstration site for prospective Prime customers. An established Prime user, the University will show off Prime's connectivity tools that allow integration with its established Series 50 minicomputer series. Prime is no doubt hoping that the University will add to its software base - eight packages, including Math Advantage, Plot 10, Itpack, Fidap and the NAG library were included in the announcements. But according to Surrey University Vice Chancellor, Professor Bernie Cohen, some of the work would be in areas away from Prime's major concentration of Fortran applications, using the machine's processing power for artificial intelligence research.

PODUSKA PREVIEW'S STELLAR'S GRAPHICS SUPERCOMPUTER

The GS1000 graphics supercomputer under development at Stellar Computer Inc, Newton, Massachusetts, is due for first customer shipments in March, and founder William Poduska couldn't resist telling Computer Systems News a bit about it. The single-user machine sounds disconcertingly similar in concept to the one due at about the same time from Allen Michels' Ardent Computer Corp - formerly Dana. It is built of 61 custom CMOS circuits integrating 2m or so gates, designed by Stellar and manufactured for it by LSI Logic Corp. Texas Instruments is putting the thing together with Stellar at present doing only final assembly and test. According to Poduska, the GS1000 has an enormous 512-bit memory bus and is rated at about 25 MIPS and 40 MFLOPS. It will run Unix System V.3, offer the X Window facility, with TCP/IP and SNA networking as well as Sun Microsystems' Network File System. The Phigs Programmer's Hierarchical Interactive Graphics Standard from Template Graphics Software, San Diego will also be offered. Poduska expects the thing to sell for about \$100,000 and says Stellar already has a large order backlog from users in aerospace, automotive, image analysis, molecular modelling and fluidics field. He looks for profit by year-end, sales of \$400m to \$500m annually in five years, and a public flotation early next year.

SANTA CRUZ SHIPS XENIX V FOR PS/2 - DEVELOPED IN LONDON

The Santa Cruz Operation Inc is now shipping its SCO Xenix System V for the IBM PS/2, and claims that Xenix 286 for the 80286-based Models 50 and 60, and Xenix 386 for the 80386-based Model 80, represent the first commercial shipment of an operating system designed specifically for the PS/2. Key point is that they take full advantage of the 80286 and 80386 microprocessors, providing true multi-user and multi-tasking and using full-memory protection. SCO Xenix 386 runs in native 32-bit, demand-paging virtual memory mode on 80386-based machines. 80286-based Xenix applications will run without change or recompilation on all three models. Xenix System V is a commercially enhanced, unlimited-user licensed, System V Interface Definition-conformant version of Unix System V, and was developed in collaboration with Microsoft Corp - but the PS/2 implementations were done primarily at Santa Cruz Operation's European office in London. SCO Xenix 286 for the PS/2 50 and 60 is \$695 for the operating system, \$695 for the development system, \$195 for the text processing system and \$1,495 for the complete system. Prices on the PS/2 Model 80 are \$795; \$795; \$195; and \$1,695 for the complete system.

HP TO LAUNCH 68030 UNIX WORKSTATION - HELPING MOTOROLA WITH CLOCK SPEEDS

Hewlett-Packard expects to launch a 68030-based Unix workstations by the middle of this year and will become part of the HP 9000 Series 300 line. As well as the new workstations Hewlett-Packard will be bringing out 68030 processor board upgrades for the 9000 Models 330 and 350. The upgrade price for the 330 will be higher than that for the 350. HP also claims to be working with Motorola to produce a higher clock rate for the 68030. Additionally Hewlett-Packard Ltd last week stated that 1987 had been its best year since it started operations in the UK back in 1961. HP announced that it had a record turnover, export and profit figures for the fiscal year to 31 October 1987. Turnover for the period reached £428m compared with £354m for 1986. Exports were up £23m to £137m from £114m in £12.9m. The company points out that not just in the UK but worldwide 1987 was a watershed year. In the previous couple of years it spent a lot of money developing its Precision Architecture which paid off and to its surprise, despite the launching delay, gained a favourable, loyal response from its customer base. The split between Unix sales and proprietary sales is put at roughly 40% - 60%. HP says that in 1988 it will be positioning itself alongside DEC "as the natural competitor to IBM. HP believes that it has a major challenger to the VAX market with its HP9000 Series 840 model and during 1987 it challenged VAX users to run their applications on the system: it got 140 responses and claims that all HP environments beat the equivalent VAX by at least 50%. During 1987 HP won its first Queen's Award for export achievement and this week won the RITA Award for Peripheral Product of the year with its LaserJet Series II.

FERRANTI PICKS Am29000 RISC FOR NEW

~~GENERATION RASTER GRAPHICS SYSTEM~~
Ferranti Computer Systems Ltd is the first major UK company to declare for Advanced Micro Devices Inc's challenging new reduced instruction set microprocessor, the Am29000. Ferranti is to use the chip in a new top-end version of its VARS Variable Attribute Raster Graphics System line of graphics display controllers that are sold in Europe and US. Ferranti says it chose the Am29000 because it reckons it is "the most powerful commercially available microprocessor in the world today," adding that the pipelined high-performance RISC architecture allows it to function as a traditional CPU or a microcontroller. "The Am29000 is eminently suitable for the computation intensive graphics and database applications that our product is designed for," the company added. Six other companies of comparable size to Ferranti or larger have committed to the new AMD chip.

CHIPS, PHOENIX, ADAPTEC TEAM ON PS/2 CLONING KITS

Close behind Western Digital Corp, Chips & Technologies last week got together with Phoenix Technologies and Adaptec - and Santa Cruz Operation with Xenix for good measure - to offer complete cloning kits for the IBM Personal System/2 Models 50 and 60, with Model 80 to follow shortly. Chips will have chip set samples in the second quarter with volume soon after, Phoenix will offer a compatible BIOS, and Adaptec Micro Channel disk controllers.

DEC STRESSES SUPPORT FOR MS-DOS AS WELL AS APPLE MAC

Making certain that Apple Computer does not get uppity about its widely-hailed strategic alliance with DEC (UX No 163) - and perhaps feeling that that agreement had been too well received - the Maynard minimaker took advantage of a briefing in Boston last week to make it clear that its Network Applications Support facilities, providing common access to services on the open DECnet/OSI network, would be available to users of all the most widely installed operating systems. The Support facilities enable users to communicate and share information between VT family terminals, VMS on VAX, Unix on VAX, Apple MacDOS, MS-DOS and OS/2. The Network Applications Support programme is intended to provide common access across an enterprise-wide network so users can easily exchange mail and revisable documents, share files, and access databases and printers. DEC claims its facilities to integrate MS-DOS micros into its networks is second to none. The new DECnet licence also makes each DECnet VAX a licensed MS-DOS server.

AS APPLE SOLVES ITS SUPPORT PROBLEM FOR UNIX USERS

Apple Computer Inc addressed its long-standing customer support problem at the recent MacWorld Expo at San Francisco's Moscone Center. In order to answer one of the Cupertino, California company's biggest criticisms Apple, is laying plans to hook up its first ever direct telephone support hotline. Initially this will be for users of the Unix-based operating system for the Macintosh II - which Newsbytes hears comes on a daunting 70 floppy disks - which is due out in February. The hot line will replace existing support where a user must contact his dealer who may or may not be able to help. Meanwhile Apple is expected to open its AppleLink network to product buyers. Until now, it has been available only to dealers, staff, and developers. The target date for the AppleLink public access software is late 1988.

PRE-EMPTIVE WHICH? IS BUSY BUT DULL

The use of computer trade shows as the platform for new product launches now appears to have gone completely out of favour in the UK - last week's Which Computer Show, held at the National Exhibition Centre in Birmingham and regarded by many as Britain's leading computer event, had plenty of visitors but very few surprises. Products on show from Altos, Apricot, Jarogate, Redwood, Tetra, and Torch had all been pre-announced in the months before the show.

Altos Computer Systems fleshed out the UK launch of its Series 1000 80386 micro by revealing that the box's merged Unix/Xenix port would be made available on the Series 2000 by May of this year. Altos UK says it has sold over 300 Series 2000 micros since the launch three months ago - Managing Director Archie Thomas said that the company's 1988 plans included more systems at both low-end and high-end. AT&T's 3B2500 was introduced by British Olivetti to fill in the gap between the 3B2400 and 600 models - the 500 has a single integral disk, with caching and additional processor as optional rather than standard, as on the 600. A spokesman on the stand hinted that the next 3B2 Series launch (presumably the 3B2 700) would make use of AT&T's more powerful Western Electric 32200 processor. Applied Microsystems Technology Ltd of Cricklewood, North London, is close to launching a micro based on a 20MHz Intel 80386 processor with the clock speed turned up to 25MHz. With zero wait states, the company is claiming a blistering 32MHz performance for the box. However, it is having problems with the chips. Only one-in-ten are able to cope with the demand. The system, including a 40Mb hard disk, 80 nano-second RAM, and EGA card should be available in March for £3,995. UK general manager and ex-Tandy UK marketing director Ted Russell says the company will do around £15m this year, with two-thirds of turnover coming from overseas, mainly Egypt, Saudi Arabia and Kuwait. AMT's success in the Arab world is partly down to a hard disk machine for students containing a version of the Koran - the Islamic bible. And the Akhter Group Plc chose Which? to announce that it has taken a full Unix System V.3 licence from Unix Europe, the joint AT&T-Olivetti company. The licence will enable the Harlow, Essex manufacturer, best known for its PC clone sales to the UK Open University, to make certain, limited, modifications to the operating system on its new Regent series. The Regent 386, rated at 4MIPS, has a 20MHz processor with 2Mb of RAM, expandable to 8Mb; up to two 5.25" or 3.5" floppy drives; up to two full height 80Mb to 390Mb 5.25" hard drives conforming to the standard ESDI, or optional ST506 or SCSI, interfaces; a 60Mb half height tape drive; an optional CD-ROM or optical disk slot; and eight serial ports, each supporting a 14" amber mono display. A further 24 users can be added through the use of further communications cards. MS-DOS applications can be run alongside Unix ones using Windows 386. The Regent 386 starts at £3,000. Akhter is also demonstrating the Companion, an all-in-one photocopier, printer, facsimile and scanner that attaches to any IBM compatible PC and is a seemingly modest £2,500. European software distributor and consultancy Sphinx Ltd has won the rights to distribute Unix reports from Novon Research Group and Patricia Seybold's Office Computing Group in the UK and Europe. Sphinx has also been approved by Microsoft UK as an authorised OS/2 training centre.

PYRAMID PUSHES PICK THROUGH UNIVERSE

Pyramid Technology Corporation looks set to launch optimised versions of its hardware range for running Pick software, using the Pick under Unix emulation product UniVerse, developed by VMark Software of Natick, Massachusetts. Having developed UniVerse on a Pyramid machine, VMark first signed an OEM agreement with the supermini makers back in 1986, and extended the deal in August 1987 to cover worldwide distribution. Now Pyramid's UK operation in Camberley, Surrey, is gearing up to offer packaged systems running UniVerse to its European customers, initially on standard hardware. Support will be provided by VMark's exclusive UK supplier Logical Choice from its Oxfordshire base. Pyramid launched its R*TP specially configured version of the Series 9000 "minimainframe" back in October in a joint development project with database specialists Sybase Inc (UX No 148). Although Pyramid spokesman Chris Matthews would not reveal details, he did confirm that announcements were due over the next month, and revealed that Pyramid had already sold eleven systems running UniVerse to the Australian market. UniVerse takes a different approach from dual operating system implementations such as Sequoia's TOPIX; it implements the Pick shell and processes directly onto the Unix file structure as standard Unix processes. According to Logical Choice this results in no performance overheads when running standard Pick software. Four Pick versions, McDonnell Douglas, Prime Information, Pick, or Ideal (VMark's own idea of Pick) are supported. Separately Pyramid Technology will be licensing Unisoft Corp's UniTecs software package and as part of the same agreement, announced last week, Unisoft has bought a Pyramid Series 9000 model 9820. UniTecs emulates IBM's customer information control system on Unix systems. Pyramid hopes to attack the commercial transaction processing market with UniTecs.

ORACLE WINS CONVERGENT CTOS

Surprisingly for an original low-end operating system, Convergent Inc's CTOS is still very much alive and kicking, and the company has just signed Oracle Corp of Belmont, California to develop versions of Oracle's relational database products for systems that use CTOS. Oracle will sell the products and provide support for the CTOS market, which includes Unisys B25, and Convergent may also resell it to a limited number of its customers. The products will include Oracle's DBMS, SQL*Forms, SQL*Plus, and Pro*C, Pro*Pascal and Pro*Cobol.

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The Hamilton Group, as the Unix vendors objecting to AT&T and Sun's relationship have been dubbed (UX No 163) - named after the site of its first meeting, is hoping for a conference with Vittorio Cassoni this week or at least some time before Uniforum, starting on the 8th February: the sixteen companies that signed the letter to AT&T include Apollo, Apple, Data General, DEC, Gould, Hewlett-Packard, Honeywell Bull, Intergraph, Intergrated Solutions, MIPS, NCR, Prime, Silicon Graphics, Tandem, Unisoft and Unisys - the group says that another 15 or so companies are interested in being involved with any future developments.

- 0 -

Multiflow Computer Inc, Branford, Connecticut developer of the Trace family of very long instruction word supercomputers is making a strong case for being one of the survivors and thrivers among the current clutch of super start-ups: the company says that it shipped 11 Trace systems in the fourth quarter to December 31, bringing the total shipped since April to 19; customers include researcher and engineer Sachs/Freeman Associates Inc, the department of chemistry at Washington University in St Louis, Procter & Gamble and the US Naval Weapons Center in China Lake, California; the German distributor shipped two systems, one to Steiner Film Studios in Munich, the other to the department of electrical computer-aided design at the University of Erlangen-Nurnberg in Erlangen.

- 0 -

NCR Corp chairman and chief executive Charles Exley has handed the third of his titles, that of president, over to executive vice-president Gilbert Williamson, a 26-year veteran of the Dayton company who has a strong background in sales.

- 0 -

Pyramid Technology Corp has announced claims to have shipped its 1,000 computer system with the sale of a Series 9000 model 9840 to international couriers DHL Worldwide Express.

Minigrams

The Unix implementation being developed by Stratus for Olivetti (UX No 159) will also become part of the Stratus product line.

- 0 -

Altos Computer Systems has reported second quarter net profits up 152.0% at \$6.3m, including a net gain of \$3.1m from the sale of a portion of the company's investment in Informix Corp, on turnover up 15.6% at \$46.7m; mid-term net rose 123.7% to \$8.5m, including a net gain of \$3.1m from the sale of the Informix investment, on turnover up 19.7% at \$87.4m. Net earnings per share were up 168% to \$0.51 in the quarter, 128% to \$0.66 in the half.

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Pyramid Technology Corp has reported a first quarter net profit of \$1.8m, compared with a loss last time of \$353,000, on turnover up 45.5% to \$17.5m. Net earnings per share were \$0.22.

- 0 -

Sun Microsystems Inc has reported second quarter net profits up 65% at \$14m on sales up 101.8% at \$235.1m; mid-term net profits rose 77% to \$26.9m on sales up 104.7% at \$428.8m. Net per share rose 36% to \$0.28 in the quarter, 45% to \$0.74 in the half.

- 0 -

Judging by its first half figures - net profits up 77% on turnover more than doubled - Sun Microsystems should double in the year to June 1988 to join the ranks of the billion dollar companies.

- 0 -

In a surprising alliance, Xerox Corp has signed a letter of intent to distribute IBM's PS/2 line in 11 Latin American and Caribbean countries - Bolivia, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Panama, Peru, Uruguay and Venezuela, and other countries may be added later: the PS/2s are already marketed there by IBM through all the usual channels, and that arrangement will continue.

- 0 -

Vinod Khosla, a co-founder of both Sun Microsystems and Daisy Systems, becomes the ninth general partner at San Francisco venture capitalist Kleiner Perkins Caufield & Byers.

Look for Fujitsu Ltd to apply to join the X/Open Ltd group: the company says that it is developing applications to X/Open standards.

- 0 -

The combination of L M Ericsson's computing interests with those of Nokia Oy is expected to create a company with annual sales of some \$1,200m, and the price to be paid by Nokia to create a business in which it will hold 80%, is thought to be between \$150m and \$170m.

- 0 -

L M Ericsson is just the latest in a string of companies that have come unstuck pursuing the chimera of the synergistic "convergence of computers and telecommunications": the only convergence STC Plc seems to have found in its acquisition of ICL is the ability to merge the two companies' headquarters press offices; AT&T's move into the computer business is little short of a disaster; Northern Telecom came badly unstuck with the acquisition of two unsuitable US computer companies (Data 100 and Sycor, for the record), and pace the Vienna is still scarcely visible in the computer business; and coming from the other direction, IBM has not been nearly as successful as it imagined it would be in the telecomms business.

- 0 -

A commercial MicroBTron version of the BTron variant for personal computers is planned for May ahead of availability of the full version of the Tokyo University operating system: the micro version includes Japanese character and graphics processing, and Matsushita Electric has already announced that will be involved in marketing the product, and Oki Electric and Toshiba Corp are expected to follow suit.

- 0 -

Cambridge Consultants Ltd of Cambridge, England has taken a 6% equity stake in the start-up transputer company Niche Data Systems based in the US and UK - CCL has an option to acquire a further 4% equity stake.

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Number 165

DATAPOINT LOOKS TO NORWAY FOR NEW UNIX PUSH

Datapoint Corp, San Antonio, Texas, is to announce a major OEM deal with tiny Norwegian computer manufacturer NCI Norsk Computer Industri A/S at UniForum in Dallas next week. Datapoint says it has been working with the 45 employee company for some time, and is to take 2,400 of the Motorola 68030-based multiprocessor systems in a three year OEM agreement. The deal, valued at around £30 million in end-user terms, also involves the supply of software application systems from Scanvest Ring, Oslo, which owns 36% of NCI. The NCI 2001 is a loosely coupled modular system, with standalone units supporting up to 80 users and including a maximum of four 68030 application processors, two file processors and four terminal processors, all 68020-based. Communications within each module take place on a VME bus, and individual cabinets can be connected together through a high speed local area network, which according to NCI allows a dozen systems without significant performance payoff. Software is Unix V.3. NCI is currently producing around 25 machines per month at its Sandnes manufacturing plant, but is planning "a big expansion" as a result of the deal; although Datapoint says it will also be manufacturing machines. The official launch will be at the Hanover Fair in March, and NCI is currently looking for distributors and OEMs in Europe. Datapoint expects to sell the machines in thirty different countries. However, the company's previous attempt to move into the Unix market via an OEM deal with Charles River Data Systems in 1984 sank without trace.

ALLIANT SOUPS UP ITS FX LINE - SETS APPLICTIONS CENTRES

With recent or imminent new products from Convex Computer, Multiflow and Cydrome the minisupercomputer market grows more fiercely competitive by the day, and now Alliant Computer Systems Corp has replaced its existing top-end FX/8 with two new systems claimed to double the performance of the range. The two systems are based on a new proprietary Advanced Computational Element (ACE). Additionally Alliant is putting its previously proprietary specifications of its instruction set for parallel execution into the public domain "to speed application development". Application Centres are also being planned for Japan and Europe. The company claims to have around 100 applications running on the FX series as well as its implementation of the Berkeley Unix operating system, Concentrix, and support for NFS, NCS, NeWS, X Window, TCP/IP support on Ethernet and Hyperchannel, the FX/C language, FX/Ada and Pascal. Alliant intends to add to its string of European offices, currently in the UK, France and the Netherlands, by opening one in Germany and in Italy in the near future.

TOSHIBA CONFIRMS UNIX PORTABLE AS GRID PROMISES ONE

Confirming our recent story (UX No 163), Toshiba America Inc announced that it will be launching the 80386-based T5100 15 lbs portable running Unix System V.3 with Berkeley 4.2 extensions and X- Window at UniForum next month. The machine will have 4Mb memory, 40Mb hard disk and 1.44Mb 3.5" floppy. It will be shown connected via Ethernet using Toshiba's optical and compact disk storage. Despite being a portable, it supports up to four users. Toshiba will announce price and distribution at the show. Toshiba is also the first Japanese company to become a sponsor of /usr/group. And Grid Systems Corp, Fremont, California has leaped in to say that its battery-powered 80386-based GridCase 1530 will be offered with both Santa Cruz Operation's Xenix System V and Interactive Systems Corp's 386/ix Unix at the UniForum show next week. The 1530 comes with a variety of storage and screen options including up to 8Mb RAM, a 29mS 40Mb hard disk, a gas plasma display and internal 2,400 bps modem.

NCR RENEWS ITS TOWER UNIX FAMILY WITH MAJOR ENHANCEMENTS

NCR Corp has rejuvenated its highly successful Tower Unix range with four new models, taking the top end up to a claimed 512 user system, and strengthened the positioning of the range as departmental systems with a clutch of Netbios and Token-Ring networking products. The new models introduce 25MHz 68020 processors and an enhanced tape and disk subsystem. Topping off the range is the 32/850, with up to six 68020-based application processors and claimed to handle up to 512 users, due in the third quarter 1988 and costing \$106,175. A new low-end 32/200, supporting four terminals and a PC LAN, brings the entry price down to \$5,445 but is said to offer the same power as the existing 32/600. In between, the 32/450 and 32/650 are said to be 50% faster in processor speed than the previous 32/400 and 32/600 models. The 32/800, 32/400 and 32/600 can be upgraded to the corresponding new models. The networking products, unveiled as the Tower LAN family, increase the level of integration with PCs on Token ring or Expanded Towneret networks: The \$1,230 Tower File Server provides a "transparent" Unix/DOS file system while Token-Ring support is provided by a \$2195 controller and \$530 Token-Ring Netbios. The previously promised TCP/IP support is now set for the second quarter 1988.

SUN SET TO INTRODUCE 80386-WORKSTATION AND/OR BABY SPARC

According to Computer Systems News Sun Microsystems is expected to introduce an 80386-based workstation this week and also reveal plans concerning its SPARC-based workstations. The publication also looks for the company to talk about a low-end SPARC that it is developing. Newsbytes, however, expects Sun to announce a four to seven MIPS SPARC workstation, which is rumoured to be called Roadrunner but Computer Systems News has heard the system dubbed the SPARCintosh.

ENCORE GOES FOR DEPARTMENTAL USERS WITH LOW-END MULTIMAX 310

Joining NCR angling after the departmental market is Encore Computer with a low-end Multimax systems. The Multimax 310 is based on the National Semiconductor 32032 and 32332 processors and is said to support up to 200 users. The system has a performance range of between four and 20 MIPS and has a tightly coupled, symmetrical parallel processing system. Like the 320 the 310 runs Encore's menu driven Unix interface, supporting System V.3 and 4.2 BSD, and the UniVerse Pick-under-Unix environment. Ethernet and TCP/IP are bundled with the system and NFS is supported. The 310 has support for Informix, Oracle, C, Fortran, Ada, Lisp, Pascal, Basic and Cobol. Encore intends to sell the 310 as a departmental system for applications such as: database management; transaction processing; software development; image processing; artificial intelligence; computational chemistry; and specialised government applications using concurrent Ada. The Marlborough, Massachusetts company claims to have sold the Multimax 310 to around a dozen customers including VMark Software also of Massachusetts and Matra Datasysteme SA - Encore's partner and distributor in France, Spain, Portugal and Italy. An entry-level four MIPS Multimax 310 with 16Mb memory, 300Mb storage tape cartridge and Ethernet adaptor is priced at \$89,000. A top of the range system costs upwards of \$500,000.

COUNTERPOINT USES MULTITECH DESIGN FOR LOW-END SYSTEM 15 - ALSO ADDS TO HIGH-END

Counterpoint Computers last week added to its range at both the high and low-end and will be changing its marketing strategy with the new machines to focus on selling to larger VARs and OEMs. These are the San Jose, California company's first new products since its buyout by Taiwan-based Multitech last November. The low-end addition is based on a design from Multitech's PC division, Acer Technologies Corp also of San Jose. The System 15 is a 20MHz 80386-based machine, supporting from two to 26 users, running Counterpoint's port of Unix System V, C-XIX, and Locus Computing Corp's Merge/386. The two high-end systems, available now, are extensions of the 68020-based System 19K. The System 22 and 22E both use the 25MHz version of the 68020 and will support from 17 to 192 users. The 22E differs from the 22 in having ECC RAM. The System 15 will be available in April and has an entry-level price of \$5,500 in OEM quantities. A 17-user System 22 configuration has an OEM price of \$19,000 and a 70-user 22E costs \$56,000.

NEW ACE FROM ALLIANT SPEED PARALLEL EXECUTION

The Alliant Advanced Computational Element is an enhanced version of the Computational Element used in the FX/8 incorporating new features that the company claims speed parallel execution (see front page). It has a new vector processor with reduced vector start-up time and ECL floating point units that, according to Alliant, improve vector point operations by two. Alliant says that the features of the new ACE produce a peak rating of 23.6 MFLOPS. The new ACE are plug-compatible replacements for the CE boards and are priced at £38,000. A new version of Alliant's VAX/VMS-compatible FX-Fortran has also been launched - Version 4.0 - which can detect places for parallel and vector execution and produces a Whetstone rating of 14.7 MWhetstones. Interactive Processors (IPs) are used on all the FX machines which allow VAX and workstation utilities to run on them, keeping the ACEs or CEs free for complex computations. The new systems will be shipped during this quarter. The entry-level FX/40 comes in at £105,000 and includes one ACE, one VME-based IP, 32Mb main memory - expandable to 160Mb - 1.1Gb disk storage, and a cartridge tape drive. The FX/40 can be expanded to include up to three ACEs and five IPs. The entry-level FX/80 is priced at £210,000 and has two ACEs, five IPs, 32Mb main memory - expandable to 256Mb - one 16-line multiplexer, 1.1Gb disk storage in parallel transfer striped configuration, and a tri-density magnetic tape drive. A fully configured FX/80 has up to six ACEs and five IPs and costs around £350,000. To date Alliant has sold 200 FX systems: 160 itself in the US and 40 through Apollo in the rest of the world. The US Army is the company's leading customer, taking 20 systems, with AT&T a close second on 17 systems.

NCR GOES FOR 25MHz 68020

When you sell as many machines as NCR does with the Tower, you can't rush to incorporate a new chip as soon as it arrives because there simply aren't enough chips to meet your needs. Accordingly the new Tower models use the 25MHz 68020 rather than the 68030 (see front page). Performance is also improved by use of an enhanced disk and tape subsystem to provide double the speed of the 400 and 600. The 32/850 comes with up to six 25MHz 68020-based applications processors, each with 8Mb to 16Mb memory, 40Kb cache and 68882 maths chip, a new file processor, up to 64Mb of system memory has new input-output hardware for external asynchronous devices, such as video display terminals or printers, but supports all 32/800 controllers, adaptors, processors, disk and tape drives and software, and is upgradeable from the previous line topper. Internal disk goes to 1.9Gb, external to 20Gb.

LORAL'S ROLM MIL-SPEC COMPUTERS TO TAKE MIPS COMPUTER SYSTEMS R2000

The Rolm Mil-Spec Computers division of Loral Corp, which previously specialised in ruggedised versions of Data General minis, is diversifying into Unix with an agreement to buy R2000 RISC microprocessors, its Unix implementation and optimised compilers from MIPS Computer Systems Inc, Sunnyvale, California under a contract worth \$15m over five years. Rolm Mil-Spec announced the resulting ruggedised, high-performance supermicrocomputer as the Shark this week. It comes in 8 MIPS and 10 MIPS versions with up to 64Mb main memory, and runs under MIPS Umips version of Unix System V.3. The C, Fortran, Pascal and Ada compilers are integrated with the operating system, which in turn is tailored to the MIPS architecture. The MIPS R2000 processor in the Shark integrates the Defense Advanced Research Agency's Core MIPS instruction set architecture with a VMEbus. The machine is aimed primarily at the military market; no prices provided.

REUTERS INTO UNIX WITH OEM PACT FROM ITS RICH TO SUN

Sun Microsystems Inc has achieved its ambition of breaking into the financial systems market with the Reuters Plc-owned Rich Inc financial hardware company in Chicago signing a "multi-million dollar" OEM agreement for its Unix workstations. The Sun-3 and Sun-4 stations will be used to support advanced analytics as part of the Rich Trading Information Architecture (TRIARCH). The Sun workstations join offerings from Reuters itself, DEC and IBM as TRIARCH platforms. There are 51 TRIARCH systems around the world - 33 in North America.

PRIME'S \$15 A SHARE WINS COMPUTERVISION

After feinting at each other for the past several days like a couple of heavyweights, Prime Computer Inc and Computervision Corp got down to business last week and announced that they had definitive accord for Prime's acquisition of Computervision at \$15 cash per share. Computervision is now recommending the offer to holders and Prime has extended it to February 4. Computervision will redeem its poison pill rights, and Prime will end its effort to replace the board with a slate of its own. Changing his tune completely, Computervision president Robert Cable now says "We are very excited about the opportunities ahead. Since we have been in discussions with Prime, we realise the very real synergy between both companies and what we can bring to the CAD/CAM market." The acquisition will cost Prime about \$435m and create a combination that should do \$2,000m or so this year.

APOLLO INTEGRATES NCS WITH OPERATING SYSTEM

Apollo Computer Inc has extended the capabilities of its Network Computing System (NCS) with the launch of a new operating system, Domain/OS, for its workstation product line. Domain/OS, which is a single system combining three operating environments - Unix System V.3, Berkeley 4.3, and Apollo's proprietary Aegis system, also addresses criticisms of a non-standard kernel in Apollo's previous Domain/IX Unix implementation, and clears the way for future workstation developments such as RISC architecture. According to Mike Gallup, Apollo's product marketing director, the system "forms the cornerstone for future workstation architecture and other Apollo product and technology developments". Domain/OS implements software tools, and a distributed registry based on its NCS architecture to provide a distributed operating environment, providing facilities such as transparent file sharing, automatic concurrency control, and the simple addition of new workstations to the network. Also included is dynamic linking of global shared libraries, demand paging across a network, and access control lists. Internationalisation support, using the ISO Latin 1 8-bit character set, reflects the growing importance of Apollo's non-US business. Domain/OS also supports Apollo's computer aided software engineering (CASE) toolset, and standard communications products. Available in the early Summer, the new operating system is said by Apollo "to provide a clear migration path to future standards, such as POSIX". Additionally Apollo workstations have been taken by Unisys Corp for software engineering applications at the company's Livingston, Scotland manufacturing facility. This Unisys plant is responsible for the design and manufacture of the Unisys Intel-based document processing systems.

CULLINET COMMITS TO X/OPEN FOLLOWING LAST YEAR'S NIXDORF DEVELOPMENT PACT

Cullinet Software Inc, Westwood, Massachusetts this week announced that it has extended its commitment to open architecture by adopting the guidelines for application- software portability set by the UK-based X/Open Co Ltd Portability Guide. The announcement extends Cullinet's commitment to Unix, initiated when the company agreed a joint development effort with Nixdorf late last year. The X/Open standards are intended to foster portability of applications at the source-code level and it defines a Common Applications Environment. X/Open says that it is aware of a number of companies using and the Portability Guide and developing products accordingly but cannot specify any products that are conformant until the testing procedures, currently being defined, are complete.

ATLANTIC OWNED CSD BRINGS OUT UNIX -BASED IMPCON FOR 6150

Computer System Development, part of the Atlantic Computers group since 1985, has launched its first Unix version of its Impcon manufacturing and financial system, for the IBM 6150. Previously Impcon has only been available on DEC VAX, MicroVAX and PDP 11 systems. Typical turn-key prices will be around £45,000, a step down from the current VAX installations which can mean £85,000 for the software alone. The system includes the full MRP11 modules as well as basic MRP, manufacturing resource planning, financial accounting, warehousing and distribution, contract costing, fixed assets, payroll, shop floor scheduling and staff attendance. CSD will be selling software only but works in conjunction with other members of the Atlantic group for hardware supply. Latest turnover figures release for CSD shows £18 million for 1986 and the company claims 7000 installed base.

"THE MOST IMPORTANT IBM ANNOUNCEMENT": PALO ALTO FIRM LAUNCHES QUARTERLY ON SAA

Finding the formula for a runaway publishing success is far from easy, but Killen & Associates of Palo Alto, California looks to have come up with a pretty promising one: you announce to all those data processing managers and independent software companies befuddled with Fear Uncertainty & Doubt that an introduction from IBM is even more important than those of OS/360 and Systems Network Architecture, and, having inspired the appropriate level of panic, promise to remove the sting by launching a quarterly publication on the subject - for an annual subscription of a mere \$995. The IBM announcement that should have us all shivering in our shoes is Systems Applications Architecture, and the quarterly journal is The SAA Spectrum. The brief for the editors is to address topics that are of strategic importance to major computer users, third party software developers and computer systems vendors, with analyses of key issues, technical interpretations and case studies to keep managers abreast of the latest developments and enable them to make informed decisions. If The SAA Spectrum does its job properly, it may well lead to many users and developers questioning whether SAA will live up to promise, in which case it could be \$995 very well spent. Killen promises that issues to be addressed in the publication include How quickly is SAA developing and being implemented? How are users reacting to SAA? How are software vendors supporting IBM's SAA thrust? The first issue will include two contributions on OS/2 and where it fits into SAA; importance of the Presentation Manager to SAA; three pieces about the SAA periphery - Unix and the similarity of AIX to certain aspects of the System 38; an examination of the implications of SAA on IMS or CICS; SNA, SAA and the significance of CPIC. And case studies will include a major IBM software vendor's view of SAA and a large user's plans for SAA. Other features planned for the first issue are planning for SAA - an introduction; a review of the first European SAA conference; commentary on the Adapso SAA Statement; and an interview with an IBM executive.

MICROSOFT CONFIRMS PLANS FOR "OS/3", CALLS IT OS/2-386

Microsoft Corp has now confirmed that it is in the "study and design phase" of developing what has been dubbed "OS/3", a version of the OS/2 operating system for the 80386 microprocessor - but the company is talking about a 1989 release rather than late 1988 as had been suggested. As well as making use of the demand paging of the 80386 to burst out of the 16Mb bounds of OS/2, the new operating system will support multiprocessors and an enhanced, "intelligent" file system. The company said that it would support the 80386 instruction set and provide support for a virtual 8086 mode where the 386 processor will set up multiple logical 8088s or 8086s in the machine, describing the strategy as "keeping our Windows/386 technology, marrying it with our current OS/2 technology, to form the OS/2-386 product. Since the 386 chip supports a much larger address space, we'll be able to get 4Gb of real memory and you'll be able to install 4Gb on each machine, with 64Tb (Terabytes) of support for virtual memory."

TOSHIBA DEVELOPS ITS OWN TRON MICROPROCESSORS

Toshiba Corp, which is not part of the triumvirate collaborating on microprocessors for the Tron operating system, plans to complete test manufacturing of two types of 32-bit Tron chips - one a special-purpose ASIC, the other general purpose - by the end of the year. The applications-specific part will be for machine control, and the general purpose part will be aimed at the personal computer market. The company is looking for performance in the 5 to 10 MIPS range. Toshiba will also start manufacturing Motorola's 16-bit 68000 family members at the two companies' Tohoku Semiconductor joint venture this spring but there is no date yet for start of 68020 and 68030 manufacture.

AS FUJITSU, MITSUBISHI PLAN G/MICRO-32 MEMBERS

Meantime it now transpires that in addition to Hitachi's G/Micro-200 Tron microprocessor, for which Fujitsu and Mitsubishi are developing support chips, the other two partners will each contribute a microprocessor of its own to the G/Micro-32 family. Fujitsu is working on the top-end G/Micro-300, which is being designed to deliver between 10 MIPS and 20 MIPS, with samples planned for the first half of 1989. Mitsubishi gets the low end of the line, for which no performance target has been given: the G/Micro-100 will be simpler and cheaper than the 200 with no on-chip memory management unit and two levels of protection compared with five on the Hitachi part, which is due to be out in volume in the autumn. Despite the lack of interest in Tron outside Japan so far - it may well become interesting if it is widely embedded in products exported from Japan - it is claimed that the Tron chips will also be very suitable platforms for Unix.

CONCURRENT RE-INSTATES UNIX WITH SINGLE PROCESSOR 3280

Eighteen months after the launch of its 3280MPS multiprocessor system, Concurrent Computer Corporation has introduced the second of its new generation machines - the uniprocessor 3280SP, offering a 6 MIPS performance for a base price of 200,000 (\$200,000 in the US). The 3280SP is a pre-packaged system with a maximum of 1Gb disk storage, 32Mb memory, and a claimed data throughput rate of 20Mb/sec, housed in a single 71 inch cabinet. Like the multi-processor version, the 3280SP is described as an "event driven" system, with multiple sets of registers allocated to different priorities of interrupts. But unlike the 3280MPS, the uniprocessor is offered with both Concurrent's proprietary OS/32 operating system and the Xelos V port of Unix: Xelos was never optimised for multi-processor use. But according to UK marketing manager David Steele, Xelos will in future play an increasingly important role as further members of the family are announced. Systems are available immediately.

CANADA MOVING TOWARDS UNIX -

POSIX PROCUREMENT STANDARD EXPECTED

The Canadian government is estimated to be about two years away from producing an operating system procurement standard. The government, which spends around \$1 billion a year on computer purchases, is moving increasingly towards Unix in mini and micro computers but because of the size of the organisation the government doubts that a single operating system, such as Unix, will be specified but a broader standard such as Posix could be favoured. Currently four of the government departments use Unix but amongst the others there is still a great deal of loyalty to proprietary systems from the likes of IBM, DEC, Data General and Prime. The Central Treasury Board is one of the departments that has adopted Unix and one of the strongest advocates of vendor independent standards - it is promoting conferences and discussions on the subject. The Department of National Defence is another Unix supporter and its Director General of ADP services, Norman Inglis, was instrumental in setting up a recent conference and exhibition - "Unix in Government". Inglis said after the show that it generated a tremendous amount of interest but the intention was to promote an awareness to vendors of what the government requires and to give government representatives a feeling for what was available and what the future of Unix is. Mel Turner of Officesmiths puts Canada about a year behind the US in matters of this kind but adds that it make take Canada longer to adopt a standard procurement strategy because the central agencies do not have the same control over departments as their counterparts do in the US.

TWO AUSTRALIAN VENDORS TO LAUNCH EDGE LSX 3090 IN FEBRUARY

In Australia February will see the launch of the Edge LSX 3090 by two companies. Both Victoria-based PC hardware and software vendors Hisoft and Olivetti Australia will bring out their implementations of the 9 MIPS 3090. It is unclear whether Hisoft will release a series of machines based on the Edge processors but Olivetti Australia said that it is unconcerned about the Hisoft competition because it intends to sell it not just as a powerful Unix engine but as part of a total system.

UNRIVER OFFERS MULTI-USER GRAPHICS THROUGH FIBRE OPTICS

Following a successful first showing at Comdex last year, SunRiver Corp, Jackson, Missouri, has now appointed a distributor, S K Micro Systems Ltd of Letchworth in Hertfordshire, to sell its fibre optic workstation systems in the UK. SunRiver's Cygna 386 system claims to make high speed graphics available for the first time on remote terminals by using fibre optic links between the host computer and individual SunRiver stations. Connected via a four port AT-bus adapter card and full duplex fibre optic cable, allowing a data transfer rate of 32 Mb/sec (compared with 10 Mb/sec for Ethernet and 20 Kb/sec for an ASCII RS-232 terminal), each station is a host dependent device that includes one parallel and two serial ports, and keyboard and video controllers. An 80386-based AT-bus host computer running Xenix could support up to sixteen users, and a 386 machine with 32-bit internal bus up to 32 users. With standard driver support provided by both the Santa Cruz Operation's SCO Xenix and Microport's Unix System V, a system with VP/ix (Phoenix Technologies) or Merge 386 (Locus Corp) DOS under Unix facilities can access the full bit-mapped graphics capabilities of DOS software. High-end Xenix-based CAD and desktop publishing software previously limited to single users could also be accessed, and SunRiver anticipates that Unix software houses will take advantage of fibre optic technology to begin developing graphics-based software. EGA, CGA and Hercules compatible graphics are supported: an EGA station will be sold by SK for £1,325 in the UK, with a four port adaptor card for £575 and 25 ft fibre optic cable costing £75. In the US, EGA stations begin at \$1,599.

ETHERNET MANAGEMENT SYSTEM "ANTICIPATES DOWNTIME"

UK networking specialists Logic Replacement Technology of Reading, Berkshire, has come up with a network management system that is claimed to prevent downtime by measuring the quality of signals on an Ethernet network, allowing a manager to spot potential problems before they become serious. LRT's Network Quality Analyser uses digital signal measurement to identify network degradation without interfering with network traffic. Operating at levels 1 and 2 of the ISO model, the NQA measures network bias, jitter, DC and AC signal components, fall time and bit rate, which are displayed on the portable unit as graphical comparisons with the IEEE 802.3 network specifications, diagnosing and reporting on the exact location of network anomalies, and therefore combining the individual functions of network monitors and test tools. Before launching the product, LRT conducted a survey of 70 large network users in the UK, who had all suffered from degradation problems which they could not easily solve. The company anticipates selling up to 200 NQA systems in the UK by the end of the year, and will also be selling French and German versions: it is currently looking for a major US distributor. The NQA, which incorporates two 68000 processors, will sell for £15,000 in the UK, and \$25,000 in the US.

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Mixed feeling were the result of the Unix vendor's, or the Hamilton Group's, meeting with AT&T late last week: some vendors were disturbed by Vittorio Cassoni's opening remarks because he saw the System V and the Sun SPARC architecture becoming the industry standard Unix environment - but others were encouraged by Cassoni's pledge of more openness concerning Unix development and the fact that the intention is to deliver the next Unix release on a 3B first in 1989 - with source for the 80386 and SPARC coming later - some vendors feared that it would first be launched on the SPARC giving Sun an advantage: the vendors still feel that their fears have not yet been addressed - they are unsure of their next action but AT&T will be addressing some of the point raised at the meeting at next week's UniForum.

- 0 -

Apollo Computer Inc has reported fourth quarter net up 99.4% at \$10.5m, on turnover up 34.8% at \$163.0m; net for the year rose 132.5% to \$21.7m, after a tax loss of \$6,523, on turnover that rose 41.4% to \$553.7m. Net earnings per share rose 93% at \$0.29 in the quarter, 122% at \$0.60 in the year.

- 0 -

Sequent Computer Systems has reported fourth quarter net profits up 105.9% at \$1.1m, after a tax credit of \$268,000, on turnover up 67.6% at \$12.1m; net profit for the year to January 2nd was \$4.0m, after a credit of \$959,000, compared with a loss last time of \$912,000, on turnover that rose 92.4% to \$38.5m. Net earnings per share rose 40% to \$0.14 in the quarter and was \$0.54 in the year.

- 0 -

While NCR Corp reckons it will need a "damn good performance" to hit forecasts of \$5.50 a share net in 1988 - up from \$4.51 in 1987, "we haven't tried to talk analysts out of that number," Chuck Exley told the Wall Street Journal: the Daytoner's chairman said that foreign business, now an impressive 54% of the company's total, continues to benefit from the fadeaway dollar.

Minigrams

DEC is expected to announce this week a three-dimensional VAXstation using raster graphics subsystem technology jointly developed under the two-year old pact with Evans & Sutherland Computer Corp: Electronic News hears that it may use the new BI bus.

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The next Posix meeting will be held in London from March 2nd to 4th and will be attended by ISO delegates and technical experts.

- 0 -

Fast9 transputer board for the IBM PC/AT fitted with a bank of nine microprocessors, the Inmos T414 or T800, is now being delivered by developers Quintek of Westbury-on-Trym, Bristol, England: with its in-built 64-bit floating processor the company claims that the Fast9 brings a computing density of 13.5 MFlops to one AT expansion slot - the T414-based board costs £8,995 and the T800 is priced at £10,950.

- 0 -

Motorola has changed its mind about attending next week's UniForum and has instead decided to spend the money on its own show to be held later this year.

- 0 -

Informix Software Inc and Wang Laboratories last week signed an agreement allowing Wang to license Informix's rdbms products to its customers: additionally Informix- SQL was voted the most popular Unix software program by respondents to a 1987 Readers' Choice questionnaire from Unix/World magazine.

- 0 -

Zilog Master VAR in the UK, ABS Computers, has enhanced its 'Simple' language to offer 4GL facilities using the Informix C- ISAM interface - the enhanced product will be available this month.

Companies who are expected to join as X Window Consortium members include Bull SA; IBM; and Fujitsu America - in addition, organizations may join the MIT X Consortium as affiliate members by contributing a fee of \$15,000 - Stellar Systems is currently an affiliate of the consortium and Evans & Sutherland and Software Productivity Consortium are expected to join as affiliates in the near future: the consortium will be chaired by Robert Scheifler of MIT's Laboratory for Computer Science and the consortium will fund system enhancements, such as 3-D graphics extensions and libraries, video extensions and protocol binding and toolkits for languages other than C.

- 0 -

A Coventry, England-based company, GL4 Systems, has developed a conversion package that allows users of Wang 2200 to transfer to the Altos Unix environment - the company claims that GL4 will convert all applications running on the Wang systems to Altos within hours.

- 0 -

Metis A/S, the Scandinavian CAE and CIM software group that originated in Horten, Norway - the country's nearest equivalent to Silicon Valley - has now set up a subsidiary in the UK, on the Brunel University campus in Uxbridge, Middlesex: Metis says it will use the subsidiary as a springboard into Europe for its database and 4GL products aimed at engineers using Unix workstations.

- 0 -

Stung by recent criticism from IBM that his comparison of SCO Xenix 386 and OS/2 (UX No:162) was unfair due to the fact that OS/2 is targeted at the 80286 processor, analyst Neal Nelson of Chicago-based Neal Nelson & Associates has rerun the 17 tests, this time using Santa Cruz Operation's 286 version (first launched in 1985): this time SCO Xenix was faster in five cases with a maximum 600 percent difference, and OS/2 was faster in four cases with a maximum 500% difference.

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Number 166

PACKED UNIFORM SEES BULLISH IBM, AMDAHL LINES UP WITH AT&T/SUN

UniForum opened this week to a packed reception with people hanging over galleries to hear the keynote speech delivered by Apple's John Sculley. All the big names were there with IBM making bullish noises concerning its involvement with the Unix workstation market. "IBM pledges to achieve a leadership role in the high-performance Unix workstation world," William C Lowe, IBM vice president and president of IBM's Entry Systems Division, said at the fifth-annual international Unix users' group conference, UniForum. Lowe continued by saying that by 1989 the high end of the AIX workstation family will have more than four times the performance and memory of today's RT PC. IBM also said that its investment in ongoing development for the RT is equivalent to the money spent on the PS/2 family. Amdahl announced that it had joined Sun Microsystems' Strategic Industry Partnership Program and that it is committed to using the merged operating system currently under development by AT&T and Sun as the basis for its implementation of Unix, UTS. Amdahl also announced that it is working with Sun to connect the Sun workstations to Amdahl mainframes, at the show the machines were demonstrated connected over serial lines but the plan is to use Ethernet and eventually full channel attachment.

NOW TANDEM SIGNS WITH MIPS COMPUTER: FAULT-TOLERANT UNIX?

Having for several years given out strongly hostile messages about Unix, Tandem Computers Inc seems to have become an enthusiastic convert, and after adding the Altos Computer Systems 68020-based 3068 Unix micro to its line as the LXN last April (UX No 125), the Cupertino company yesterday announced that it had signed a development agreement with MIPS Computer Systems that will enable it to extend its embryonic Unix product line upwards. MIPS, Sunnyvale, California, is currently one of the most sought-after partners for reduced instruction set microprocessors and boards to run Unix, and only last month, the company announced that the Rolm MilSpec unit of Loral Corp was using MIPS processors as the basis of a new ruggedised Shark machine. Other major companies buying MIPS processors OEM include the Prime Computer-Silicon Graphics partnership, while UK OEM customers include Racal-Redac Ltd and Whitechapel Workstations Ltd. Terms of the agreement with Tandem, and details of just what the two companies plan to design, were not given.

SUN BUILDS 7 MIPS SPARC RISC INTO DESK-TOP WORKSTATION

Sun Microsystems Inc at the end of last week duly announced its powerful desk-top computer (UX No 165), the Sun-4/110, which is built around the Mountain View company's new Scalable Processor Architecture or SPARC RISC microprocessor - at from just £16,000. The 4/110 is rated at 7 VAX MIPS, the measure that takes the VAX-11/780 as 1 MIPS, and says that it does 1.1 MFLOPS on the Linpak benchmark, leading the company to call the thing a supercomputing desktop workstation. The 4/110 comes with 8Mb of main memory and monochrome monitor at the base price; main memory can be expanded to 32Mb and the machine takes up to 1.3Gb of disk. There are 16" and 19" colour, 19" greyscale and 19" standard and high-resolution mono monitor options. Standard features include Ethernet, two RS232 ports, SunOS, Open Network Computing, C, Pascal and Fortran. The Sun-3/110 and 3/140 can be upgraded on-site with a processor swap-out. Sun also upped the UK price of the Sun-3/60 to £7,450 as a result of parts shortages. In the US, the new Sun-4/110 workstation starts at \$18,000 with 8Mb and a mono monitor but no disk: the price is reckoned to be about half what you would have had to pay previously for that performance; Sun also added a 327Mb 18mS seek time SCSI disk at \$7,700, a new version of Sun Common Lisp for the Sun-4 workstation series at \$3,500, and additions to its PC-NFS networking products to support all IBM PS/2 systems; a new PC-NFS LifeLine adds electronic mail and file back-up for MS-DOS or OS/2 micros in heterogeneous networks and PC-NFS 3.0 lists for \$395, LifeLine for \$125.

APPLE SHIPS A/UX

A/UX is now available for the Macintosh II from Apple Computer. A/UX is currently being shipped either on a monochrome workstation, or colour system, or as a development system. A/UX on an Mac II with 2 Mb RAM, 80Mb hard disk, MMU and a 12" monochrome monitor costs \$8,597. An entry-level colour version has the same configuration as the mono version but has a 13" colour monitor and costs \$9,346. A development system is also available for \$8,399 which has 4Mb RAM, 80Mb hard disk, MMU but no display. The current Mac II can be upgraded using an "upgrade bundle" which includes an 80Mb disk with A/UX, 4Mb RAM, and MMU for a price of \$4,879 on an internal disk and \$4,979 on an external. A/UX is being targeted at VARs, government accounts and higher education. Software developers are claiming a couple of days or less to port applications from the original Mac operating system to A/UX. (Details of ported applications are on page 3.)

UNISOFT PORTS TO Am29000

Advanced Micro Devices Inc and UniSoft Corp have joined forces to implement UniSoft's UniPlus+ version of Unix System V/3 on the new Am29000 reduced instruction set microprocessor. Coming late into the game, AMD is ravenous for engineering workstation design wins for the 29000 and sees UniPlus+ as the key to unlock that door. The integrated hardware and software will be available to customers in the fourth quarter of 1988. AMD says that the 29000, announced last year, is already making its mark in the embedded controller market. UniPlus+ is already offered by over 130 vendors worldwide.

OS/2 LANs FOR UNIX

Microsoft and Hewlett Packard have announced a joint development effort to port Microsoft's OS/2 Lan Manager onto Unix servers, allowing distributed applications to run across OS/2 and Unix systems. The product, LM/X, will initially connect HP's Risc Precision Architecture Series 9000 systems with 80386-based PCs with at least 2 Mb memory and a hard disk, running Microsoft's Unix System V/386 Release 3.2 (the merged Unix/Xenix product). It will also be licenced to other manufacturers for ports to other hardware and software platforms: Apricot, NCR, Nixdorf, Olivetti, Pyramid, SCO, Siemens and Wyse have already expressed an interest. LM/X will run over Token Ring, Ethernet, or Starlan networking, and will also be ported to PC Lan, NetBIOS, TCP/IP and ISO standards, and to the Unix V.3 sockets and transport level interface. It should be available early in 1989, with development kits due by the end of 1988.

IBM LAUNCHES ITS RT+PS/2 ACADEMIC WORKSTATION AS 6152

IBM has finally launched the fruits of its Scholar's Workstation development effort with Carnegie Mellon University, Pittsburgh - the 3-M 1 MIPS, 1Mb, 1m pixels machine - as the 6152 Academic System. The move upstages Steve Jobs, whose Next Inc has not yet launched its planned college workstation, and lays down the gauntlet to Apple's Mac. The Academic System comes out as a combination of a RISC Unix processor similar to the one used in the RT Personal, backed by a Motorola 68881 maths co-processor, tacked onto the side of an 80286-based Personal System/2 Model 60. Designed to communicate via TCP/IP over either Ethernet or Token Ring networks, the 6152 runs under the IBM Academic Operating System 4.3, which is based on Berkeley Unix 4.3, which integrates X Window 11 as standard. The 80286 is used to run MS-DOS 3.3 or OS/2 1.0, but these do not make any use of the RISC processor. And the Academic System will not be generally available: it is limited to schools and colleges that are eligible for IBM's academic discount - and still doesn't come cheap. With 20Mb disk and 2Mb on the RISC, it costs \$6,395; configurations are available with 44Mb and 70Mb disk and 4Mb and 8Mb RISC memory, the top model costing \$10,140. Running the Drystone 1.1 benchmark, the thing is rated at 3,394 Dhrys per second, running Whetstones single precision it does 538 KWPS, and double precision, 625 KWPS. The 8604 1,024 by 768 15" analogue mono display is \$555, and there is an NiCps/2 adaptor from Ungermann Bass inc for inking to Ethernet using the TCP/IP protocol: it has 32Kb of buffer memory and costs \$550. The 6152 Academic System will be available in limited quantities in March, volume in July. Separately, IBM announced a radiationshielded Tempest version of the 6150 RT: it uses the 6155 TO1 Tempest extended mono graphics display, is \$29,500 and will be available in September.

AIX/RT 2.2

The new AIX/RT 2.2 incidentally is also enhanced with the Berkeley BSD 4.3 DBX debugger, and ADGSL graphics support is extended to user-defined devices. Support can also be expanded to an extra 16 users at an additional charge. A new 1.3 release of AIX/RT Distributed Services adds TCP/IP support over Ethernet and the Token Ring, SNA Logical Unit 2 emulation over Ethernet and Token Ring, and SDLC. Available 13 months from now, in March 1989, it costs \$600. The RT will one day - again in March 1989 - be usable as a server for a cluster of IBM Personals or PS/2s under PC-DOS 3.3 and IBM AIX Access when DOS Server is loaded. It enables the micro user to access and use the AIX for storage of PC-DOS files, and to use the file system and attached printers. The PC-DOS micro can also emulate an asynchronous terminal and function as an intelligent terminal to the RT. And when X Window is loaded on an AT or a PS/2, the micro can act as an attached colour graphics workstation to an AIX X Window system or systems over Ethernet or Token Ring, creating windows to multiple applications running on remote machines - provided they too have X Window up. DOS Server is \$225, AIX Access is \$150 per PC-DOS micro, and X Window for IBM PC-DOS is \$195. All arrive in March 1989, and there are also AIX PS/2 DOS Server and Distributed Services counterparts for a PS/2 under AIX: these cost \$225 and \$400 respectively, also March 1989, as is an AIX PS/2 version of Sun Microsystems' Network File System: that costs \$400. Wrapping up the RT announcements, the 6192 expansion unit and expansion unit adaptor increase to a maximum of 36 the number of ports of the four supported types that can be installed on an RT. The 6192 has six 8-bit input-output slots that can each take cards with two, four or six ports of the various types on them. The 6192 Expansion Unit is \$1,375, the Adaptor \$225, from June.

CELERITY SHUTS UP SHOP, SHEDDING 70% OF ITS WORKFORCE

Another casualty of the fiercely competitive high-performance scientific Unix systems market looks like being San Diego-based Celerity Computing Inc. The five-year-old company formed by designers of the NCR 32 32-bit microprocessor slice shed 70% of its 100-strong workforce 10 days ago, but at the end of last week there was still no-one at the company prepared to explain any future plans. Celerity built a family of multiprocessor Unix systems around the microcodeable NCR 32 - but used the part as a RISC rather than adding a complex instruction set. It sold some 200 of the 1200, 1230 and 1260 systems and had still been making a few of them until the end of last month. But its major project was a new 64-bit processor, and unofficial word out of the company is that it intends to try to complete development of the new machine and then try to sell the assets of the company. The immediate reason for the shutdown, affecting 35 marketing and sales personnel, all the production workers and, most of the admin staff and about half the executive staff, was said to be non-availability of a key component.

ABS TO BASE NHS PUSH ON WIMS2

Following its recent installation of a C Horse 830 in the UK's largest National Health Service Authority in Leicestershire which will link the 34 hospitals throughout the county, ABS Computers of Brighton, England is set to launch new products and strategy based on the WIMS2 Plus (Work Information Management System) specification on March 3rd. Originally based on an ABS product, WIMS was adapted by the Department of Health and Social Security and offered as a general specification five years ago for hospital administration. Since then, ABS claims to have cornered between 50 and 75% of the market, and more recently has installed several Unix-based systems. The 50 port Leicestershire installation was valued at £55,000.

SONY NAMES FIRST US PARTNERS FOR ITS NEWS UNIX STATIONS

The new Sony Microsystems Co in Palo Alto, California is launching its parent's News Unix workstation for the US market at the Uniforum show, and before the show gave details of the models it plans to offer. News - strictly NeWS, for Net Work Station - will initially be targeted at the computer-aided software engineering and technical publishing markets, and is currently recruiting independent software vendors to put their applications programs in areas such as database management and computer-aided design onto News. The News is built around two 68020 microprocessors, and the first News models sold in the US will be the NWS-711 and NWS-841, at \$3,995 and \$19,900 respectively, to be sold in tandem as a networked system, with first ships in April. Partners already signed up include IDE, for its Software through Pictures integrated computer-aided software engineering environment for analysis and design of technically complex software development problems; Ibuki, of Mountain View, California for its Ibuki Common Lisp; Frame Technology Corp, San Jose, for its Frame Writer word processing software, which will be bundled with News, and its Frame Maker electronic technical publishing software; KnowledgeSet Corp, Monterey, for its Compact Disk-based Knowledge Retrieval System; Engineering Mechanics Research Corp, Troy, Michigan for its Nisa II/Display II family of general purpose, finite-element engineering programs for analysing structural and three-dimensional fluid flow problems, fatigue and fracture problems, and linear and non-linear problems; and Unify Corp, Sacramento, for its Unify relational database and Accell development tools. Sony will offer resellers technical and sales training, technical and maintenance support, co-operative advertising, and extended warranty. (See page 4 for European details.)

ISI SIGNS WITH TORCH AS NBI CUTS 200, SELLS GERMANY

UK workstation manufacturer Torch Computers of Cambridge continues its re-emergence as an OEM supplier (UX No 161) with the recent signing with Integrated Solutions Inc of San Jose, California for its VME32QX single board Unix computer. Integrated Solutions has purchased the manufacturing and distribution rights for the machine throughout the US, but will not give any further details of the agreement but expects to start delivering the product some time this summer. Torch says that it has no more deals of this kind in the US but adds that others are in the pipeline elsewhere. Meanwhile ISI's parent, office automation and Unix systems specialist NBI Inc of Boulder, Colorado after a loss of \$16.1m for the six months to December is having to take a series of measures to cut its costs. It is reorganising its Computer Systems Division, reducing its workforce by about 200 people, 11.1%, and is also closing office supplies plants in Washington state and Alaska. Manufacture of its Model 570 Unix micro is transferring to its Integrated Solutions subsidiary in San Jose, California, leaving Boulder to concentrate on workstation manufacture. On the marketing side, however, it plans to increase staff by 10%. In Europe, the company has sold its NBI GmbH West German subsidiary to a master distributor and reduced NBI SA in France to service-only status pending introduction of new products so that it can focus on its more profitable international units in the UK, in Canada and in Hong Kong.

A/UX PRODUCTS AT UNIFORUM AS INTELICORP INTRODUCES 386 KEE AND SIGNS WITH ORACLE

Unisoft and R Systems chose Uniforum to announce their product line availability for Apple's A/UX implementation of Unix. Oracle Corp also announced dbms support for TCP/IP on Apple machines as well as offering from Sun, Apollo and Xenix-based machines. Oracle also announced a co-operation agreement with IntelliCorp to market and help in the development of its AI products. Intellicorp, meanwhile, announced a prototype of its Knowledge Engineering Environment for the Intel 80386-based machines.

Unisoft Corp introduced a suite of compilers for A/UX: the C, Fortran, and Pascal compilers which the company says have been implemented specifically for A /UX and the Motorola 68000 series architecture, which will take advantage of the Macintosh interface. The Unisoft compilers have been optimized for the Motorola 68020 and 68881 floating point chips, and feature one-pass compilation for maximum throughput. The C compiler supports all Western Electric and Berkeley UNIX extensions. Unisoft's Fortran Compiler passes the US Government Fortran Compiler Verification Suite, and the Pascal Compiler implements the ANSI-standard Pascal language, passing the ISO Level O test suite. The compilers are available immediately, and are priced at \$495 each.

Also delivering A/UX support is R Systems Inc which has introduced its family of word processing and office automation applications. R Desk, R Word, R Word+ R Office Manager and R Office+ were ported to A/UX in less than two days, claims the company. Support for the Apple interface will be included in future versions of the R software. R Desk on A/UX costs \$495, R Word is \$995, R Word+ is \$1395, R Office+ contains all of the features and functions found in R Desk, R Word and R Word+ and is priced from \$1,795. R Office+ requires 362K of memory in a single-user environment. In a multi-user environment the program requires the initial 362K for the first terminal and 44K per additional terminal.

As well as announcing distributed dbms support for TCP/IP on Sun, Apollo, Apple and Xenix computers, Oracle mapped out its Unix strategy, describing plans in the area of transaction-processing performance, networking and user interfaces. Oracle announced new support for bit-mapped displays, particularly for the Unix workstation marketed. The company also announced a co-operative marketing program with IntelliCorp of Mountain View, California, to cooperate in the marketing and development of IntelliCorp's artificial intelligence products, KEE Connection and IntelliScope, for use as an AI front-end to Oracle's SQL-based dbms. Bruce Cleveland, Oracle's Unix product line director said at the show "Oracle's main visibility has been in VAX/VMS and IBM mainframe environments, and now we are gaining equal exposure in the dynamic Unix marketplace". Oracle's Unix strategy includes aggressive pricing, packaging and promotions at the low end of the Unix/Xenix market as well as "an upcoming major breakthrough in performance and functionality for the Unix high-end transaction processing market". The company has, in the last few months, announced specially priced and configured versions of Oracle on Xenix and AT&T 3B2 systems for VARs and application developers. Oracle said of its forthcoming online transaction processing technology that it will redefine the realm of possible performance in the OLTP segment of the Unix market and added that its early performance measurements indicate that superminis, such as the VAX 8650 running Ultrix, will be able to process dozens of database transactions per second.

HEWLETT-PACKARD SIGNS STANDARD AND POOR

Hewlett-Packard Co has announced a licensing agreement to allow Standard and Poor's Trading Systems to become an HP VAR selling its StockMate system on the HP 9000 series under Unix. Standard and Poor estimate a potential 4,500 customers in North America for its quotation and information system in stock exchanges, brokerage houses, banks and other financial institutions. HP sees this move as a way of positioning itself "as a major supplier of trader workstations for an emerging segment of the financial-services market". S&P StockMate is built around Standard and Poor's Ticker III, a real-time, consolidated market-data broadcast of all North American securities including stocks, bonds, futures, indices and options.

PC USERS GET E-MAIL FROM UNITED SOFTWARE INDUSTRIES

United Software Industries Inc has developed software that it claims allows PC users to develop, use and run electronic mail systems. The Canoga Park, California company points out that previously micros in these conventional systems until now could serve merely as terminals linked to a remote bulletin board, commercial e-mail service or subscription-based information exchange; users today rent time on these systems and, in addition, must pay long-distance phone charges or fees to a commercial network of special local telephone numbers that route calls to the central computer. "People-Net" is designed for systems capable of running under the Unix and XENIX operating systems, such as IBM PC/ATs, PS/2s and compatibles, and mainframe and minicomputers. People-Net will be available in early 1988. An MS-DOS-based edition of People-Net will be introduced by mid-1988. People-Net users may create identical, "parallel" conversations that reside at additional People-Net-equipped sites; the origin of a conversation is transparent to the user, and a conversation can be underway at two or more sites simultaneously. System requirements and configurations for People-Net vary according to the number of users, which determines the number of serial ports, modems and hard-wired network connections needed. A minimum of five megabytes of hard-disk memory is required. People-Net is available to users under license from United Software: non-commercial small-system object code licenses, available to individual professional users for \$550; commercial small-system object code licenses, \$2,250; mainframe, minicomputer and large-system licensing, including source code, \$4,500.

SONY SIGNS EMS FOR EUROPEAN NEWS MARKETING

Sony Corp plans to launch its News Unix workstations (see page 3) in Europe in May and Sony Europe GmbH is forming a separate subsidiary, Sony Microsystems Europe, to handle the European launch and marketing of the workstations. The new subsidiary has appointed marketing company EMS Ltd of Heathrow, England to set up distribution channels in the UK and continental Europe. EMS claims to be instrumental in setting up the OEM agreement between Sequent and Siemens, and numbers MIPS, Masscomp, Lucid, EDA and P-CAD amongst its customers - its forte is finding European VARs, OEMs, and distributors for Silicon Valley start-ups. Sony Microsystems Europe will be based in Cologne, Germany and will be formally launching the News range in Europe during May.

VERDIX TO OFFER REAL-TIME EMULATION TOOLS FOR ADA MOTOROLA DEVELOPMENT

Verdix Corp is set to offer real-time, in-circuit emulation tools for the Ada Motorola 68000 development environments. Applied Microsystems Corp is to provide Verdix with its Real-Link emulation interface for microprocessor development environments. Verdix will incorporate Real-Link into their VADS/68000 Cross Debugger hosted on Sun 3 Unix, VAX/VMS and VAX/Ultix environments. The completed product will be marketed as VADS/Real-Link by Verdix to provide solutions for Ada projects using Motorola M68000 family microprocessors. VADS/Real-Link provides the user with the ability to debug Ada code using the Verdix full-featured Ada debugger coupled with an Applied Microsystems emulator. The product will be available for delivery in May 1988.

BECHTEL CHOOSES UK FIRM FOR ORACLE- BASED PLANNING, SCHEDULING SYSTEM

Acton, Massachusetts-based, Bechtel Software Inc. went to Kingston-Upon-Thames, England to find an Oracle-based project planning and scheduling system. Bechtel has acquired exclusive North American and non-exclusive international rights to market and sell Panorama from Cheltonian International. Panorama provides a range of facilities for managing both individual and multiple projects, and control for project-based organisations. The system's features include critical path scheduling, project time analysis, resource aggregation and allocation, and an extensive range of standard reports. The system also includes interactive management graphics and network plotting. Panorama prices start at \$5,000.

QUADTREE BEHAVIORAL MODELS FOR VALIDSIM
Quadtree Corp of Milpitas and Valid Logic Systems Inc of San Jose, California have announced that Quadtree Designers' Choice software behavioral models are now available for the ValidSIM simulation environment. The Designers' Choice models will run on Valid's wide range of electronic design automation systems, including the Digital Equipment Corp's VAXstation family, the Sun Microsystems' Sun-3 Series of workstations and Valid's SCALDsystem workstations. Valid's component libraries for design validation are now further augmented by Quadtree's intention to provide software models for commercial logic simulators. Prices for Quadtree's Designers' Choice models range from \$500 to \$5,000, depending upon the complexity of the model. Designers' Choice models are compatible with ValidSIM releases 3.0 and beyond. The models are available directly from Quadtree Corp, 30 days after receipt of order.

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SYSTEMS DESIGNERS AND GOULD WIN 11.5m OASIS 4 PROJECT

Eight months after landing the UK Ministry of Defence's Oasis System 3 contract for 100 shore-based Unix systems, (UX No 134) the same consortium has won the next phase for an additional 60 systems on board Royal Navy fighting ships. Systems Designers plc of Fleet in Hampshire, recently merged with UK technology group Scicor, was awarded the £11.5 million contract by the Government's Central Computer and Telecommunications Agency (CCTA) last week: it will provide project support and management to the Royal Navy's 100 strong Oasis programming team at Portsmouth. Principal subcontractor is Gould Computer Systems, which will supply ruggedised versions of its PN6000 supermicros, codenamed Sabre, over the next five years. Also involved is Spider Systems of Edinburgh, which will contribute to the Navy's first deployment of Ethernet-based TCP/IP local area networking on ships and submarines, which will allow for future hardware expansion without re-wiring. Software specified included the Ingres RDBMS and Ace Microsystems' Lex word processor. The systems will replace existing DEC PDP-11s on aircraft carriers, destroyers, frigates and submarines, eventually taking over all afloat administrative tasks, and will be installed on all new ships. Main competition for the tender is believed to have come from British Telecom and NCR; whilst DEC, understood to have been precluded from Oasis System 3 because of its inability to offer SVID-compatible Unix, was not an active bidder this time round.

NEW LIFE IN UNISYS EXPERT SYSTEMS STRATEGY

Amongst those projects that were absorbed during the merging of Sperry and Burroughs to form Unisys, was Sperry Corp's expert systems business, which paired Texas Instrument's Explorer workstation with software from Intellicorp of San Jose, California. That business is now being rekindled, with Unisys adding the TI Explorer II workstation and a range of software to its Knowledge Systems product line. Unisys is the sole supplier of TI machines running Intellicorp's KEE (Knowledge Engineering Environment) toolkit, which now incorporates the PC-HOST delivery system, allowing applications created using KEE on Lisp machines to be ported from the single user Explorer to a Unisys 5000/50 micro with attached personal computers: the advantages are low-cost access and integration with traditional information processing. Unisys has also announced its own KS/Answer, for prototyping IBM database dependent expert systems in conjunction with Sterling Software's Answer/DB, and anticipates the launch of a new version of Software Architecture and Engineering's Chichester, England, expert system shell, KES/11 soon.

ARDENT SETS UP EUROPEAN OPERATION

Preparing for the build-up to the launch of its Titan personal graphics supercomputer, Ardent Computer Corp (previously Dana: UX No 160) has quietly set up its European operation in Aylesbury, Buckinghamshire, under the direction of David Howes, Apollo UK's first employee and latterly its Director of European Sales Development. Although the single user, 64-bit vector parallel processing Titan is not due in the UK until sometime after its promised US first quarter unveiling, Howes is already touting the company's Dynamic Objective Rendering Environment (DORE) graphics toolkit as a possible industry standard, offering the source-code to applications developers for integration into their products. DORE is aimed at those who want to visualise complex algorithms and maths routines in graphics form, from wire frame through flatshade and smoothshade, to full ray tracing. DORE can interface to graphics standards such as GKS, or developers can write their own device drivers. The Titan, which will be targeted towards applications such as computational chemistry and fluid dynamics as well as the more traditional workstation mechanical computer-aided-design business, is expected to achieve a performance of 6 MFlops (using the Linpack 100x100 double precision compiled benchmark) in its low-end single processor configuration, with a maximum of four processors possible.

XENIX DATABASE USERS GAIN FROM SCO, UNIFY AND ORACLE DEALS

Xenix users with 80386-based micros are demanding more powerful database applications, and both Unify Corp and Oracle Corp are now making inroads into the Xenix marketplace for the first time. Santa Cruz Operation was showing its own newly launched Integra relational database at Uniforum this week in conjunction with the Accell fourth generation language development tools from Unify. SCO previously offered the Informix RDBMS, but will now be concentrating on its own package, which has the ability to read existing SCO database files from both Informix 3.3 and Foxbase and Foxbase Plus DB2 workalikes, and will work with Informix's Ace report language. An SCO spokesman said the company had launched the product "to gain a greater degree of control over the important database aspect of the operating system". The deal also offers Unify an entry into the Xenix marketplace. SCO was also showing a new integrated office automation software package, Portfolio, at Uniforum. In a separate announcement, Oracle Corp has announced an SCO Xenix version of the full Oracle RDBMS and application development tools, its first for Xenix users. And IBM is now offering both Oracle and Relational Technology Inc's Ingres under its AIX Unix for the RT Personal and PS/2 Model 80: the RT versions of both will be out in April at from \$3,000 for single user versions, with the PS/2 versions following in September at from \$1,500 for Oracle, \$2,000 for Ingres.

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MICROSOFT SUPPORTS X/OPEN STANDARD

In a raft of announcements at UniForum, the X/Open standards consortium has won further support for its Common Applications Environment (CAE) from AT&T and Microsoft, and consolidated its software vendor and user advisory councils. Both AT&T and Microsoft said at the show that they would support the CAE in future operating system and application products, with Microsoft becoming the thirteenth member of the Independent Software Vendor (ISV) Council. On the User Council, merchant bankers Salomon Brothers have joined. X/Open also revealed its software partners program, offering ISVs a direct communications channel with the Group and technical and marketing help with X/Open compliant products. Chief technical officer Mike Lambert revealed that future developments to the CAE would include revised system calls and libraries (remaining consistent with Posix), a programming interface to ISO Transport level 4 for networking services, X-Windows window management, and security.

CONVERGENT ADDS REMOTE SUPPORT FOR UNIX S

Convergent Technologies Inc had two UniForum goodies - a Remote Input/Output Processor and new windowing office software. The new processor enables up to 512 devices to be connected to an S-Series Unix supermicro via existing telephone wiring, and is compatible with Convergent's Telecluster network using the 1.882 Mbps RS-422 network medium and protocols. Up to 15 of the Remote Processors can daisy-chain on a given local area network line, and multiple lines are supported. Each has eight or 16 RS-232 ports and supports asynchronous devices and modems at baud rates from 300 to 38,400. No prices were given. Convergent also announced a new release of its automation suite to run in a concurrent windowing environment on ASCII terminals on S-Series servers. Called The Office Window, WGS 2.0 is an enhanced version of WGS/Office from June 1986.

At UniForum Sun Microsystems announced that IBM, Amdahl Corp., National Advanced Systems and Control Data Corp have licensed and will implement the protocols of Sun's Network File System - Sun claims around 175 vendors and universities worldwide current licensees of NFS.

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Prime has announced that its Prime Information EXL database management software package that supports Pick and Pick applications is now available on Prime's Unix-based EXL 316 system.

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A European Workshop on Open Systems has been created to bring together eight different bodies working in the field of standards, reports ICL: the eight are the CEN European Committee for Standardisation; the Cenelec European Committee for Electrotechnical Standardisation; the SPAG Standards Promotion & Application Group; the European Computer Manufacturers' Association; Ositop Open Systems Interconnection Technical Office Protocols body; the Rare associated network for European research; Cosine Co-operation for Open System Interconnection Networking in Europe; and the European MAP Users Group; the new organisation will be the supreme body for study and development of Open Systems profiles and conformance.

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And reports from Tokyo suggest that US and European computer manufacturers are organising to keep a watching brief on Tron - The Real-time Operating Nucleus - developed as a universal machine-independent environment that can be optimised for the full range of computing applications: Newsbytes Japan reports that 10 European computer-related firms, including Olivetti, Siemens and L M Ericsson, are planning to team up with members of the Japanese Tron Association to establish a Tron office in Europe - the office is expected to be in either the Netherlands or Switzerland - some companies in the US are also reportedly in discussions to establish a Tron office, while in South Korea, a local Tron Association is expected in May.

Unisys Corp took UniForum as an opportunity to launch the new models it is taking from Computer Consoles Inc: it has added the U 7000-50, 51 and 52 at prices from \$190,000 to \$295,000.

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Elxsi Corp has unveiled a new processor for its 6400 series of minisupers, claiming that the system offers twice the power of the IBM 3090-600 at a third of the price: more details of the Pegaus Superframe will be included in next week's issue.

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ASCII Corp of Japan is betting that demand for Unix applications will grow so rapidly with the rise and rise of engineering workstations that it is starting work on converting its MS-DOS software such as word processors and simple computer-aided design systems such as the top-selling Candy 3 to run under Unix.

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Nippon Olivetti plans to announce its new Linea Duo line of 68020 and Edge Computer-based machines within the year: in Japan it will be pitched at banks and the OEM market.

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DEC reckons that it's coming up fast in the technical workstation market: according to marketing vice president Peter Smith, its workstation business is now growing faster than that of Sun Microsystems - and Sun is growing at over 100% a year - and its quarterly workstation sales are now second only to Sun's.

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Fuji Xerox is now marketing its Smalltalk 80 artificial intelligence language to run on non-Xerox platforms such as the workstations made by Sun Microsystems, Apollo Computer, Hewlett-Packard Co and Apple Computer: prices in Japan range from \$2,045 to \$7,400, and Fuji Xerox hopes to sell 250 copies this year.

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An ICL Unix-based distributor Pentagon Business Systems Plc of Walton-on-Thames, Surrey, England has been awarded a contract by the engineering division of British Rail, worth £250,000, for the supply of a software package that that deals with invitations to tender, comparison of quotations and general management information.

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LAST VESTIGES OF OFF-BEAT TECHNICAL UNIX STRIPPED AWAY AT UNIFORMUM

Overshadowing the myriad announcements of products, distribution agreements and alliances at last week's UniForum exhibition was the overwhelming sense of money and commitment - at least in words - from major players. Any last vestiges of the operating systems' off-beat technical background or debate about whether Unix will be a success were swept away by an emphasis on marketing more akin, as US observers noted, to Comdex than to past Unix exhibitions. And with industry names like Apple's John Sculley and IBM's Bill Lowe there to beat the drum about their companies' commitment, the emphasis on developments shifted to a businesslike approach to tackling the remaining unsolved areas of standards. In the key area of deciding the look and feel of Unix systems for the foreseeable future, AT&T is close to its promised deadline for announcing a decision for the joint development with Sun Microsystems; among the contenders are Microsoft's presentation manager and Apple's Mac interface. The European-inspired X/Open Group is now being taken just as seriously in the US, and Microsoft generated a considerable stir by pitching Presentation Manager to X/Open in an offer believed to include promises of the nature of putting the specifications or even aspects of the product itself in the public domain. Other companies, such as DEC and Hewlett-Packard, appeared to be already ploughing ahead with their proprietary user interfaces: everyone was discussing the problem of how the X Window System would be integrated with the eventual look-and-feel standard. Meanwhile the marketing hit of the show - and a likely precursor of things to come - was Informix' stand dedicated to the Wingz spreadsheet/graphics package, now running under Apple's A/UX. More like something from a consumer electronics or PC hobbyists show, the stand featured a space capsule-like structure within which visitors were assailed with a simulated countdown, lift-off and demonstration. What lured the punters was in fact in fact the promise of free Wingz shoulder-bags; the result, continual long lines of people waiting to get in - at least until the supply of bags ran out.

IBM CHOSEN BY NBS TO DO POSIX CONFORMANCE TESTING

During the bustle of UniForum IBM announced that the National Bureau of Standards has chosen it to develop the conformance testing procedures for the IEEE-developed Posix standard. The development work will be done on an IBM RT running IBM's implementation of Unix - AIX. Palo Alto, California-based Mindcraft Inc has been helping IBM with the development work and will now act as a consultant to the NBS. The IBM development efforts to date have concentrated on the: P1003.1 - system service interface and P1003.2 - shell and application utilities; components of the Posix standard.

MOTOROLA, UNISOFT ANNOUNCE OWN BINARY COMPATIBILITY STANDARD

Motorola, Unisoft with a claimed 30-odd other vendors, mostly unnamed, last week hit back at Intel, Sun and AT&T's applications binary standards interface developments with the previously anticipated announcement (UX No 153) of a Binary Compatibility Standard for systems based on the Motorola 68020 and 68030 processors. The announcement was backed by Apollo, Hewlett-Packard, NCR, Tektronix, and Motorola's Microcomputer Division, covers the binary executable-operating system interface and removable media formats, conforms to the POSIX standard and is also said to include source-level compatibility with Motorola's forthcoming RISC to ease future software applications migration. The Uniform announcement was weakened, however, by the absence of any representation or endorsement from AT&T and the fact that the rest of the 30 vendors said to be supporting the standard declined to be named. Unisoft's Robin Schlee pointed out that it was unlikely that chip manufacturers would in future release major new processors without specifying a binary standard.

SUN/AT&T COMPLAINTS CONTINUE THROUGHOUT UNIFORMUM

The grumbling over the Sun/AT&T agreement to develop a merged Berkeley/System V operating system (UX Nos 163 & 165) - now dubbed System V, Release 4.0 - was just about inescapable at Uniformum, with most in the Hamilton Group of 30 vendors having something to say about it but few having much in the way of positive alternative suggestions and fewer still looking as though they could actually do anything about it. The complaints were probably best summed up by Lew Platt, Hewlett-Packard executive vice-president who said that HP is "very concerned about the position of AT&T on the future development of Unix standards, particularly in regard to the possible dependency on a proprietary chip" (HP, of course, is a direct competitor to Sun in the workstation market and having made a huge investment in RISC development is eyeing the likely success of Sun's SPARC with considerable trepidation). The complaints spurred AT&T to hold a meeting with the group to give a fuller description of the development, with the result that some of the vendors' fears seemed to have been quietened by the end of the exhibition: however it appeared that the group won few if any significant concessions. Sun meanwhile used everyone from CEO Scott McNealy to R&D guru Bill Joy to claim that the company would derive no unfair product advantages from the development, because Sun would have to wait until it received the V.4 source from AT&T before it could port it to its own processor. Since Joy is due to head the closed development team at Menlo Park, California, that statement seems even harder to believe since at the very least Sun developers are likely to have intimate knowledge of the internals of the system long before it reaches the market. Sun's continuing success prompted not only serious but also humorous stabs from the competition: many attendees sported badges that either adapted the US cigarette-packet health warning to read "The surgeon general has determined that Sun is hazardous to your health" or read "No NeWS is good NeWS".

RIDGE CUTS WORKFORCE BY HALF

At a time when most of the Unix news is super-bullish Ridge Computers has followed Celerity Computing Inc (UX No 166) to become the next victim of the fiercely competitive high-performance scientific Unix market laying off 50 of its 110 employees in an effort to stem losses. The top end 14 MIPS 5100 CPU promised for March is behind schedule and will not now arrive before May or June. Ridge say that it is now going after the commercial market.

TANDEM SURRENDERS TO MARKET DEMAND, MAKES COMMITMENT TO UNIX PRODUCTS

Tandem Computers Inc, Cupertino, took some of the early glitter at the UniForum show when it announced that it planned a joint development effort with MIPS Computer (UX No 166)- there are strong suspicions that this will lead to a fault-tolerant Unix family built around the MIPS RISC, and then followed up with a new top-end model for its emerging Unix micro family, which Tandem buys OEM from Altos Computer. A couple of years ago, Tandem gave anyone who asked about Unix a very old-fashioned look indeed, but times change and converts can become Messianic. Tandem strengthened its Unix line with a higher-performance LXN 402 system at the top of the line, addition of the Alis integrated office package, and the Informix-Turbo, high performance database server that is claimed to double performance. The LXN 402, based on a 20MHz Motorola 68020, supports up to 32 users. It includes an 80Mb Winchester, a 10- port serial communication controller, 2Mb memory, 60Mb quarter inch cartridge tape, and 5.25" floppy drive. There are three slots for option boards, memory expands to 16Mb and disk storage expands up to 1Gb. Tandem has taken a licence to Alis, the office automation package from Applix Inc. Alis is designed to provide comprehensive office applications by combining the graphics capability of a Personal Computer workstation with powerful text-processing. Informix-Turbo is described as a high-performance highly reliable database server that offers transaction protection to ensure data integrity. In keeping with Tandem's commitment to fault-tolerance, an LXN system, with power failure protection and mirrored disk support, can be configured so that no transactions are lost from any single point of failure. Informix-Turbo works with other Informix Corp products including the Informix-SQL relational database management system; Informix-4GL applications generator for creating database applications; and the ESQL/C and ESQL/Cobol development tools which allow SQL statements to be embedded in C and Cobol programs. Also available is the Tandem Menu Development System, which enables developers to create, maintain, and access customised menus for their local applications.

Communicate with NonStop

LXN systems can also communicate with Tandem NonStop systems via the company's SNAX Systems Network Architecture software or via X25 and can also be used on Ethernet TCP/IP local area networks. An MS-DOS file and print server is available for the LXN that provides a NetBIOS-compatible file and print server capability for workstations connected to the LXN via the Ethernet local area network. The LXN 402 will be available in April and a network unit price for LXN systems is available for anyone buying 25 to 39 systems. The network unit price for the LXN 402 is \$19,380, and the single quantity price is \$25,500. Alis is available in four- and eight-user packages for workstations and terminals. The four-user workstation package is priced at \$3,500 and the eight-user is \$6,800. The four-user terminal package price is \$2,560, and the eight-user is \$5,120. Informix-Turbo is \$1,650 per LXN system. The Tandem Menu Development System is \$500 per LXN system.

AS APPLIX ENHANCES ALIS

A new version of Alis from Applix Inc was launched at last week's UniForum which has an improved user interface, office publishing facilities and a new macro interface which Applix says allows users to customize their system. Release 2.0 allows the user to choose between graphics icons or text and functions can be controlled using a mouse or keyboard. The interface has three skill levels for the novice, experienced and advanced user. For office publishing Applix has added support for managing large documents which include: the ability to divide a large document into separate books or chapters which may be edited separately at different parts of the network - the different sections can then be automatically combined for printing with consistent contents, index, section numbering, notes and figure tables throughout. The Alis Command function has a keyboard record/playback feature that allows users to record a sequence of frequently used keystrokes and replays them on request. An Extension Language Facility has also been added to Release 2.0 which allows users to write macros in a Basic-like language for complex tasks. Full colour support has been added to the Document Composer and Graphics Editor and French, German, Italian, Spanish and British English dictionaries have been added. Alis 2.0 will begin shipping in March and will be available to existing Alis users for a "nominal" upgrade fee.

DATAPOINT UNVEILS ITS NORWEGIAN UNIX SERVERS FOR ARCNET

Datapoint Corp, San Antonio, Texas, last week duly announced the 68030- and 68020-based Unix systems that it is buying OEM from Norsk Computer Industri A/S and Scanvest-Ring Data A/S, both of Sandnes, Norway (UX No 165). The machines, launched as the SX100, 200 and 300, will be offered as Unix servers on the ARCnet local area network. The systems will provide transparent access to ARCnet network and its RMS Resource Management System operating system. At UniForum, the company has been demonstrating the DX200 as a video server to Datapoint's Minx Multimedia Information Network Exchange visual communication network, which already enables users to switch between full-colour, full-motion conference mode and MS-DOS data mode. The DNX line starts at under \$20,000 and is rated at from 2.5 MIPS to 25 MIPS: it comes with uninterruptible power supply and mirrored disks for security and integrity. Datapoint reckons that it has an edge in the Unix world, where Ethernet proliferates, because the network bus arbitration scheme of ARCnet means that it can "generally handle many times the throughput of an Ethernet" local area network.

MULTIFLOW DOUBLES TOP-END TRACE PERFORMANCE

Branford, Connecticut based Multiflow Computer Inc last week doubled the top-end performance of its Trace range of minisupercomputers and also introduced a low-end system. The top end Trace 14/200, which as the name suggests uses 512 bit instructions that can each initiate up to 14 operations - as opposed to the 256-bit, seven operation instructions of its other models - is said to offer 30MFLOPS peak performance and costs \$399,500 for a base system with 32Mb memory, 1.1Gb disk, tape drive, console and Unix. Multiflow claims that the system delivers three times the performance of competitor Convex Computer's \$495,000 C-1 when compared using the Linpack benchmark, although Convex is itself close to unveiling its second generation systems. Also announced was the \$197,500 Trace 7/100, offering two thirds the performance at two thirds the price of the Trace 7/200 which was the company's only previously announced model. Multiflow also said it had \$7m funding from Prutech Research and Development for an unspecified new product development. Multiflow bases its pitch on its compiler technology, which is said to allow applications that have either high vector or scalar code content to be easily ported and take advantage of the systems' parallel architecture - one drawback is said to be the large size of the code generated. The company was nevertheless confident enough in its technology to up the price of a new version of the compiler by 80% to \$45,000.

INTERGRAPH ENHANCES ATTRACTIONS OF ITS CLIPPER CHIP SET

Intergraph Corp's Clipper Advanced Processor Division in Palo Alto is to make the Clipper set available as its four component chips - CPU with on-chip floating point, two Cache/Memory Management Units and a high-frequency clock in pin grid arrays at up to 30MHz: the parts were previously available only preassembled on a 3" by 4.5" circuit card. The CPU part is also available in a 33MHz surface-mount gull-wing package. The 30MHz set is \$610 for 1,000-up with volume in the third quarter. The company also announced Network File System and TCP/IP for the Clipper, as integral parts of the Clix implementation of Unix. TCP/IP from Lachman Associates Inc includes support for BSD 4.2 and 4.3 "sockets". And Intergraph has a software development system for the Clipper, providing a low-cost environment for software designers to develop and debug software. Coming in a 12" by 12" by 15" desktop unit that outperforms a DEC VAX 8600, it has 8Mb memory, 156Mb disk, Ethernet, SCSI, parallel and three serial ports, Clix and C and will be available in May for \$1,950.

CDC TO OFFER NATIVE UNIX ON MAINFRAMES

With an eye on lucrative US government contracts Control Data Corp is set to offer a native implementation of Unix on its Cyber mainframes. The Minneapolis, Minnesota-based company says that this addition will give it application compatibility across its range of hardware: the Cyber workstations, ETA10 supercomputers and the Cyber mainframes. The native Unix implementation, due for delivery during 1989, will be offered as an alternative to the proprietary NOS/VE (Network Operating System/Virtual Environment). NOS/VE, which has fault-tolerant, security and workload management features, will still be in demand for production environments, says CDC. Previously only a shell implementation of Unix, VX/VE was available under NOS/VE, developed with help from Human Computing Resources. This implementation is still available to users that require NOS/VE with some Unix facilities.

ICL HAS UNIX PORT FOR SYSTEM 25

ICL's best-selling minicomputer product has had an implementation of Unix ported to it to broaden the range of applications available for existing System 25 users. ICL has added a 68020 to the System 25 to run Unisoft's port of UniPlus+ V.2, the existing processor runs ICL's proprietary DMF III operating system. Files and peripherals can be shared by the two operating systems but a programme running under Unix cannot invoke one under DMF III. An introductory offer is available from ICL to existing System 25 users: an upgrade kit costs £5,500 for the board, operating system and an RS232 port. Additionally ICL is offering special discounts on 120Mb, and 40Mb disk drives and 320Kb storage if ordered with the Unix upgrade.

AMDAHL EVALUATING SUN'S SPARC

Missing from our coverage last week of Amdahl's agreement with Sun was the statement from Amdahl president Joseph Zemke that the company is evaluating Sun's SPARC technology to see whether benefits can be derived from incorporating features of the processor into future products. Although Amdahl officials said it was too early to be specific, it is conceivable that SPARC instructions could be included in future Amdahl 370-based instruction sets. The new UTS developments, to be based on the Sun/AT&T-developed System V.4, apply both to native UTS and the version hosted under VM, although Amdahl said that the effectiveness of its Multiple Domain Facility in running multiple operating systems made the VM version less important than the native version as a product. Meanwhile, Amdahl's agreements with both AT&T and Fujitsu under which the two companies would resell UTS have both quietly lapsed: AT&T never aggressively marketed the product in the first product and the three-year Fujitsu agreement has now run out with a further agreement is under negotiation; Fujitsu may be less enthusiastic about Unix on mainframes than it is about Unix on its growing range of smaller machines.

CRAY HOLDS LEAD WITH EIGHT-PROCESSOR Y-MP: UNIX STANDARD

Keeping up the pressure on its thrusting Japanese rivals, Cray Research Inc last week launched the Cray Y-MP/832 extension to its X-MP line of multiprocessor scientific supercomputers. The Y-MP/832, which comes with eight processors cycling at 6nS against 8.5nS on the X-MP, and 32M 64-bit words of memory, is claimed to offer two to three times the system performance of the biggest X-MP and 30 times that of the Cray-1 introduced in 1976, making it the most powerful Cray yet, also outperforming the Cray-2. It comes with Cray's Unicos implementation of Unix System V as standard, with COS from the X-MP as an option. The machine, which was designed by a team under Steve Chen, now departed to form his own Supercomputer Systems with financial backing from IBM, sells for \$20m. It is designed for fast long and short vector and high-speed scalar processing, and comes with one or two input-output subsystems. A 128M-word solid state storage system is also standard. Cray says it has two orders in the bag, and will make its first shipment to a customer in the third quarter. The company's plan calls for three or four Y-MPs to be shipped this year, and in 1989 it will build them at a rate of one a month. A new DS-40 disk subsystem stores 20.8Gb on four drives with four controllers for transfer rate of 9.6Mbytes-per-second and costs \$1m for X-MP, Y-MP or Cray-2. The FEI-3 interface provides a gateway to Ethernet and supports Sun, Apollo, Motorola or Iris workstations. The FEI-3 gateway is \$12,000.

TADPOLE ADOPTS CAPLIN'S HARDWARE WINDOWING GRAPHICS CHIP

Cambridge-based Tadpole Technology Plc, and Isle of Dogs, London-based robotics specialist Caplin Cybernetics Corporation have a non-exclusive technology agreement which allows Tadpole to develop and market a graphics accelerator chip creating the new concept of hardware windowing. Tadpole is the first company to adopt the chip, and it will market the product, the first for its newly formed Silicon Engineering group, in Europe and the US, as a manufactured product mainly to its customer base. The deal, initiated six months ago, allows Tadpole to design the VLSI chip in detail and market it in either VME board form or chip form.

READY, PLESSEY TEAM ON UNIX-BASED VRTX DEVELOPMENT SYSTEM

The Palo Alto, California-based real-time embedded operating system developer Ready Systems Inc has signed a deal worth in excess of \$3m with Plessey Microsystems to market VXCEL, an integrated real-time Unix software environment, aimed at military and commercial VMEbus markets worldwide in demanding applications that require teams rather than a single programmer. VXCEL is an operating system which combines Ready System's VRTX32 Versatile Real-Time Executive multi-tasking kernel with Unix System V Release 3 for real-time multiprocessor application developments, and will be marketed by Plessey for use throughout its VMEbus board level products range. For application development, VXCEL performs real-time target processing, while the Unix portion provides control and management functions. According to Plessey, the key features of VXCEL are that it incorporates Unix as an integral development environment; it allows the use of alternative host systems; it offers both Unix and real-time tools; it incorporates the widely used VTRX32 kernel; and is available for all popular microprocessors so users need not be dependent upon one particular silicon vendor. It also provides on-line support for Ada. The product will be ready in the second quarter and Plessey is understood to have already signed a contract for the product with a large European commercial customer; no prices were given.

ELXSI UNVEILS PEGASUS SUPERFRAME

Elxsi Corp, San Jose, last week unveiled a new processor (UX No 166) for its 6400 series of minisupercomputers and claimed that systems using it offered twice the power of the IBM 3090-600 at a third the price. Called the Pegasus Superframe, the new minisupercomputer fully configured comes with 10Mb cache, 320Mbyte-per-second bus supporting 10 of the new processors, 2Gb of fast memory and as many as four concurrent operating systems. Elxsi, where Dr Gene Amdahl is chairman, rates the machine at 250 VAX MIPS and 100 MFLOPS on the 100 by 100 Linpack benchmark. As well as impressive vector and scalar performance, the machine is claimed to offer the transaction processing speed of the best in large database machines - and current Elxsi systems can be upgraded to the new performance. The company reckons that users would need £28m of DEC VAXes to gain the same performance. A Pegasus Superframe system consisting of one 6460 CPU - rated at 25 VAX MIPS, 10 MFLOPS - 32Mb memory, 823Mb disk, tape system and operating system is \$695,000. A fully configured 10 processor system is \$4m. Operating systems are Unix System V, BSD 4.2, the proprietary Embos, and EMS emulation of the VMS environment.

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HEWLETT-PACKARD EXTENDS UNIX COMMITMENT, UPGRADES 825 CPU

Making good on its promise to give its HP-UX Unix equal weight with its proprietary MPE operating system in its business product line, Hewlett-Packard Co yesterday announced that it will be making its principal office software - including its NewWave applications environment - available under Unix. The company also announced a floating point upgrade for the processor in its HP9000 Model 825SRX Spectrum RISC workstation which it believes makes it the highest-performance workstation on the market. The company justifies this by saying that most current workstations now run at 1 MFLOPS, while the upgrade enables the 825SRX to deliver over 2.0 MFLOPS against 1.1 for the Sun 4/260 and 0.45 for the MicroVAX 3600. The Silicon Graphics 4D/70 is rated at 1.12 MFLOPS. The upgrade is also claimed to increase the MIPS rating to 14 VAX MIPS from 8 MIPS in the current version. The enhancement, which involves a processor board set swapout, also applies to the HP 9000 Model 825S minicomputer, increasing performance more than threefold in some applications. The \$10,000 upgrade will be available March 1; the Model 825SRX workstation is \$69,500 and the multi-user and Unix server 825S is \$42,500. On the subject of office software under Unix, Hewlett says that development of the products will be done in three parallel phases. The HP3000 host-based office and communication services will be reimplemented under the HP-UX version of System V.2, and will be supported by MS-DOS and OS/2 micros running Hewlett's NewWave application environment. NewWave enables MS-DOS users to work across multiple applications simultaneously, and to access data and files from multiple sources without having to know where they are. Second, Hewlett will provide an X Window interface through which MS-DOS and OS/2 systems will be able to run Unix applications - as far as we are aware, this is the first announcement of plans for an X Window facility for MS-DOS and OS/2. And in the third development, NewWave will be implemented under HP-UX and offered on Unix workstations. Hewlett's enthusiastic endorsement of Unix is beginning to pay off in new business, and the company reports that McDonnell Douglas Manufacturing and Engineering Systems Co has chosen Hewlett as its Unix workstation vendor in an agreement worth \$20m in the first year. The machines will be used as platforms for McDonnell's Unigraphics package. It also has a \$16m order from Ford Aerospace and Communications Corp for 767 68020-based HP9000 Model 330 workstations for use in its manoeuvre control system-nondevelopment item pact with the US Army.

INFORMIX, INNOVATIVE COMPLETE MERGER

The merger of Informix Software Inc and Innovative Software Inc was completed on last week following approval by shareholders of both companies. Innovative shareholders get three-quarters of an Informix share for each share they hold. According to Informix chairman and chief executive Roger Sippi, "by integrating the office automation product technology pioneered by Innovative with the SQL-based technology of Informix, we intend to give users unprecedented levels of access to information."

UNIX ON THE MAC - BUT NOT SO FRIENDLY

Apple Computer Inc reportedly held back the launch of its A/UX Unix for the Macintosh II (UX No: 166) to make a big splash at UniForum last week, with Chairman John Sculley taking over the keynote speech to make the announcement. Based on SVID-compatible Unix V.2.2 with Berkeley 4.2 and 4.3 extensions, A/UX was developed in conjunction with Unisoft Corp, and is supplied fully loaded on hard disk. It comes coupled with a Macintosh Toolbox held in read-only memory, allowing A/UX programmers to combine the Mac interface with their products at source level - but it does not come complete with a full front-end to Unix. X-Windows is supported as an option. Communications options include TCP/IP and the Network File System. Apple says that existing Macintosh Operating System (MOS) applications will run unchanged using the Launch shell emulation product, if they have been written to conform to Apple's "Inside Macintosh" programming guidelines, set down in 1984. Unfortunately, estimates put the number of programs conforming to these rules as around 250 out of the 3,000 or so Mac products currently available. Part of the effort at UniForum was to persuade developers to modify existing Mac programs or port over Unix applications. Text-oriented code is reportedly a simple port, though graphics-based software could take longer. Adapting Unix software to utilise the Mac interface was said by an Apple spokesman to be "not an easy task, as with any windowing software, but well documented". Software on the stand included the MacNIX/A interface for locating and accessing files via icons by List of Pisa, Italy; an implementation of Sun Microsystems' NeWs windowing system by the Grasshopper Group, San Francisco, California; the Wingz spreadsheet from Informix Software Inc, Menlo Park, California (previously Innovative Software); Statview II statistical analysis and graphics package from Abacus Concepts Inc, Berkeley, California; and Intermedia, a "hypermedia" system for integrating text, graphics and data within a database framework. The European edition of A/UX has been held back due to the implementation of the Data Encryption Standard in the kernel; a worldwide version will be available in early April. A/UX came into some criticism for its size - 56 Mb on an 80 Mb hard disk - although Apple says that dealers will be unlikely to supply all the features, reducing it to a more manageable 30 Mb or so. A/UX is booted up from MOS, which is then "pushed aside" for A/UX to take full control. To return to MOS the machine must be re-booted, and presently file transfer between the two environments is not possible on the same machine. Apple says it is putting a lot of work into bringing the two closer together, and intends A/UX to become more Mac-like in future editions.

TI SETS ENHANCEMENTS FOR 1000 AND 1500

Texas Instruments Inc is now pretty much dependent on Unix for its survival in the computer systems business, and accordingly it has been preparing some enhancements for its TI System V for its Intel and Motorola-based System 1000 and 1500 Unix families. No, it's nothing to do with extra-sensory perception, it stands for Extended Symmetrical Processing, and it is designed to enable all CPUs in a multiprocessor system to share equally the applications workload and system control.

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The organisers of UniForum were claiming around 15,000 registrants by the end of the first day of the conference and show.

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Toshiba America Inc duly announced pricing for its T5100 PBS (Personal Business System) (UX No 165) at UniForum last week: a retail price of \$8,950 has been set for the Unix portable which will be sold through OEMs, VARs and systems integrators.

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Although the San Antonio, Texas headquarters of **Datapoint Corp** denied all knowledge of any previous Unix-based OEM deals the European divisions are quick to point out that the OEM deal with **Charles River Data Systems** (UX No 165) has not sunk without trace as we suggested: Datapoint offices in France, the Netherlands, Germany and Switzerland have been selling the machines very successfully since the deal was signed back in 1984 as data-entry systems and the Algerian government has recently signed with the French office for \$2m of the Charles River-based systems.

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US brokerage company **PaineWebber Inc** is developing a prototype trading floor support application using technology from **Sun Microsystems**: the distributed system will be based on Sun-3 workstations and will use Sun's NFS.

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Alliant Computer Systems Corp has reported fourth quarter net down 10.0% at \$1.9m, after a tax credit of \$356,000 and a gain of \$1.2m from the repayment of debt, on turnover up 16.1% at \$14.2m; net for the year to December 31 was up 51.2% at \$6.9m, after a tax credit of \$2.1m, on turnover up 74.9% at \$53.8m: net earning per share fell 25% to \$0.18 in the quarter and rose 21% to \$0.64 in the year.

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Convex Computer Corp has reported fourth quarter net up 65.3% at \$2.3m, after a tax credit of \$925,000, on turnover up 56.1% at \$20.2m; net for the year to December 31 was up 121.5% at \$8.8m, after a tax credit of \$3.3m, on turnover up 73.3% at \$69.6m: net earnings per share rose 63% to \$0.13 in the quarter, 81% to \$0.49 in the year.

Sun Microsystems announced at UniForum that 50 companies and universities have licensed its NeWS software technology products based on the NeWS technology include **AT&T, Silicon Graphics, Santa Cruz Operation, Parallax Graphics, Acorn Computers, and Raster Technologies** - these companies will make the NeWS technology available on a wide variety of systems including the Macintosh II in early 1988, OS/2 by mid 1988, and Xenix by late 1988, Sun has also added support for the Intel 80386 microprocessor running standard Unix System V.3 to the NeWS software product.

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In a related announcement, **Sun and Santa Cruz Operation** announced last week that SCO will license Sun's XII/NeWS window technology, a merged version of the NeWS technology and version XII of the X Window System: the companies will cooperate to bring this advanced window technology to the Xenix operating system community.

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Convergent Inc has reported a fourth quarter net loss of \$23.9m, after a loss from discontinued operations of \$5.6m, up from a loss last time of \$4.5m, after a tax credit of \$292,000, on turnover that was up 29.7% to \$100.4m; there was a net loss for the year to December 31 of \$32.6m, after a loss through discontinued operations of \$6.1m, down from a loss last time of \$32.8m, after a tax credit of \$3.7m, on turnover that was up 25.8% to \$384.8m.

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Tigera Group Inc has reported a fourth quarter net loss of \$372,000, against a profit of \$631,000, last time, on a turnover \$239,000, up from \$15,000 last time; net loss for the year to December 31 was \$19.9m, up from a loss of \$1.7m last time, on a turnover of \$405,000, up from \$15,000 last time: Tigera has a small Unix office software business but is mainly still a cash shell with millions in accumulated tax credits after sale of Fortune Systems Corp to SCI Systems Corp last year.

IntelliCorp Inc, Mountain View, California has extended its marketing agreement with **CSK Corp** of Tokyo, which has distributed IntelliCorp's artificial intelligence software since 1983, and the new agreement extends the relationship to December 1988; under the new agreement, CSK is contracted to generate \$1.8m in product licence, support, training and development fees for IntelliCorp, primarily from IntelliCorp's flagship Knowledge Engineering Environment, but also SimKit and PC-Host; CSK will now also distribute KEEconnection and J-KEE, IntelliCorp's new Japanese version of the Knowledge Engineering system; CSK has so far sold over 125 copies of the English language version of the KEE system.

- 0 -

Nippon Apollo Computer has made preparatory moves towards manufacturing in Japan by spinning out its specialist hardware integration arm and moving it into a new Integration and Distribution Centre to be built on the outskirts of Tokyo: this operation will marry Apollo CPUs sent from the US with disks and network controllers, printers, graphic displays and keyboards all sourced locally and chosen according to customer specifications; Japanese components already account for 30% to 40% of the value of Apollo's systems sold there, and there is some financial advantage in local assembly of equipment to be sold in Japan, not least because it cuts lead times; arch-rival **Sun Microsystems** has plans to manufacture in Japan, Europe and Asia, but its main production base is still in the US.

- 0 -

UK software house **JSB Computer Systems** of Macclesfield, Cheshire, has announced plans to offer Unix and DOS applications under a single operating system with **Interactive Systems**, Santa Monica, California: 386/ix Multiview will allow DOS textual applications to run alongside Unix applications, allowing cut and paste between the two, and will be sold exclusively by Interactive for release during the first quarter of this year.

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MOTOROLA CLAIMS 17 MIPS, FOR FORTHCOMING UNIX RISC

Seven veils are far too few for Motorola Inc when it comes to teasing the market over its forthcoming reduced instruction set microprocessor, but the company did shed several more last week - without actually giving the part, dubbed by the industry the 78000, but officially named the M88000. Motorola rates the part at 17 VAX MIPS and 34,000 Dhrystones, and says it will generate 50 MIPS in multiprocessor designs. Like the Intergraph Clipper, the processor comes as a three chip set - CPU chip and two cache memory management units, one for instructions, one for data. Naturally, the part runs Unix and is said to be source-compatible with the 68000. A key advantage over Sun's SPARC is claimed to be that the processor includes floating-point as well as integer processor: in addition the company claims that the inclusion of memory management removes the possibility of incompatibility between systems based on the processor. The chipset is based on Harvard architecture - separate buses for instructions and data, with 32 32-bit registers. A technique called scoreboarding, used for register management, is claimed to simplify design of compilers and applications. The set is initially being made in 1.5 micron HCMOS, but will move to sub-micron technology, and will also be implemented in ECL.

Motorola says that more than 200 companies are reviewing specifications of the processor, and early samples are being evaluated by a limited number. Motorola sees the new part being used for everything from minisupercomputers to graphics processors and telecommunications. For those who are now thoroughly aroused, Motorola will remove the remaining veils, giving it a name, complete set of specifications, and availability in the second quarter. In the UK benchmark Technologies of Kingston upon Thames are amongst the 200 reviewing the specifications and are interested in taking on the new microprocessor.

ALLIANT SIGNS LETTER TO ACQUIRE RASTER FOR \$15m SHARES

Preparing to meet the challenge of a clutch of graphics minisupercomputers such as the one on its way from Ardent Corp, general-purpose minisupercomputer builder Alliant Computer Systems Corp announced last week that it had signed a letter of intent to acquire graphics systems specialist Raster Technologies Inc of Westford, Massachusetts with which it had an OEM deal. Alliant, based in Littleton, Massachusetts, has agreed to pay 2.2m new shares for the company, giving the acquisition an indicated value of \$15.4m; Alliant reported \$6.4m net on turnover up 75% at \$54m in the year to December; Raster is privately held, but had sales of \$18m in 1986. The pair expect to sign an acquisition agreement by March 31. By acquiring Raster Technologies, Alliant looks to expand its position in scientific computing by combining its parallel processing minisupers with Raster's high-performance display systems to integrate high-speed computation and interactive three-dimensional graphics, providing users with a set of tools to solve analysis and visualisation problems. Raster will continue to sell and support its Model One family of high-performance two and three dimensional graphics terminals and its new GX4000 line of graphics accelerators. Raster has some 500 end-user and OEM customers, Alliant has installed about 200 of its FX minisupercomputers.

"TOO EXPENSIVE" SO RICOH DROPS AT&T 3B STATION PLAN

In yet another snub for AT&T's sad 3B family of Unix processors, Ricoh Co has abandoned plans to develop an engineering workstation based on the AT&T 3B2/400, which had been planned for availability as the Ricoh/AT&T EWS in January 1988. The company abandoned the plan because the high price of the 3B2 made it impossible to get the price below \$23,000. Ricoh is now considering whether it should develop its own engineering workstations.

OLIVETTI SET TO LAUNCH MULTIFLOW MINISUPER IN EUROPE

Ing C Olivetti SpA is expected to take advantage of its European distribution agreement with Multiflow Computer Inc, Brandford, Connecticut (UX No 155) this week, when it is tipped to launch the company's Trace 14/200 minisupercomputer unveiled at Uniform (UX No 167). Targeted at scientific, engineering, industrial and research applications, the new machine is being handled by Olivetti's Delfi SpA group, situated in Milan. Although its strengths are most obvious in the commercial marketplace, Olivetti currently bases its engineering offerings on the PE workstation series, adapted Olivetti PCs with specialist 32-bit graphics processors, which are connected to a 3B or LSX server. The addition of the Trace machine would allow Olivetti to compete in highly compute-intensive scientific/engineering applications, but appears to leave a gap in its range for high powered workstations. Multiflow has an existing distributor agreement in West Germany with GEI Rechnersysteme of Aachen, which remains exclusive for that country.

ICL LEFT WITH THE VIENNAS AS A RESULT OF STC BUY

Canadian telecommunications and computer manufacturer Northern Telecom last week agreed to sell its complete UK operation and computer marketing divisions in several European countries to the UK's STC Plc for £35m, leaving STC's ICL computer subsidiary with responsibility for NT's Vienna range of Xenix and DOS systems. ICL will continue selling, supporting and servicing the 80286-based Xenix and MS-DOS Vienna systems, but has not yet said how it will resolve potential conflict with its own line of Unix systems, which includes the 80286-based DRS 300, as well as the Clan range built round systems from US manufacturers Datamedia and Computer Consoles.

INDONESIA TO GET \$18 MILLION SATELLITE SEISMIC NETWORK

Indonesia will boast one of the world's most sophisticated computerised seismological data networks when the \$18 million Unix project goes on line next year. The network will link supermicros at regional seismic control stations via satellite with the Indonesian Meteorological and Seismological Agency's mainframe in Jakarta. The French consortium of Bull Far East and Software house Sofrevia will be installing twin Bull SPS 7/70 32-bit supermicros running Unix at each of three seismic control stations on Java, Sumatra and Bali. Real-time data collected at these stations will be processed by the two Bull machines working in parallel before being via satellite to the control data processing centre in Jakarta. This has three SPS 7/70s and a Bull 64 DPS mainframe as well as ~~links to a world-wide seismological network via~~ Singapore and Melbourne. A second phase of the project will involve linking in the seismic control stations at Ujung Pandang and Jaya Pura with the rest of the network. The project, which should be completed by the end of 1990, is funded by the Indonesian Ministry of Communications.

COROLLARY UPGRADES TO 386 - ADDS XENIX KERNEL EXTENSION

Corollary Inc of Irvine, California, launched a new set of products at Uniforum earlier this month, and signed a distribution deal to further its penetration into UK and European markets. The company announced that shipments its 386/mp, the long anticipated 80386 version of its ATtain 286 add-in multi-processor boards would begin in April. Up to four application processor modules can be added to a 386 machine, each with 1-4 Mb of dual-ported memory and four RS-422 concentrator ports. To each of these, an 8 port terminal concentrator can be attached, allowing support for up to 128 users - expanded from the previous limit of 32 users on the 286 ATtain. Also introduced for both versions was an extended kernel replacement for SCO Xenix, which handles serial tasks and user I/O, and ~~distributes user activity between up to 6~~ maximum configuration. Corollary says it has around 100 users for the 286 boards, but admitted that interest in 80386 configurations had eaten into its share of the market. It has now introduced a cheaper entry level option with a 32-port halfcard, the 8x4 mux I/O subsystem for 386 machines; this includes an 80188 processor, 64 Kb memory and four RS-422 ports that will each support an eight port intelligent terminal concentrator. Corollary is pitching this against the existing 8 and 16 port serial cards out on the market. Exclusive European distribution of the product range will be handled by the UK company Specialix Systems Ltd, based in London, which also distributes Chase multi-user I/O controllers. Single quantity, end user price for the 386/mp is \$2,795 for the 1 Mb version, \$4,195 for the 4Mb version. Free to current users, the extended kernel costs \$195, and eight port terminal concentrators are \$595. A basic 8 user 8x4 mux kit, including the board, concentrator, operating system and cabling, costs \$1195.

SPEA AG SELLS FAIRCHILD GRAPHICS BOARDS TO UK AND US

West German graphics system developer SPEA Software AG of Starnberg, Munich has started up its international operations with the simultaneous opening of offices in the US, Boston and the UK, Leicester. Funded by a combination of West German government and venture capital funding, the company manufactures Panther add-on boards for PCs running MS-DOS under Unix V.3, based on the Fairchild/Intergraph Clipper, aimed specifically at the processor intensive graphics marketplace, and sold in conjunction with its Graphiti Series graphics boards. Performance of around 8 MIPS or 2.6 Megaflops are claimed for an 80386 machine fitted with the Panther, which costs £5,000 in the UK. The graphics board costs £2,000 and provide up to 1280 x 1024 resolution, non interlaced, with 2 Mb Video RAM and a colour palette of 256 from 16.7 million. ~~Selling to OEMs and system~~ ~~houses, SPEA says it has so far sold mostly complete worksta-~~ tions, dubbed "Personal Mainframes", but says it expects board sales to be the major focus in the long run. The company has no plans to market its Nat Semi-based Tiger board outside of Germany.

DEC PREVIEWES X.11 ON ULTRIX VAXSTATION AT UNIFORMUM

DEC had a quiet time at Uniforum, but the company did show a sneak preview of the X.11 window system on an Ultrix VAXstation, providing sharper resolution and different fonts from the previous X.10 version, according to a DEC representative. Also on show was an 8000 series VAX running Ultrix and attached to an HSC70 VAXcluster coupler, allowing large amounts of disk storage to be supported. Meanwhile DEC and Systems Strategies, one of the primary suppliers of mainframe communications software for Unix, said that DEC would distribute SSI's VAX Link Ultrix products, that provide Ultrix systems with online and batch communications with IBM hosts. Not surprisingly, there was no sign of a multiprocessor Ultrix system - DEC would anyway hardly be likely to release such a product before it could offer customers a symmetrical multiprocessor VMS - but over at the Usenix technical conference at the other end of Dallas DEC ~~tiprocessor Ultrix kernel".~~ The presentation, by Graham Hamilton and Dan Conde of DEC's Palo Alto facility, described a three-processor system built around a modified VAX 8300 - but the design was targeted at larger systems of around ten processors.

SINGAPORE HUIN HAS MANUFACTURING PACKAGE

Singapore software house Huin Computer Systems has developed an integrated manufacturing control package to run on DOS, Xenix and Unix, and plans to market it worldwide with the help of the local Trade Development Board. Huin's Manufacturing Resources Planning package, E-2 MRP II, took 10 man-years to complete and was partly financed under the Software Development Assistance Scheme. It has 15 modules and is designed for small to medium manufacturing companies. It can run on an IBM XT/AT, but larger users will need a Unix/Xenix supermicro or minicomputer.

ATARI TO UNVEIL 68030 UNIX LINE AT HANOVER

Always keen to preview its future products, Atari Corp, Sunnyvale, California says it will be showing an advanced prototype 68030-based Unix workstation at the Hanover Fair next month. According to the UK's technical manager Les Player says that the system will come with 60Mb memory and 68881 floating point unit as standard, with a base price of around £5,000. Atari previously offered the Unix-like Idris operating system on its 68010-based Mega, previewed at Unix Expo last year, but with the integrated memory management unit in the 68030 will now be offering a full implementation of Unix V.3 (from Unisoft) for the first time. Atari says the new line, which should be available in October or November, is an addition to the range and will not be replacing the 68010-based systems. Idris may also be offered on the 68010-based ST models with 2Mb and 4Mb memory. Also in the Atari plan is its complete desk-top publishing system at under \$5,000 - getting close to the price of a good laser printer alone. The system, extensively previewed last year, will include the Mega computer, the SLM804 laser printer, and Atari Deskset desktop publishing software. Atari is also looking to bring some manufacturing, presently done in Taiwan, back now that currency changes have altered the economics.

CLAN SUCCESS FOR ICL IN HONG KONG AND WEST GERMANY

ICL has won its biggest order yet, £2m, for its Clan family of Unix systems, but needless to say the order is not from the UK, where the Clan has still made scarcely any impact. The customer is the Landschaftsverband Westfalen Lippe local government and hospital services body in Munster, Westphalia, and is for 16 Clan systems running Computer Consoles' OfficePower software, and supporting 300 workstations. The 16 systems will be networked with 15 being scattered through the hospitals around Munster, communicating with an IBM host using SNA. ICL Hong Kong and SIA Computer Services have US\$640,000 contract to install a Unix-based Clan system for a local ship repair and heavy engineering company, Hong Kong Dockyards. The ICL Clan 4 model 255 with 4 Mbytes of memory and 330 Mbytes of disk storage will run Shortlands Gold Accounting Software. ICL will also supply its Uniguide shell/interface to hide the powerful and useful Unix features and simplify its operation and administrative chores. SIA will provide a customised module to go with six standard Shortland modules: general ledger, report writer, accounts payable, accounts receivable, payroll and stock control and fixed assets. The specialised module is for job costing: each ship repair is broken down into hundreds of sub-tasks, each charged for labour, materials and facilities at different rates.

NIXDORF IN MANUFACTURING PUSH

Nixdorf Computer Ltd has turned its attention to the Computer Integrated Manufacturing market in the UK and intends to sign up a number of third party software houses for applications. The Nixdorf 8870 business computers will be sold into small to medium sized manufacturing companies and the Unix-based Targon machines will be aimed at larger operations. The software will be based on Nixdorf's modular Comet business and financial system and the Reflex relational database. The cornerstone of the Nixdorf plan is third party software and the company hopes to sign "a number of alliances over the coming months".

FINALLY X/OPEN SHOWING SIGNS OF NETWORKING PROGRESS

The X/Open Group, as reported briefly in UX No 166, outlined a series of technical directions at the Uniforum conference, emphasising it is at last showing signs of progress on the key area of networking. The first fruits of the work in this area, the X/Open Transport Interface, is derived from AT&T's Transport Level Interface, which was announced with System V.3, but with several modifications. X/Open technical committee chairman Mike Lambert said the modifications included work on event handling to support multiple transports and allow the implementation of servers, and removed dependencies on AT&T hardware. Since X/Open is concerned only about providing portability for applications, the group restricts itself to specifying interfaces and not communications protocols, and XTI is intended to be independent of underlying networking regimes. "We know it can run on an ISO stack and on an Internet stack, and because of the origins [of the interface] we're pretty sure it will run on StarLAN", Lambert said. The next round of interface definition work will address higher level services, and a particularly important area is the production of a transaction processing interface for distributed applications. Based in part on the original study commissioned by the group and presented last year, the interface is in concept at the level of IBM's APPC interface, but Lambert noted that the need to provide data integrity will also have ramifications at the operating system level. With Unix in its current form, "You can't predict if something has been written to disk - which makes it hard to implement reliable transaction processing". The first phase of the Group's graphical interface definition, meanwhile, comprises standardisation on X.11, and Lambert said that in the controversial area of the look and feel of Unix systems, the Group is evaluating which of the contenders it would be possible to use; it is looking at several of the toolkits produced by members of the X consortium of vendors. Microsoft has proposed Presentation Manager to X/Open as a standard interface and Lambert confirmed that the offer was of the nature of putting aspects of PM in the public domain - a move that could defuse problems associated with the proprietary nature of the product. But he said that reports that X/Open was already actively considering adopting PM were wide of the mark.

INVESTMENT GROUP DEMANDS DISMEMBERMENT OR LIQUIDATION OF NBI INC

Management at NBI Inc, Boulder, Colorado is spreading itself too thin, and as a result, the company's various businesses are underperforming, a Woodside, California investment group believes. The group, Fisher Investments Inc, has held about 4% of the company's shares for some time, and has now taken its stake to 5.17% by making additional purchases this month and last. NBI started life as a dedicated shared logic word processing systems business, but in 1984 started diversifying by buying a couple of small Unix systems businesses and a string of office products and supplies companies. Fisher believes there is no synergy between the computer and office products sides of the company, and that one or other should be sold, so that management can devote all its efforts to the surviving business. Alternatively it suggests that the entire company should be liquidated and proceeds distributed to shareholders, or one of the businesses spun off to shareholders as a stand-alone company. Fisher says it will raise its stake subject to market conditions, and seek other like-minded shareholders to join it in putting pressure on NBI. NBI says it will review the proposals. Its shares jumped \$1.125 to \$5.25 last week after the Fisher statement.

IBM THREATENS CLONEMAKERS WITH 80286 PS/2 AT \$1,200

Stepping up the psychological warfare against the clonemakers, IBM Entry Systems chief William Lowe told a gathering in Boca Raton last Friday that by the end of the year, IBM would have announced as many new PS/2 models as it announced last year - that means five - and that there would be a model "with the power of the mid-range models" - that is to say the 80286-based 50 and 60 - at the price of the PS/2 Model 25 - it starts at about \$1,200. The company also promised a desk-top version of the floor-standing 80386-based Model 80 this year. That was the limit of the veil-lifting, but industry gossip has there being big price cuts on the 25 and 30, a Model 40 that will fit Bill Lowe's description, a faster disk and price cut for the Model 80, a Model 90 with a 25MHz 80386 if these are made available by Intel. The Convertible laptop looks to be almost dead, and IBM may need to include a lap-top 80286 model to be able to bid on US government contracts. The Newsbytes wire expects some of the new machines to be at Hannover Fair.

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RABBIT SOFTWARE OFFERS FULL 3270 SNA UNDER XENIX 386

Rabbit Software Corp, Malvern, Pennsylvania, is now making its 3270 SNA and Bisynchronous software personal computers available for 80386 micros running under Santa Cruz Operation's Xenix 386. RabbitPLUS 3270-SNA and RabbitPLUS 3270-BSC, enable the 80386 machine to emulate the full IBM 3270 family of devices including terminals, printers and controllers. With 3270-SNA it can communicate with an IBM mainframe using generalised 3270 data streams and IBM SNA protocols and also supports the IBM PC File Transfer Protocol. It emulates and supports IBM 3277, 3278, and 3279 terminals; LU Type 1 and 3 printers; 3286 and 3287 printers; and 3274 Model 12 control units. RabbitPLUS 3270-BSC provides the same set of emulations using bi-sync protocols. The micro can operate as either a standalone workstation or in a multi-user environment with attached asynchronous terminals. As well as the standard 3270 features, the emulations support up to six concurrent LU sessions on a single terminal; a Suspend/Resume facility so that LU sessions can be suspended while local processing is performed and pick up where they left off; a Read Ahead feature requests the next screen from the host while the current screen is being viewed; Browse enables the user to page back and forth through previously recorded screens without host re-transmission; Screen-To-File copies host data to a file; Screen-To-Printer copies host data to printer without host re-transmission; Cursor Select picks standard lightpen-detectable fields; Password Security enables definition of local passwords on an LU-by-LU basis; and Record records input being sent to, or output from, the host. RabbitPLUS 3270-SNA is \$1,395, now.

DATAVUE TO SHIP SCREAM MACHINE II

Datavue Technical Systems, an Intelligent Systems company, will start shipping its Scream Machine II at the end of March to users doing compute bound operations under DOS. The system has been developed internally using a discrete design based on the Intel 8086 instruction set rated at 10MIPS, with a peak of 22. A standard Scream Machine II has 640K of 32-bit unidirectional SRAM memory and three custom Hi-speed 32-bit expansion slots and seven peripheral expansion slots for a price of \$12,690. Datavue says that the system can be interfaced with a number of different buses for a number of different applications including statistical, graphics and database processing and a system is also being developed for animation. The Norcross, Georgia company also claims that custom I/O designs can be provided to support maximum transfer rates of 100Mb per second. A Scream Machine running Unix will be available during the second quarter. The Hannover Fair next month will see the European Scream Machine II launch and European deliveries will start during the second quarter.

INTERACTIVE ADDING TO VP/ix WITH A LITTLE HELP FROM ITS FRIENDS

After five months of shipping its 80386 Unix port, VP/ix, Interactive Systems Corp has started teaming up with a number of Unix software developers to give its port added flavour. VenturCom Inc, Lachman Associates, JSB Computer Systems and Softbank Research Institute of Tokyo are providing real-time extensions, NFS, windowing and Kanji support. VenturCom, Cambridge, Massachusetts, has committed to work with Interactive to develop real-time extensions for 386/ix by mid-1988. VenturCom introduced its "highest performing real-time version of Unix", Venix V.2.3, for PCs last September (UX No 146). The two companies have committed to produce a fully SVID-compliant product which VenturCom will sell as Venix/386 and Interactive will offer the extensions as an option to 386/ix. Lachman Associates Inc will have its version of NFS ready to run with 386/ix by the second quarter of this year: the agreement will allow Interactive to sell both source and binary versions of Lachman's NFS. UK software house JSB Computer Systems will be providing windowing software for 386/ix (UX No 167). Softbank Research Institute of Tokyo announced plans to add Kanji language capabilities to the Ten/Plus, VP/ix and 386/ix Interactive products. Softbank claims to have already added Kanji support to Ten/Plus and adds that the other work is already underway and should be finished by the end of the second quarter. The Kanji implementation will be sold to Japanese and Korean OEMs by Softbank.

EVEREX DEVELOPS OWN 80386 "STABLE" UNIX IMPLEMENTATION

Four year old PC distributor Everex Systems Inc, Fremont, California has taken it upon itself to produce yet another port of Unix for 80386-based machines. Everex claims that its port, Enix, is a real/stable imple-

mentations from the likes of Interactive and Microport. Everex considers too sophisticated or expensive, adding that this release allows OEMs, VARs and systems integrators to add value in the form of applications as appropriate for the individual user requirements. Everex claims to be more concerned with propagating Unix rather than making money out of it, saying that Unix on the 386 is becoming a commodity item and increasingly difficult to make money out of. The Enix release will be commercially available during the third quarter and will be a single package including runtime, development tools and text tools. A two-user license will cost \$149, and an unlimited user license will be priced at \$249 and both prices include documentation. A beta test version will be available in March, which Everex will distribute to systems and software houses to test.

WORKHORSE ATTRACTS OEM AND USER ATTENTION AT UNIFORM SOFTWARE LAUNCH

Dublin company Workhorse Systems announced the first availability of its innovative Workhorse office automation software (previewed in UX No 161) at Uniform - and the product appeared to be attracting considerable attention from both OEMs and large Unix users. The reason for the interest is that the product seems to be a serious attempt to emulate and support the way that offices work, not just to automate individual office functions. For instance quite complex sequences of tasks, involving several types of staff within an organisation, can be defined to Workhorse which will then perform, in the designated order, such diverse functions as extracting data from files, putting reminders in diaries, making decisions based on predetermined conditions and redirecting the flow of work accordingly, submitting work for approval by the appropriate person, issuing status reports, and assembling and printing documents. The product provides a calendar, diary and mail, but does not include database, spreadsheet or word processor; the idea, according to the company, is that users can include a word processor or database of their choice. The product can interface to SQL-based dbms and to word processors that produce ASCII files. In addition, Workhorse says that applications written in C, Basic or Cobol can be integrated with the system. At this stage, there seems to be little in the way of established competition in the area. One of the better known existing products is Staffware, from UK-based FCMC plc, which has made some impact including an OEM deal with Unisys. Workhorse maintains that its product has a broader range of functions than Staffware in its present form: Esther Dyson's Release 1.0 newsletter, reviewing Staffware last December, praised the product but picked out reliance on a proprietary database and "clumsiness" in the user interface as major deficiencies. Workhorse currently runs on systems supporting SCO Xenix V/286 or /386, and on Al-

eight users. The company, which is selling through OEMs, dealers and VARS and direct to a few end user accounts has offices in Dublin, London and San Diego and is planning an East Coast US office.

WEDGE HAS NeWS FOR MAC

Wedge Computer, of Waltham, Massachusetts, has come up with an implementation of Sun Microsystems' NeWS Postscript-based graphics display language for the Apple Macintosh II and Mac SE. MacNeWS runs under the Mac OS, allowing the machine to act as a windowing terminal to remote host machines connected via serial links, or Ethernet attached directly to the Mac or, through a Sun/Kinetics gateway, to an Appletalk network. MacNeWS also includes VT102 emulation. It needs a Mac II or Mac SE with 2Mb memory and 20Mb disk.

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Amdahl says it has sold some 200 licences for its UTS mainframe Unix - and that AT&T has taken about half of them.

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MCBA Inc and Hall-Mark Electronics Corp, Dallas, have a distribution agreement under which Hall-Mark will market MCBA's software accounting, distribution and manufacturing software packages written in RM/COBOL for UNIX-based systems nationally from its 33 branch offices.

- 0 -

IBM Japan has announced two new versions of the OS/2 operating system - the Japanese language version J1.1 for the PS/55 workstation, and the extended English language version 1.0 for the PS/2: the Japanese language version incorporates multi-tasking and multi-windowing and will support the Presentation Manager - but IBM won't even be announcing a price or delivery date until the end of the year, although users of the American version will be able to upgrade free of charge - so they should, because the thing will cost \$1,200 in Japan, where it arrives in July.

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ICL Deutschland reports that 80% of new business in West Germany in 1987 came from Unix systems: the company has established a German Porting Centre for transferring Unix applications to the Clan family at its Nuremberg headquarters - see report in page five, inside.

- 0 -

Data Logic of Harrow, Middlesex has ported its Dealing Room software to the Stratus range of fault-tolerant systems: the system has previously been sold on Unix-based offerings from IBM, DEC and Unisys and Data Logic cites its reason for porting to the proprietary VOS operating system is that the market demanded fault-tolerance.

- 0 -

Microport Systems has appointed Mishta Systems as distributor in Singapore and India of its System V.3 port to the Intel 80386 processor, selling at \$239 per copy: Unidata has been appointed to do the same in Malaysia.

Minigrams

The US Naval Research Laboratory is to upgrade and expand its Butterfly parallel processing system in a move that will give it the most powerful Butterfly to date, BBN Advanced Computer Inc reports from Cambridge, Massachusetts: the Navy's \$800,000 upgrade, will increase performance to 320 MIPS and hike its memory to 512Mb, doubling the number of Butterfly nodes to 128; the machine is to be used inter alia to simulate expert systems for Navy battle management, and to simulate communication networks or network configuration optimisation.

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Honeywell Bull has named Korean firm Quix the distributor for its Unix-based XPS-100 series minicomputers in Korea: the company, established in 1981, also manufactures personal computers, terminals and printers.

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TeleVideo Systems Inc is quick to say that its non-attendance at UniForum in no way de-emphasises its push into Unix and that its Unix 80386-based products are being received very well even though distribution channels have not yet been finally established: TeleVideo in the UK re-iterated that the reason for delaying the launch of its engineering workstation is because there are a number of bugs in X.11 Windows and precious few applications available for it.

- 0 -

The UK arm of NCR has signed a marketing agreement with UK accounting software specialists Tetra Business Systems of Maidenhead, Berkshire to offer Tetra's Chameleon business system package to run on NCR's Unix-based Tower range.

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ABS Computers of Brighton, England has extended its agreement with Pyramid Computers and signed a 12 month contract worth around £1,500,000 for the Pyramid 9000 series which it will sell as part of its C-Horse range.

Texas Instruments is expected to launch low-end workstations next week designed as low-cost delivery systems for artificial intelligence applications: they will be based on the current TI Explorer range.

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Sun Microsystems has appointed three VARs in Thailand: Automated Systems (HK), Computer Peripheral and Supplies and Royal Computer Systems, each responsible for a different sector of the market.

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According to a recent report from analysts Frost & Sullivan the European Unix market will grow to 16 times its present size by the end of 1991.

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Informix Software Inc has announced that its database server, Informix-Turbo, is now available on the AT&T 3B series, Altos 3068, Amdahl 580, HP 9000/840, Ultrix-based MicroVAX, NCR Unix-based Towers, Plexus P/60, Sequent machines and the Sun 3 workstations.

- 0 -

A prize for the most ingenious use of the C language should surely go to Hong Kong's notorious Club Volvo - the club has 1,000 high-priced hostesses and customers pay large amounts of money to talk to them, buy them drinks or meals, watch the show with them or take them out to a hotel: but this rip-off nightclub-cum-bordello has moved with the time, each table has a POS terminal with colour screen, and each hostess has her own pink card to work it - each time you buy a hostess a drink (nobody drinks alone at Club Volvo) she inserts her card, and while you watch the pictograms of bottles and glasses on the display she enters the price, if a hostess walks past and says "Hello", she slips in her card and a pair of pink lips kiss you from the screen (everything costs money in Club Volvo) - the system, called Futurepolis VAS-12 has 150 POS terminals controlled by twin 80386 PCs and a Microvax II and is also discreet, when you leave with a hostess, the pictogram that appears on the screen (and on your bill) is a pink handbag. i.nb

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APOLLO COMPUTER LAUNCHES ITS 64-BIT PRISM RISC MACHINE

Apollo Computer Inc this week launches its top-end line of 64-bit RISC processors, promising performance, at between 15 and 30 VAX MIPS for single processors, 60 MIPS to 100 MIPS for multiprocessors, that brings it head-to-head with developments from Sun Microsystems, Motorola Inc and MIPS Computer Inc - as it will need to in order to justify the £60,000 entry price. Apollo has coined its own acronym for the new architecture, Prism, for Parallel Reduced Instruction Set Multiprocessing, and it will appear in the form of the Personal Supercomputer - a name cheekily trademarked by Apollo - as a server or Domain-Series 10000 workstation in the third quarter 1988. The processor is a seven-chip 1.5 micron set in CMOS, being made by VLSI Technology Inc, Santa Clara and Toshiba Corp, Japan. ECL and BiCMOS versions are in the plan, and the CPU is rated at 35MFLOPS peak, 8MFLOPS on single-precision Linpack. A three-dimensional graphics system using the architecture is due for announcement in the second half of the year. Designed to use one to four processors in symmetrical multiprocessing configurations, the Domain 10000 can have from 8Mb to 128Mb memory - 512Mb when 4Mbit DRAMs become available to replace the current 1Mbit chips - and 3Gb disk. Server prices start at £60,000 and workstation configurations, with 19" 1024 by 800 display, at £65,000. The operating system is Domain/OS, supporting the proprietary Aegis version of Unix System V or Berkeley 4.3, and Apollo promises source code and binary data compatibility with existing Domain products. The company boasts that the products deliver up to 10 times the throughput of Hewlett-Packard and Sun "high-performance workstations", nine times the throughput of a Silicon Graphics high-end system, and says 20 hardware and software suppliers have committed to use or support the product. Key features of Prism are a 64-bit data path in the CPU, which includes integer and floating point units, 128Kb cache for instructions, 64Kb for data, 150Mbyte-per-second system bus, and shared virtual memory multiprocessing. The architecture supports both VMEbus and IBM AT bus. Apollo has also incorporated some of the dataflow ideas emerging in minisupercomputers like Multiflow's Trace family, saying that new compilers detect parallelism in code, helping the CPU to execute up to three instructions in a single 20MHz cycle.

MOTOROLA TAKES "SMALL STAKE" IN UNISOFT, GETS AT&T NOD

Motorola Inc and UniSoft Group received AT&T Co's blessing this week for their Binary Compatibility Standard that was lacking at the UniForum announcement (UX No 167). Additionally Motorola announced that it would be taking a "small stake" in the London-based software house in a bid to tie the companies more closely together. The exact terms of the deal were not disclosed but UniSoft has committed to deliver ports derived from Unix System V for Motorola's 68000 and 88000-based hardware. President of AT&T's Data Systems Group Vittorio Cassoni said that its goal is to have binary application portability within each of the major Unix-based architectures as well as to simplify the porting of applications across architectures. Motorola says that the three companies will be working together to ensure the consistency of the Binary Standard with other Advanced Binary Interfaces that AT&T is developing with the aid of its partner Sun Microsystems for the SPARC and Microsoft and the Intel camp for the 80386. AT&T has also gone some way to allaying the fears of the Hamilton Group (UX No 167) by saying that it will involve more manufacturers in the beta test programme for System V.4 than it did for V.3 "in order to ensure a consistent and timely Release 4.0 for Motorola and other key microprocessor architectures used across the industry". Motorola is negotiating terms and conditions on this with AT&T.

HIGH PERFORMANCE GRAPHICS WORKSTATION WAR WARMS UP

The price/performance parameters are set, the players and products are emerging - and the contest between the makers of the new class of very high performance graphics workstations is set to be as fierce as the battle has been at the low end of the workstation market. DEC's new VAXstation 8000, co-developed with Evans & Sutherland, leads the stampede to the higher ground where it will face the forthcoming mass of Unix-based products. Planned entries from more established companies, including Apollo Computer's forthcoming 64-bit graphics workstation and the results of the combination of Raster Technologies and Alliant Computer Systems, all serve to increase the pressure on traditional performance leaders like Silicon Graphics, which in turn plans to introduce a series of competing machines by year end. Meanwhile the clutch of start-ups looking to make their mark in the unexploited field is beginning to come to market: Ardent Computer, Sunnyvale, California was this week set to unveil the results of its Titan graphics workstation development while Stellar Computer Corp of Newton, Massachusetts is due out with its GS1000 the third week in March. The machine is expected to come in at \$75,000 for a 20 MIPS model of the Unix workstation, \$125,000 for the 40 MIPS version. The machine, originally promised for early last year, is expected to ship this month; Stellar was founded by Bill Poduska who left another of his creations, Apollo Computer, to form the new company - with Apollo's blessing.

OLIVETTI USA JOINS RUSH TO THE SUN

Olivetti USA Inc in Somerville, New Jersey has followed its partner AT&T Co up the well-beaten trail to Mountain View, California and awarded Sun Microsystems Inc a "multi-million dollar" OEM contract for workstations for use as file servers and processors within an integrated office automation system for the legal market. The Sun workstations will be combined with Olivetti M380 personals and ETV 260 Secretarial Workstations to create a large-scale office system to be marketed by Olivetti USA as a turnkey system for law firms.

UNIFORM BRINGS FORTH X DEBATE

The nice thing about agreeing on an industry standard is that it clears the way for everybody to argue about what to do next. The Uniform exhibition in Dallas was stuffed with implementations of that most eminent of unanimous industry standards, the X Window System, which is backed even by IBM and DEC. Some demonstrations purported to be X.11, most were based on X.10, but nearly all were limited to either canned demos or severely constrained in other ways. One reason is that vendors haven't yet had time to implement applications that actually do anything sensible with X, but another is that it is questionable as to exactly what can be done with any degree of confidence until other key technologies are in place. One problem is the lack of agreed standard high-level toolkits to simplify applications development - over at the Usenix technical conference Sun Microsystems' David Rosenthal gave a nice description of the horrors of implementing the "hello world" program under X using only the low-level Xlib functions, and finished with a program covering several pages of code. The related problem is of course the user interface look-and-feel debate, where Microsoft managed to hit the headlines by making some sort of offer of Presentation Manager to the X/Open Group, Apple may do something to proliferate the Mac interface - assuming it gets round to implementing it fully on its own Unix systems - and Sun, which has already eased NeWS into future Unix releases, is said to be close to trying to sell the world on its latest ideas, when it decides it has something to sell. DEC, with the DEC Windows programme, and Hewlett-Packard with NewWave, have already set out their product directions - but no-one is immune from the future effects of Presentation Manager on the market. Even IBM sees the area as important enough to pitch in and cloud the issue, it seems: The Instruction Set technical director Andy Rutter comments that IBM is finally offering the Carnegie-Mellon developed Andrew distributed window system.

X and NeWS, Sun's offering that will be integrated with it, do not in themselves define the user interface, allowing flexibility in the user interface to be presented - itself part of the attraction particularly in traditional Unix scientific/engineering markets. But a standard graphics Unix user interface is promised eventually - and as Sun's Michelle Arden said, while adopting PM or the Mac interface opens the possibility of "capturing non-Unix applications", the idea is not to get sued in the process.

"The big question" said Rutter "is how to integrate DOS, OS/2 and Unix". And the big problem with "Presentation Manager", is that it's not a networked system:

it's a kernel implementation designed for standalone systems. One common suggestion is to use presentation manager on top of X; a problem is then going to be maintaining binary compatibility with standard PM applications. It's not even as though PM is a neat, small set of interfaces that could be swiftly reimplemented; Ken Pomper, group product marketing manager with the Santa Cruz Operation, said that although it's conceptually possible to implement PM on X/NeWS - the product SCO has signed up for - there's not only the integration problem but the fact that PM has a lot more library calls. One factor in deciding what eventually sways the market, he points out, is likely to be how the proponents of the various solutions make their technology available, whether by licencing or providing specifications. And, as he says, that's an area that Sun has traditionally been good at.

UK COMPANY ANTICIPATES EUROPEAN X EXPLOSION

A small UK company, IXI Ltd of Cambridge, has been set up in response to increased pressure from European companies for information and services about the MIT X Window System. IXI is providing source code and manuals for those interested in X, but has plans to develop software to make it easier to use. The company has announced a collaboration deal with Apollo Computer Inc to provide training and promotion of the system. Managing Director Ray Anderson, (previously with workstation manufacturers Torch Computers, Cambridge), sees four main areas of interest in X currently: manufacturers are starting to implement X on their servers; hardware dependent X tools, such as PC X Cite which converts an IBM PC into an X machine, are now starting to appear (IXI says it hopes to distribute these types of product); programmers software and hardware independent tools are being developed; and application software is starting to appear. X is not yet an issue for major software vendors, says Anderson, but small vendors are moving in, and IXI itself will be working "to take the rough edges away from what is still a technical product". Although it has no official standing with MIT in Cambridge, Mass, IXI works closely with MIT spin off ICS of Boston, and also maintains a link with MIT through Cambridge University in the UK.

User Interface

Anderson remained unconvinced by the Presentation Manager versus X debate raging at Uniform last month. X, and Sun's NeWS, are client/server based systems designed

an application can be accessed across a network, and between different types of hardware. In contrast, Presentation Manager is a kernel based windowing system, designed as an interface for a single user system. "Microsoft would love everything to look like OS/2, allowing it to compete against Apple", said Anderson. "X could be made to look like the Presentation Manager by implementation the top half of it to drive X" This approach would not of course be application compatible with Presentation Manager software. Anderson was also sceptical about reports that Microsoft had approached the X/Open Group to push Presentation Manager as a standard user interface. "X/Open won't go for anything owned by one person. And a single user interface is unlikely to be acceptable to the Group". IXI, the first software house to join X/Open's software partners scheme, says it is developing an X-based interface that X/Open members would find acceptable.

NIPPON SUN LIFTS VEIL ON ITS US PARENT'S PLANS

Lifting a veil on its Mountain View parent's product plans, Nippon Sun Microsystems says that it plans to release two new workstation models over the next year, with a 20 MIPS machine promised for July, followed by a 50 MIPS machine early in 1989, both based on the Sun SPARC Scalable Processor Architecture RISC. It also says that Sun is aiming to have a 1,000 MIPS machine out by 1995. In Japan the new 20 MIPS box will be sold for around \$80,000, and the local company plans to use it as a weapon against its rivals in the Japanese market, Apollo, Sony, and Yokohama Hewlett-Packard.

AS MICRO FOCUS SETS SPARC NATIVE CODE GENERATOR

Micro Focus Plc has announced that it is writing a native code generator for the Sun Microsystems SPARC RISC family so that its Cobol/2 compiler will be available to users of SPARC-based machines. The SPARC thus joins the 80X86 and 68X00 families as "strategic platforms" for Micro Focus Cobol products. The Newbury, Berkshire company says the development will be among the first to use its proprietary template native code technology that is supplied to manufacturers to enable them to write machine-specific code generators for the Micro Focus Cobols.

LOW PROFILE FOR OLIVETTI/MULTIFLOW DEAL

The European launch last week of Multiflow Computer Inc's Trace systems by Olivetti (UX No: 168) proved to be a very low-key affair, with the launch entrusted to its Milan-based subsidiary Delphi SpA, which will exclusively distribute the machines in Italy. Multiflow's Lee Kagan said that the deal represented "the extent of Olivetti's announced distribution plans", but added that Olivetti still had non-exclusive distribution options to all European countries except Germany (where there is an existing deal with GEI) and France, which has not yet been assigned.

CONTROL DATA ENHANCES, CUTS TAGS ON TOP-END CYBER 990s

Control Data Corp has unveiled two new models at the very top of its Cyber line of 64-bit mainframes due for native Unix in 1989 (UX No 167). The new Cyber 992 and 994 succeed the 990E and 995E and are direct descendents of the CDC 6600-7600-Cyber 76 machines. The new models have maximum main memory doubled to 256Mb, and input-output capacity is also doubled by means of more and faster channels; the input-output subsystems are also air-cooled on the new machines where they were water-cooled on current ones. Enhancements to the operating system and the Fortran compiler are claimed to improve performance by between 10% and 20%, and cost-of-ownership - sale price plus maintenance costs, is claimed to be down by 40%. Both machines come in single and dual processor models, and the Minneapolis company claims that each is about 30% cheaper than the IBM 3090 models of comparable components. Deliveries begin in August and the single-processor 992 starts at \$1.9m, a dual 994 \$3.3m.

MATRA HAS 1 MEGALIPS ARTIFICIAL INTELLIGENCE UNIX SERVER

"The most powerful artificial intelligence server in the world" was announced in Paris last week by Matra Datasysteme SA, and the company, which has strong marketing ties with both Sun Microsystems Inc and Encore Computer Corp insists that the X-MS 3000 station is all its own work. The machine is claimed to be the first in the world to breach the 1 MegaLIPS barrier - that's one million logical inferences per second - and is Matra's answer to the Japanese Fifth Generation project. Basically a 68020 Unix machine with from one to eight proprietary symbolic co-processors - which can operate in parallel, the X-MS 3000 is built around a VMEbus, has an Ethernet interface, supports Sun's Network File System and is offered with C, Common Lisp and Prolog compilers. Matra describes the operating system as a "distributed multiprocessor version of Unix; although the machine can be used standalone, Matra sees it coming into its own as a symbolic processing server to a network of workstations. Matra is pitching it at diagnostics, decision support and maintenance in banking and finance, space exploration and basic research. The X-MS 3000 is out first in two models: the entry system has 16MHz 68020 with 4Mb memory, one 8Mb symbolic co-processor, ESDI controller, 140Mb disk, 60Mb tape streamer and Unix, C and Lisp or Prolog, for around \$65,000. The other model has 8Mb on the 68020, two 8Mb co-processors, SMD controller and 600Mb disk, same tape and same software for about \$130,000.

Distributors are being sought for the server in European countries where the French company is not represented. The X-MS 3000 station will be sold by Matra in France and by its subsidiaries in Belgium, Italy and Spain. The VLSI 32-bit processor board, Drake, is being produced from a Matra design by VTC in Minneapolis, Minnesota, a Control Data Corp owned foundry. Matra hopes to shift production to Matra-Harris next year. The Unix implementation used is based on Sun Microsystems' SunOS with a driver added to control the Drakes. Machines with up to four Drakes are available at the moment. The X-MS 3000 can act as a server to the Norsk Data 32-bit scientific mini, called the X-MS 5000 by Matra as well as the Encore machine that Matra sells as the X-MS 7000.

ALLIANT PICKS JAPAN AS MAIN FOREIGN BASE, EYES FACTORY

Alliant Computer Corp, Littleton, Massachusetts has decided that Japan is its most promising foreign market and will establish a subsidiary there, possibly calling it Nippon Alliant Computer, in April. It told the Japanese press that it plans to build both a factory and a research centre in Japan within the next three years, and that it will make the Japanese market its main focus for overseas sales. Competitors there are seen as Convex Computer and Fujitsu Ltd. The new subsidiary will supply the Alliant FX/ series of minisupercomputers to 20 distributors, going after both financial and manufacturing users; Apollo sold 12 Alliant FXs in Japan.

CDC CHIEF ROBERT PRICE DEMANDS US POLICY TO FOSTER SUPERCOMPUTER INDUSTRY

His predecessor, the legendary William Norris, has spent the past couple of decades bending the ears of government and other companies in the US computer industry with challenges and imprecations, most of them sound commonsense, and Control Data's current chairman Robert Price is not going to be seen as a laggard when it comes to polemics. Speaking before the Congressional Economic Leadership Institute, Price insisted that the US should take positive steps to ensure that it retained supremacy in supercomputing. Price declared that dominance in advanced information processing technology is key to world economic leadership in the coming years, and supercomputing is the area where the most important technological developments take place. Price said that although the US currently has a competitive ~~advantage in supercomputing, it is feeling increasing pressure from Japan.~~ "Supercomputers are equally, if not more, important in the technological advances they spawn as they are in their role as engineers of computation," Price told the Institute. "Those advances ultimately find their way into the mainstream of computers from mainframes to workstations and personal computers.

The alpha and omega

Calling supercomputers "the alpha and omega of high technology," Price said they are essential to US competitiveness and economic health. "What it comes down to is this: the nation that leads in information processing technology is destined to be the competitive leader in world trade. It will be the nation that brings more new products to market." Price said that the US has become too dependent on foreign sources for advanced technology, and that it no longer has the necessary infrastructure to support competitive supercomputer development. "There needs to be an ongoing rigorous dialogue with Japan to achieve a level playing field in supercomputer trade," Price declared. "This dialogue should cover the whole range of issues from market access to predatory pricing practices. Protective tariffs or government subsidies to prop up the domestic supercomputer industry are not the answer. What's really needed is a proac-

~~proactive government policy supporting technological excellence in supercomputing.~~ Price made three recommendations for a government policy to preserve the US lead in supercomputing. It should establish a formal programme of assigning promising supercomputer design proposals to specific laboratories and agencies that will procure and integrate systems into their working environments. The procurement of supercomputers that satisfy design and performance should be guaranteed. It should relax and simplify export control procedures. The current policy, he said, "is driven by defence needs, economic concerns and international relations. However, the concept of 'National Security Interest' has been taken to mean only the first of these factors." And the US government should stipulate that the Departments of Energy and Defense and the National Science Foundation give broader support to US university procurements of US supercomputers. "There are still more supercomputers in Japanese universities than in our own universities," he chided the congressmen.

MICROPORT LOOKING FOR CAPITAL

Microport Systems has denied strongly the rumour appearing recently in Computer Systems News that its president Chuck Hickey had put the Xenix developer up for sale. The company added that the misconception may have arisen because the Scotts valley, California company is looking for capital. The \$10m-a-year company is looking for around \$3m over the next two years to fund its 10% a year growth. Microport is currently talking to venture capitalists, investment bankers and looking for strategic partners with a healthy bankbalance and complementary products to their own. The ideal, says Microport, would be either a Unix-based datacommunications company or graphics oriented software house. Separately the company is in the process of opening its Washington DC offices for the federal market and is considering setting up a production plant in Europe. ~~European revenues accounted for 20% of the company's total: it hopes to up this to 40%.~~ Microport Asia will be set up late this year or early next.

UNISYS CORNERS THE UNIX MARKET IN PORTUGAL: 4,500 UNIX SALES IN EUROPE

In renewing its contract with Arete Systems Corp Unisys Corp is taking on two additional models from the San Jose, California company. The new three year contract is valued at \$150m and is for the Arete Systems models 825, 850 and 1200 which Unisys calls the 5000/85, 5000/95 and 5000/90 respectively. The 5000/90 is the only model that Unisys had sold previously. Unisys announced recently that it had sold 2,500 of its Unix-based 5000 series last year throughout Europe and including the top-end 7000 series, that Unisys gets from Computer Consoles Inc, and its Xenix-based PCs the total Unix sales for Europe come to 5,400. The 7000 series was worth \$1m to the company in 1987. Unisys adds that its European sales were spread across the board doing well in its traditional marketplaces: UK, Sweden, France, Germany and the Netherlands. But countries such as Portugal, Spain and South Africa were "absolute winners": Unisys claims 30 - 35% of the Unix-based market in Portu-

NBI NEGOTIATES TO SELL OFFICE PRODUCTS UNIT

NBI Inc, Boulder, Colorado has responded to the hostile filing from the Fisher Investments group (UX No 168) by saying that it had already reviewed all the ideas Fisher was proposing for strengthening its business, and that it was already in preliminary discussions with a number of prospective purchasers for a portion, or all, of the Office Products Division. The division, known as NBI's The OfficePlace, is headquartered in Aurora, Colorado, and also has operations in California, Hawaii, Alaska and Washington state. NBI now intends to focus entirely on its Computer Systems and says that major product introductions are scheduled for next quarter. NBI filed its plans to remove the uncertainty generated by the aggressive Fisher filing, which was damaging its computer business.

SUN MAKES FINANCIAL ANNOUNCEMENTS SHOWS OFF CITY-OF-LONDON OFFICE

Mindful of the volume of news it has been generating recently, Sun Microsystems UK combined the launch of its Sun 4/110 workstations in the UK (UX No 166) with a series of financial announcements overshadowed by Uni-Forum, it also provided a good opportunity to show off its new City-of-London based financial offices to journalists.

Sun claims to have had great success selling its systems to the financial professions, recently, despite the market slump. It has added 20 financial software products to its catalogue since it began its latest push into the financial arena at the Securities Industry Association conference last year. These include the Shark realtime quotation and financial information systems from Wang Financial Services; FXTrader from Berkeley Investment Technology; and the intraday investment banking system from Digital Solutions Inc. Sun products are now being sold into the financial world for trader workstations, frontoffice applications, portfolio management, and system integration. Sun also revealed that US brokerage firm Paine Webber had bought \$400,000 worth of Sun 3 workstations in order to develop a prototype trading floor support system that will integrate the workstationbased system into multivendor networks via NFS. Additionally, Market Vision Corp announced its intentions to offer its Athena Trading Analysis Services software on Sun workstations.

SILVAR-LISCO HAS AVANT GARDS FOR APOLLO, SUN, DEC

Integrated circuit layout software developer, Silvar-Lisco, has introduced a "vendor-independent" layout systems for the design of large gate arrays dubbed Avant Gards - Advanced Gate Array Design System. Silvar-Lisco claims that the software can design arrays of over 150,000 used gates, at densities never before achievable. Avant Gards can use sea-of-gates and 3-layer design styles. By vendor- and technology-independent Silvar-Lisco means that

integrated with Silvar-Lisco's line of IC layout of CAE software products and can be customised to for special technology or foundry requirements. Avant Gards will operate on DEC, Sun and Apollo equipment and is integrated with Silvar-Lisco's other CAE software which include design capture, logic design verification, design layout and physical design verification. Avant Gards will be available within 60 days.

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FIRST POSIX TEST SUITES AVAILABLE THIS MONTH

Contracted by IBM to help with the development of conformance testing software for the IEEE Posix standard (UX No 167), Mindcraft Inc, Palo Alto, California, reports that it has now delivered a working version of the P1003.1 test suite to the National Bureau of Standards, although work on the final version continues. Marcer Nalebuff, VP of Mindcraft said that NBS was also working on a conformance testing suite for the .1 component of Posix - which includes the operating system service interface and C language library definitions - the difference between the two test suites being that the NBS will take account of any ~~FIPS (Federal Information Procurement Standards)~~ options added to POSIX by the US government during the balloting process, currently underway. The Mindcraft/IBM suite will more general, testing products for straight conformance to Posix, and unlike the NBS suite, it does not expect to see a conforming system. Both are likely to be available this month through the NBS, which is expected to charge administration costs only. Mindcraft says it is the only party active in .2 conformance testing - this includes shell and application utilities - but this is currently still in the development stage. Both Nalebuff and Mindcraft President Bruce Weiner have been appointed Research Associates to the .1 and .2 efforts by NBS.

PERIHELLION ADDS X WINDOWS, UNIX COMPATIBILITY TO TEMPT HELIOS DEVELOPERS

Perihellion Software Ltd is working on an implementation of X Windows for the Atari Abaq transputer-based workstation, and is moving its Helios operating system to near source code compatibility with Unix

ing system, but according to Nick Garnett of Perihellion, Unix "is not sophisticated enough to run on sensible, multi-processor systems". The company says it intends to adopt the Posix interface for Helios. The company hopes that by using X Windows and approaching Unix compatibility it will encourage software developers to do software for the machines, in the knowledge that with small changes the products will work on other workstations, such as Sun and Apollo. Developers will also be able to use X Windows to drive the Abaq screen, or use the Abaq as an X workstation logged into another system. The Abaq will be demonstrated at the Hannover Fair, and is expected to be officially launched mid-year. Perihellion says it is looking to promote Helios as a general purpose operating system for the Transputer, which does not include virtual memory or memory protection features and so is unsuitable for a real Unix port.

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Minigrams

Texas Instruments has an OEM pact with Apple Computer for "several thousand" Mac IIs and on Thursday announces a Micro Explorer Mac II with Texas Lisp co-processor, at under \$10,000 with half the speed of the \$50,000 Explorer II. Apple decided not to sell it.

- 0 -

Hitachi Ltd is to start marketing the 2050G 32-bit engineering workstation with shipments starting in April at from \$36,500: the new model is an upgrade of the 2050 launched last year, and runs Hitachi's HI-UX/G implementation of Unix, and adds graphics processor, and the capability of putting up 16.71m colours.

- 0 -

Intergraph Corp, Huntsville, Alabama, has announced a Japanese language version of its Intergraph Engineering Modeling System: the company says that the software uses Kanji for all messages and prompts, dimensioning annotations and on-line help files, and incorporates dimensioning features based on the Japanese Industrial Standard; it runs on Intergraph's Clipper-based workstations, and has sold 1,000 copies of the American version since launch last July; no Japanese prices.

- 0 -

Datapoint Corp has reported a second quarter net of \$1.8m, against a loss last time of \$65.9m, on sales up 13.3% at \$84.2m; mid-term net was \$2.7m, against a loss last time of \$70.3m, on sales up 6.0% at \$154.4m. Net per share was \$0.22 in the half.

- 0 -

Elxsi Corp has reported a fourth quarter net profit of \$207,000, against a loss last time of \$2.9m, on turnover that rose 33.9% to \$5.5m; net profit for the year was \$850,000, against a loss last time of \$17.3m, on turnover that was up 12.3% at \$25.2m. Net earnings per share were \$0.01 in the year.

- 0 -

TeleVideo Systems Inc has reported a first quarter net loss of \$4.5m, against a profit last time of \$163,000, on turnover that fell 9.5% to \$24.5m.

The IEEE's Posix committee last week narrowly approved a draft Posix standard, but the committee's chairman has requested fine tuning of the standard and another round of voting: meanwhile the version agreed last week will be presented to the IEEE Standards Committee on March 10 - slightly more than 75% of voters approved the standard but the recirculation of ballots is intended to clarify wording and address the concerns of two negative voters.

- 0 -

The UK National Central Bureau of Criminology (NCB) based at New Scotland Yard have taken delivery of a five user Strix text retrieval system developed by Microbel of Newark, Nottinghamshire and delivered on an Altos 686 machine running Xenix by Riverside Information Systems of East London.

- 0 -

Diab Data of Sweden has launched its entry-level two 32-bit processor, DS90-20E, to extend the range of its DS90 series: the system run Diab's real-time SVID compatible implementation of Unix, D-NIX.

- 0 -

Uniplex Ltd has made its range of Business Software available on the AT&T/Olivetti 3B2 range of minis.

- 0 -

International Transputer products developer start-up, Niche Technology, has appointed Transtech Devices of Penn, Buckinghamshire as a UK distributor for the NT1000 Advanced Computer Platform.

- 0 -

Informix Software Inc last week announced that its line of relational database management software and development tools are now available for machines running OS/2 from Microsoft.

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Digi-Data Ltd of Maidenhead, England has launched a Xenix 386 driver for its 2000 PC half-inch tape streamer, which allows 2000 PC users to give PC ATs read and write access to data held under Xenix: the driver costs £400.

Acknowledging that the future of Unix is firmly in the hands of AT&T despite the standards efforts of the Posix committee and X/Open Masscomp Corp has revealed that it has initiated discussions with AT&T about incorporating aspects of Masscomp's real-time implementation of Unix, RTU, in future versions of Unix System V: Masscomp says that AT&T's reaction to the proposal was good but inconclusive and there is no formal agreement.

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Last month AT&T announced that its Documentor's Workbench (DWB) release 2.0 would be the final DWB release from AT&T and have instead endorsed the Canadian SoftQuad's Publishing Software as the replacement product and will be marketing Softquad as the standard: AT&T will continue to license release 2.0 but will take it no further.

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Pyramid Technology Corp has announced a three year \$5m joint marketing and development agreement with Systems Management Inc of Illinois: the two companies will jointly market Pyramid's machines with SMI's manufacturing and financial software which will run under Vmark Software Inc's UniVerse database management system using Pyramid's dualport OS/2 Unix operating system and a jointly developed RPL interface to UniVerse - Pyramid sees the agreement with SMI as a means of carving a niche in the Pick marketplace.

- 0 -

Real Time Systems of the Isle of Man in the UK and Management Analysis Systems Support of Aberdeen and Livingston in Scotland have announced that they have ported C Documentor, an automatic report system for programmers working in C, and C Scan, a source code analyser for C, to run under Unix on Apollo, Sun and Hewlett-Packard machines.

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NCR Ltd in the UK has signed an agreement to market the 4GI development tool, Progress, from Slinn Computer Group Ltd on its Unix-based Towers.

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ARDENT LAUNCHES TITAN - SILICON GRAPHICS RESPONDS

Ardent Computer Corp chose to launch its Titan graphics supercomputer last week on the same day that rival Apollo Computer took the wraps off its Series 10000 - and the machines looked fairly similar, despite Ardent's claims to the contrary. But with Stellar Computer Inc's GS1000 waiting in the wings for launch next week, Silicon Graphics revealed that it too would shortly be announcing a major upgrade of its own graphics capabilities. Ardent's Titan uses a 64-bit parallel vector architecture similar to that used in supercomputers such as the Cray X - MP, achieving a claimed peak performance of 64 MFLOPS. The machine also processes and displays graphical images at 200,000 full-colour 3D shaded polygons per second. It can be configured with up to four 64-bit vector/scalar processors, each paired with a general purpose integer processor, has a high bandwidth processor to memory structure, and comes with Fortran and C compilers that accept and transform DEC VAX and Cray Research versions of the language. The Unix operating system in System V.3 with Berkeley 4.3 extensions, and the system comes bundled with Ardent's Dynamic Object Rendering Environment software, for interactive visualisation of complex data generated by the supercomputer (UX No: 166). European managing director David Howes pointed to the vector processing capabilities and 24 phase, 48 plane colour graphics of the Titan as differentiating factors from the Apollo DN10000s. "They are topping off their workstation range - Sun and Silicon Graphics should be worried, but not Ardent". Silicon Graphics, however, pointed to its existing catalogue of existing real-time 3D graphics applications as a major advantage. UK Managing Director Tim Marlton said that the company would follow next week's graphics enhancements with faster processor and multi-processor announcements in September. Silicon Graphics uses the MIPS Computer Systems RISC chip, currently running at 12.5 Mhz, but due to be upgraded to 16 and 25 Mhz versions in the near future.

CONVEX GETS FIRST CRACK AT HOT NEW FUJITSU ECL ARRAYS

At the heart of Convex Computer Corp's just announced C2 range of mini supercomputers is new air cooled ECL gate array technology only released by Fujitsu within the last month. The new machines, collectively called the C Series, use 20,000-gate CMOS arrays and the new Fujitsu 10,000-gate ECL gate array which the company says gives machine compactness and reliability. Convex has also developed a parallel processing technique, dubbed Automatic Self Allocating Processors, ASAP, which keeps all available CPUs busy. The company claims that the technique, which enables the hardware to take code parallelised by the Convex compilers and split it among the processors is faster and more efficient than the commonly used static allocation technique, which gives a single job to a processor and leaves other processors idle anticipating parallel code. Convex adds that the technique does not require programmers to use special programming techniques to use the parallel architecture. This is because Convex has introduced new compilers for the C Series that adds automatic parallelisation to its vectorising and optimising compilers. The compilers accept most popular dialects of Ada, C, and Fortran. Convex has enhanced its implementation of Unix, based on Berkeley Unix with System V extensions, for the C Series. Enhancements include disk striping, vectorised runtime libraries, support for simultaneous parallel and multiprocessing, and shared memory. Six new models are included in the C series: the new entry-level system, C120, is an enhanced version of Convex's previous C1 range and is rated at 40 MFLOPS and is priced at \$275,000; the C130 is an upgrade for the C120 but uses the ECL technology of the C200 series and is priced at \$445,000; the C210 is the base unit for the parallel processing system which has on 64-bit processor tightly coupled with main memory through its own 200Mb-per-second bus, rated at 50 MFLOPS, priced at \$595,000; the C220 is a dual processor with 100 MFLOPS performance, priced at \$870,000; the three processor C230 costs \$1.12m; the top-of-the-range C240 is priced at \$1.35m and Convex says that it is capable of running at speeds exceeding 200MFLOPS. The C120, C130 and C210 are available now, the C200 in the second quarter and the C230 and C240 during the fourth. Convex claims that the C210 is already installed at 12 sites. Existing C1 machines can be upgraded through a processor swap and all machines are binary compatible.

PRIME PROMISES NATIVE UNIX

Robert Fischer, who has moved up to run the Computervision acquisition as well as Prime Computer Inc's own CAD/CAM and engineering divisions, says that the Natick, Massachusetts minimaker will have a native Unix for its core 50-series minis later this year, reports Computer Systems News. Primix is Unix under Primos.

TEKTRONIX TO USE MOTOROLA RISC, SHEDS 1,000 EMPLOYEES

Although Tektronix Inc, Beaverton, Oregon announced at the end of last week that it will be introducing a new-generation workstation, becoming one of the first to use Motorola's 88000 RISC it also imparted bad news: a massive 1,000 people from the company's 16,900 workforce would have to be laid off by the end of the firm's fiscal year on May 28. Some 300 in the Information Display Group were told on Friday that they no longer had a job, and affected employees in other groups and administration will get their pink slips in the next few weeks. "While orders and sales in our current quarter are higher than last year's levels, expenses have continued to grow faster than sales, said president David Friedley: "there's just no question that we must reverse that trend to get Tek back on the track to growth and profitability." Most of the reductions affect managerial and professional jobs, and most will be in the Portland area. The planned changes will lead to significant charges for redundancy payments and restructuring of some businesses being taken with the fiscal third quarter figures to last Saturday, and an overall loss is likely. Tek will focus on portable oscilloscopes, television-related kit and graphics printers and terminals, and it sees growth opportunities in telecommunications equipment, workstations and measurement.

HITACHI HAS UNIX VERSIONS OF LISP, PROLOG

Extending the integration of its Unix workstations with its IBM-compatible mainframes, Hitachi Ltd has announced HI-UX Lisp, based on Common Lisp, and HI-UX Prolog, based on the Edinburgh compiler written for the DECsystem-10. The new compilers will enable artificial intelligence applications written on Hitachi's 2050 68020-based workstations to be run on its M-series mainframes. They support variables and comments written in kanji, and have support windows. HI-UX Lisp has a Fortran interface, the two cost \$3,900 together, and Hitachi looks to sell 1,100 Lisp, and 2,000 Prolog, still the more popular with Japan's artificial intelligentsia.

APOLLO COMES OUT FIGHTING WITH PRISM

"Apollo Computer has in the past been accused of being overly modest and hanging back on its achievements" said company CEO and Chairman Tom Vanderslice at the Boston, Massachusetts launch of the new Series 10000 "personal super-computers" last week (UX No: 169). If so, then the tough workstation market has knocked it out of them, for the presentation was littered with references to competitors, including the claim that the Series 10000 could deliver up to thirteen times the total throughput of arch rival Sun Microsystems' top-end SPARC-based 4/200.

Apollo says it asked users what technological developments they would like to see when it began work on the Series 10000 back at the beginning of 1986. The answer was that most were looking for a supercomputer on the desk, with big integer performance and extremely high floating point performance, backed up by fast memory and I/O support. Other factors were open standards, software compatibility with existing applications, and a computational range.

Prism

To implement this type of product, Apollo went back to the drawing board and designed from scratch a new architecture called Prism - Parallel Reduced Instruction Set Multiprocessor - which borrowed techniques from supercomputers to support its proprietary RISC chip set. The cpu itself, rated at 8 MFLOPS on single precision Linpack, is claimed to represent a more fundamental approach to RISC than existing systems, with a powerful instruction set including single cycle load/stores, fixed length instructions, and delayed branching. Each cpu combines an integer processing (IP) unit with floating point unit (FPU) - both are independent but tightly integrated - and this avoids the overhead problems some times associated with floating point co-processors. The IP is a 1.5 micron semicustom CMOS VLSI RISC-based design, while the FPU features a semicustom CMOS register file, and independent ALU and multiplier in ECL. Each cpu has dual caches, one (128 Kb) for instructions and one (64 Kb) for data.

Taking the supercomputer model, Apollo has included 64-bit data paths and registers, and has designed a 64-bit 150 Mb/sec "X-bus" for communications from cpu to main memory and other processors. The wide data paths allow simultaneous IP and FPU instruction dispatch and parallel execution of up to three operations. Data Flow compilers, using expert system techniques, detect parallelism in code to help take advantage of multiprocessor configurations. Up to four independent cpus (including IP, FPU, cache and memory management unit) can be supported, with multiprocessor task management

controlled by the operating system, Apollo's recently launched Domain/OS implementation of Unix System V.3, Berkeley 4.3 and Aegis (UX No: 165). Shared operating system code means that each processor selects the next highest priority process from a common ready process queue. Other system features include up to 128 Mb of 16-way interleaved main memory, shared virtual memory additional VME and PC/AT compatible buses, and high performance disk drives.

Although Apollo said it would be prepared to licence its Prism technology to other vendors, it qualified the statement to include only specialised vendors. The cpu boards are currently being made by Toshiba Corp. in Japan and VLSI Technology Inc, Santa Clara, California. Initially, the Series 10000 will be available in server or computational workstation configurations, but later this year a graphics model will be launched, including a specialised RISC drawing engine and frame buffer. Prices begin a \$79,900 for a DN10010-E, with 8Mb memory, 19 inch display, 8 plane colour and 348 Mb disk. This compares to \$65,400 for a similarly configured Sun 4/260C, but Apollo claims it cuts the price per MFLOP from under \$60,000 on the Sun to around \$16,000 on its own machine.

Competition

After Sun's launch of the Sparc processor back in May last year, and its subsequent launch of the Sun 4 range of workstations, Apollo was perceived by the general marketplace as having fallen behind in the technological race. According to Russ Barber this was a necessary, though painful period: "we could have a seven to ten MIPS workstation ready by the end of 1987, but we didn't want to be in the pack, so we decided to take gas for six months". Of course Apollo still does not have a competitor for the Sun 4, but it says it will be announcing performance boosts for its Series 3000 and 4000 workstations - including 68030-based systems according to Vanderslice - later on in the year. It will also be moving its Prism architecture systems downwards as well as upwards, anticipating that in 18 months time, half of its revenues will be accounted for by Prism systems.

Meanwhile the company has a different "pack" to contend with - a challenge from similarly targeted systems from start ups Ardent and Stellar, and from its more established rivals Silicon Graphics, which claims to have been the first to exploit the real time 3D graphics marketplace. And these won't be the only ones to enter the market, says Dr Egil Juliussen of hardware testing labs Workstation Laboratories Inc, Dallas, Texas. "What we are seeing is the next generation of workstation technology, providing the mainframe power you need for running 3D CAD/CAM and CAD/CAE on a workstation. Sun and others will do that too. It's a good market".

MANUFACTURERS SET OUT INTERFACE STRATEGY

While much of the market is still waiting to see what emerges from the Great Unix User Interface Debate, a few manufacturers have already staked out their strategy. One, of course, is DEC, whose commitment to X for Ultrix is only part of the broader DECwindows programme. Another is Hewlett-Packard, which recently said it would be porting its NewWave environment to Unix and already has a plan in place to integrate it with X Windows. HP already has a history of involvement with X, having developed a X toolkit that has been put in the public domain - although HP has nevertheless been approached by several vendors about licencing the software, according to HP's X Window Programme Coordinator Ed Lee; the advantage of licencing is that vendors would get a supported product.

Iconic Representation

In its current form, NewWave exists on top of MS Windows on DOS machines and is seen by HP as the basis for an office software environment. It adds features such as an iconic representation of files and "agents" - that be used to capture frequently used sequences of commands or actions such as merging data into reports, and perform those sequences at predetermined times. HP's plans include implementing NewWave on X, moving the resulting combination to Unix - and the intention is also to provide Presentation Manager compatibility for the Unix product. Among the advantages will be both that a common look-and-feel will be provided across HP systems (the company is also examining the possibility of moving the technology to the HP3000), and that the networking inherent in X will be added to NewWave applications. "We would like to add the networking transparency of X", said Lee.

Presentation Manager

One of the biggest problems, providing compatibility with Presentation Manager, is also something that the rest of the industry has to deal with. Since the look of NewWave is itself based on Windows/PM, HP will be likely to use X to implement the appearance of PM under Unix. But because NewWave exists basically as a PM application, the company's porting job would be eased considerably if the PM programming interface could also be implemented on top of X. The company hopes to do this with the cooperation of Microsoft, according to Lee. In the near term, the company is hoping to implement X under DOS this summer, to be followed by an implementation of the NewWave Object Management Facility. Subsequently, X will appear under OS/2. After that, the look and feel of PM is planned for Unix, to be followed by the hoped-for applications programming interface.

ICL TALKS UNIX, TALKS WITH PHILIPS AS STC ANNOUNCES RECORD RESULTS

STC Plc has announced a "record" set of results for 1987 with pre-tax profits taking a hike of 40% and turnover hitting the two billion mark. This announcement was accompanied by bullish statements about the company's prospects in the Unix and telecommunications markets and a marked boost in confidence now that STC has the acquisition of Canadian giant Northern Telecom's UK business firmly under its belt. Pre-tax profit for the year to December 31 was 40% ahead at £188m, but turnover was up just 7% at £2066.6m. Chief executive Arthur Walsh said that he expected this growth to continue in 1988 and further claimed: "the group has made good progress in establishing its role into the next decade". Any convergence of ICL's business with that of its parent will have to wait for the current priority, which is to integrate STC's telecommunications interests with those of Northern Telecom. The overlap of Northern Telecom's Vienna business systems with ICL's DRS 300 and low-end Clan range will continue for the next two years at least, and each company's lines will be marketed separately. STC said it would then initiate work on integrating aspects of the two product lines. Despite these apparent signs of neglect preliminary results for ICL were solid with turnover taking an 11% upturn on last year's figures at £1,299m. Overseas business however continues to flag - foreign turnover increased by a tiny 2% - currency fluctuations were blamed - which implies that it did just £440m, 33.8% of the total - overseas: less than a decade ago, ICL was doing a little under 50% of its business abroad, and no major computer company can afford to do much over half its business in its home market without going into decline. Despite City fears, there was no immediate sign of any nasties on the ICL profits front - operating profit climbed 23% to £109.9m, and margins improved to 8.5%. ICL said that its business in non-performing countries, namely West Germany and Scandinavia is being rationalised. ICL managing director Peter Bonfield pinned hopes of company growth mainly on its family of Unix products: "A major thrust into Europe will be on the back of the Unix operating system for vertical industry niches" he said, and confirmed that informal discussions were taking place with Philips, although no details of what is afoot were given.

APPLE EXTENDS MAC-TO-HOST FOCUS WITH NETWORK INNOVATIONS BUY

Apple Computer Inc announced yesterday that it has acquired its Cupertino neighbour Network Innovations Corp, which markets linking software products for distributed computing. Financial terms were not disclosed. Apple said that the two companies plan to promote Network's CL/1 language as a new industry standard across all major computing environments. CL/1 is an SQL-based language for building desktop-to-host applications and is designed to operate over AppleTalk, DECnet, OSI, SNA 3270 and Apple's APPC/LU6.2, linking desktop computer applications to data in incompatible minicomputer and mainframe systems. The first CL/1 connection, Mac-to-VAX, provides transparent access from within programs on the Mac to databases, files and applications running on a DEC VAX mini. Similar products to link the Mac to IBM mainframe databases are planned and Network Innovations will develop and market CL/1 toolkits to support MS-DOS and OS/2 micros. The privately-held firm, will operate as a subsidiary.

OPTIM TAKES A 10% STAKE IN BLEASDALE COMPUTERS, SAYS IT WANTS 20%

UK Unix-based microcomputer builder Bleasdale Computer Systems Plc, Lutterworth, Leicestershire, - whose shares are traded over the counter on Harvard Securities' market, currently at an embarrassing 3.5 pence or so, having been as high as 40 pence - has sold a 10% stake to vertical markets turnkey software specialist Optim Computer Group Ltd of Letchworth, Hertfordshire. Optim says it wants to raise its holding to about 20% to strengthen its diversification moves - and the companies share a finance director. Bleasdale has a machine approved for use in government by the Central Computer & Telecommunications Agency, and some of Optim's customers have asked for such a machine. The company's main product is its Field Service Management System which is sold turnkey at a base price of £5,000. An version for networked MS-DOS micros with a lower entry price will be released next week. The current single user and multi-user versions run only on IBM or Olivetti personals, the IBM RT and the AT&T 3B. Bleasdale's customers will be targetted with Optim products. Optim also announced the acquisition of an ICL Traderpoint dealer, QCL Systems Ltd in Lancashire as part of the drive to broaden its customer base. For Bleasdale, the deal will enable the company to raise funds for expansion. At the end of this month the company will launch its 68030- based machine running Unix System V.3 with a base price of £18,000. Bleasdale announced financial results for the year ended November 30 1987, showing a pre-tax profit of £68,509 against a loss last time of £270,000 on turnover down 11% at £823,260. Bleasdale attributed its improved performance to a reduction in overheads - the London office was closed and all operations were headquartered at Lutterworth - and the company moved into new technology service areas including consultancy, maintenance of Bleasdale hardware and third party Unix-based micros and also turned to vertical markets such as local government and telephone order processing. The company entered the 68020 Unix market in 1986 when it unveiled its own processor and scrapped a deal under which it sourced processor boards from Cambridge-based Tadpole Technology Plc - another Harvard Securities company, whose shares have not done too badly. Tadpole does still supply Bleasdale Computers with memory management units.

RADIUS SEEKS TO GROW BY ACQUIRING UNIX HOUSES WITH VERTICAL APPLICATIONS

Unlisted Securities Market counter, systems house and Texas Instruments reseller Radius Plc of Hull, England is bubbling with pre-tax profit up 40% on sales up 37.5% for the year to November 30 (see back). The company attributed its strong performance to its switch to Unix products with the focus on vertical markets. What has proved to be a winning formula for Radius was in large measure created by Texas Instruments' decision to abandon its proprietary operating system in favour of Unix. This forced Radius to diversify by acquiring two Unix specialists last year - Armstrong Micro Electronics Ltd for £500,000 and Advanced Business Technology Ltd - also a Data General reseller - for a nominal sum - and building up Unix expertise. Now Radius is committed to continuing to expand by organic growth and acquisition of firms with vertical market software and systems. Radius also has a 5.4% stake in the listed Altos Computer and Wyse Technology distributor Logitek Plc "as an investment".

IBM WOOS OEM CUSTOMERS FOR PS/2, COMPONENTS

IBM is beginning to realise that it needs endorsement for the Microchannel Architecture of the Personal System/2 from other major manufacturers if it is to counter the runaway success of 80386-based machines that use the "old" AT bus. And last week, Entry Systems chief William Lowe told the Wall Street Journal that IBM was looking to supply other major computer manufacturers with key Microchannel components on an OEM basis, and was also prepared to supply complete PS/2s under OEM contracts. On Friday, Olivetti leaped to deny that it was holding talks with IBM - but Lowe was almost certainly referring to a licence agreement with the Italian for the design of the Microchannel. Olivetti has reportedly already revealed at an informal lunch that it did have a licence for the Microchannel. Siemens already buys 3380 disk drives OEM from IBM, but on the PS/2 front is not likely to be interested in buying more than key chips used in the machine. IBM is now clearly worried that its strategy to persuade the whole world that the original Personal Computer family is dead and that PS/2 is the future has not been very successful. Certain models of the original IBM Personal Computer family are still available in several European countries, and Lowe commented that sales of these machines were "stronger than I expected". Making things worse, several manufacturers, led by Compaq, have declared that programs written for the new OS/2 operating system run faster on AT bus boxes than they do on IBM's comparable PS/2 models, drawing the conclusion that there are no performance benefits to be had from using the Microchannel.

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CYGNET HAS UNIX OPTICAL CONTROLLER PACK

Cygnnet Systems Inc, making high capacity, high performance optical disk jukeboxes in Sunnyvale, California, has introduced JIMS Jukebox Interface Management System software that enables the Series 1800 jukebox systems to be run from a Unix or Xenix machine. JIMS is described as providing a simple, high-level interface between any host application and a Cygnnet jukebox. Written in C, JIMS will first be available for the Sun Microsystems Sun-3, but versions for Xenix System V, and BSD4.2 and 4.3, and DEC VMS, are planned. The Series 1800 supports up to five drives and can handle up to 141 12" double-sided disks - 366Gb.

FAULT-TOLERANT AUGUST IS BACK FROM DEAD WITH NEW PARENT, NEW CPU, STRATUS PACT

Fault-tolerant supermicro manufacturer August Systems Inc, which seemed to vanish a couple of years ago when it ran out of cash, is alive and well and now living in Crawley, West Sussex - and has a couple of cheerful stories to tell. It has joined forces with Stratus Computer Inc to marry its skills in real-time fault-tolerance with those of Stratus in general purpose computing, and it will have a new 68020-based machine out in May. The CS 3000 will be based on a trio of Motorola 68020s, and will be offered with the pSOS kernel - that's Plessey Silicon Operating System - and a fault-tolerant Unix kernel. Renamed Bonar August Systems Ltd and now a subsidiary of £240m-a-year Dundee, Scotland based conglomerate Low and Bonar Plc, the company was rescued by Low and Bonar in February 1987. Low and Bonar gained world rights to August's industrial fault tolerant controller, the 68000-based CS 300 for what was clearly a nominal, but undisclosed sum. The technology is based on a technique known as triple modular redundancy, using software implemented fault tolerance: this works by having three processors execute the same code in parallel, and where one of the three produces a different result from the other two - as a result of some malfunction or soft error, a majority vote on the right answer is taken by the three processors. August Systems' machines were designed primarily for use in real-time manufacturing operations, and under the agreement with Stratus Computer Inc, the two companies will combine their product lines to provide complete real-time fault-tolerant plant and supervisory control systems for manufacturing and process applications, from plant floor control to management information systems. The company's management is now British based but operations span the Atlantic and research and production are done both in the UK and the US. The bulk of Bonar August's sales have been in the US, where there are over 100 CS 300 systems installed in applications from chemical process control.

PYRAMID GOES FOR CASE IN THE US, SERVICE IN THE UK

Competition in the commercial transaction processing market forced Pyramid Technology Corp to change its sales strategy from geographical to application based. Pyramid now says that this new marketing strategy is now in place worldwide. Each of the company's subsidiaries has set up specific "business units" for vertical markets. In the US Pyramid is looking to sign agreements with software houses developing applications for the finance, telecommunications, public and CASE markets. In the UK CASE has been substituted for the service industry and added an additional division to concentrate on OEM/third party relationships.

FRENCH AST USES VRM TO RUN PICK AND UNIX ON IBM 6150

Pick enthusiast AST of Boulogne, France claims to be the sole French supplier of Pick Systems' Open Architecture Pick on the IBM 6150. The company, no relation to AST Research - board manufacturer, also claims to be the first to use the 6150's Virtual Resource Manager to run both Pick and Unix. Two year old AST also promotes Pick on the IBM PCs and the 9370.

AND EDGE GOES FOR PICK/UNIX IN AUSTRALIA WITH HISOFT

Edge Australia is hoping to capitalise on an anticipated 40% growth in Pick popularity and a growing interest in Unix in Australia by signing a joint marketing agreement with Hisoft Computers Pty, Ltd to sell the Edge system with an integrated Pick/ Unix operating system from Toltec. Hisoft announced last month (UX No 165) that it would be selling the Edge LSX 3090 despite competition from Olivetti Australia.

SYSTEMS DESIGNERS FORMS JOINT VENTURE WITH BRITISH TELECOM

Systems Designers Plc has put some 85 of its staff into a new joint venture company with British Telecommunications Plc to market secure, tamper- and espionage-resistant computer systems for government and business. British Telecom is contributing an undisclosed cash sum to the new Secure Information Systems Ltd, in which it will hold a majority 51%.

DANSK DATA MOVES INTO THE UK WITH SUBSIDIARY

Dansk Data Elektronik A/S of Herlev, Denmark has set up a subsidiary in the UK to sell its Unix-based Supermax 32-bit multi-cpu system. Previously the Supermax had been sold in the UK by Crellon Microsystems which is not renewing its distribution contract. DDE Great Britain Ltd is now looking for new distributors and other "co-operation outlets" for its systems. Dansk Data has subsidiaries in Sweden and Belgium and is considering setting up in other countries.

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Minigrams

The threat posed to IBM by Unix continues to grow: according to Dataquest, San Jose, California, the Unix market is expanding at an annual rate of 48% and will clock up \$7,200m of business in 1990, against \$1,700m in 1986; Dataquest also predicts that by 1990, education will account for 11% of the Unix market compared to a current 9%, industry will drop 2% to 55%, and that the public and military sectors will remain a constant 34%.

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And International Data Corp, Framingham, Massachusetts confirms this upward trend in the Unix market, and predicts that investments in the operating system during this year alone will rise by a healthy double figure percentage: future plans may also be affected by the fact that a reported 50% of Unix users in the US want the system to expand to fulfill a key role within the data processing activity of a company, implying that Unix is already being seen as the standard operating system of the future.

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Sun Microsystems Inc has won a small accolade from Standard & Poor's Corp with a lifting of the rating on \$100m of its subordinated debt to single B plus from single B: the New York rating agency likes the way the company is gaining market share and that it is posting robust sales and profits growth - and also the fact that AT&T is to invest money in it and buy a stake, but is not yet prepared to put the Mountain View firm's paper into the blue chip A category because it worries that Sun has a narrow product focus and the market could turn against.

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Radius Plc saw net profits for the year to November 30 up 44.2% at £1.4m, on turnover up 37.5% at £10.5m. At the pre-tax level profit rose 39.7% to £2.1m; net per share rose 45% to 14.5p in the year.

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General Electric Co Inc, Lotus Development Corp, Microsoft Corp and Intel Corp have joined forces to push GE's Digital Video Interactive technology as the industry standard for interactive video graphics: the technology supports 72 minutes of full-motion video, advanced graphics and audio on a standard read-only compact disk: more than 50 software companies are exploring applications based on the technology, and GE will this month deliver prototypes to the first 10 of them.

It has only just announced its original 68020 News workstation in the US and Europe, but Sony Corp last week announced a new generation of the Unix machine, based on the Motorola 68030 microprocessor at a US exhibition: the News 1800 series is claimed to offer twice the performance of the existing models, but no price or delivery dates were given - the News stations were a runaway success in Japan last year.

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Rather than sell them as an integrated business, NBI Inc, Boulder, Colorado has decided to convert seven of its 24 sales branch offices into independent dealerships: three - in Dallas, Atlanta and Salt Lake City - have already gone for \$1.2m, Cleveland will go any day now, and Pittsburgh, Seattle and San Antonio will follow soon after - in general they are being acquired by the local managers and staff - it says that its direct sales organisation has its greatest success in metropolitan areas where it has a concentrated customer base, while independent dealerships have done better in secondary markets.

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Rikei Co, a Japanese trading company specialising in electronic products, has picked up the Encore Computer Corp Multimax machine for marketing in Japan, and hopes to sell 20 of the multi-NS32332 parallel Unix machines in the first year: conceived at Carnegie Mellon University in Pittsburgh, the Multimax will sell for around \$180,000 for a standard configuration of four processors in Japan; a terminal processor supporting up to 32 users for use with the machine sells for \$11,500.

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Nippon Sun Microsystems and Prime Computer have signed an agreement under which Nippon Sun will have access to Prime's library of software packages for marketing to run on Sun workstations: packages covered by the agreement include the Medusa and GNC, which run on the Sun 3/60; there are few competing products in the Prime and Sun lines, and collaboration will enable the two companies to offer links between their hardware running the same applications; Sun sells only the American language version of the Sun workstations, while its joint venture partner Toshiba Corp sells the Japanese version of the Sun 3, as the AS3000, providing Japanese language functionality through the use of a Unix product called JAE for Japanese Advanced Environment, from AT&T Co Bell Laboratories.

Nippon Sun's major distributor in Japan is C Itoh Data Systems, and it has won some major OEM customers in Japan in the shape of Tokyo Electron and Nippon Steel as well as Toshiba: its installed machine base in Japan is around 5,000 units, and fiscal 1987 turnover of \$39m is forecast to double or better this year.

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The big Sumisho Computer Services Co has begun marketing a range of packages for the DEC VAX series to complement its system integration services: in the first part of the operation, Sumisho has acquired from ASR International exclusive rights to six software packages which run on the VAX superminis and workstations, including Exsys, an expert system development support tool which has already been sold to 300 companies running on the NEC PC 9800 series and the Sony Corp NEWS Unix workstation; and the Blast communications package, which can be used to link the VAX to mainframes and Unix workstations alike; Sumisho Services looks for \$600,000 of new business from the move in the first year.

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Software house Toyo Information Systems Inc, developer of the Brains expert system development tool, is to reimplement the mainframe version of the package to the 32-bit Unix workstation environment, and release it for sale from this month, at a price which is expected to be around one-fifth of the current price on mainframes; the first workstation on which it is to be sold is the Sony News, where it will cost around \$11,500, much less than the usual price of around \$60,000; Toyo will also release a version for the Hewlett-Packard HP9000 Model 350 series in April and thereafter it will look at other workstations such as those of Sun, and looks to sell over 100 copies in the first year.

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Intel Corp is tipped to come out with its own chip set for building low-cost clones of the IBM Personal System/2 in competition with Chips & Technologies Inc and Western Digital Corp: according to PC Week, Intel will announce the set, and a companion Video Graphics Adaptor set, in the second quarter; volume is likely late 1988 or early 1989 - the move could lead IBM to activate its rights to fabricate the 80386.

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UNISYS MAKES EMPHATIC COMMITMENT TO UNIX: AT&T, SUN PACTS

Unisys Corp last week joined the rush to the Sun Microsystems, that is, announcing that it planned to use Sun's SPARC Scalable Processor Architecture in an as yet undefined range of future products. Unisys is also working with AT&T to add commercial functionality to System V, primarily in the areas of transaction processing, where AT&T perceives Unisys as having considerable strength, and development tools. Unisys is also looking to offer development tools in the open market - currently it has the Linc, Mapper and Ally applications generators - and will probably port them to microprocessors for which there are binary applications standards, thus reducing the support and development effort required. Peter Bakalor, Unisys vice-president for business strategy, said SPARC products would be extensions, not replacements, for the current products in the Unisys Unix lineup. He added that the company may mix Unisys-developed products with SPARC products bought in from outside suppliers, and hinted at targeting the products at new lines of business including scientific workstations. The existing Unisys Unix line includes machines from NCR Corp, Arete Systems Corp, Convergent Technologies and Computer Consoles. Arete has already declared in favour of SPARC for future products, while Electronics News hears that NCR is set to soon choose between the SPARC and Motorola's 88000 for a processor for future products in its Tower line. Unisys, meanwhile, already supplying Sun workstations for a \$279m US National Security Agency contract. In the same way as the widespread adoption of Motorola's 680X0 processors has enabled Unisys to cobble together a degree of compatibility for a 680X0 based product line bought in from a variety of suppliers, it appears that Unisys is banking on the fact that the SPARC architecture will be so widely adopted that it will be able to pick and choose its future SPARC products from its own development teams or a variety of suppliers. The bonus is that in contrast to the incompatibility between 680X0 products currently on the market, software portability between SPARC products will be guaranteed by the Sun/AT&T Applications Binary Interface. Bakalor said that the areas of transaction processing software under discussion with AT&T cover functions such as recovery schemes and transaction monitors: AT&T says however that there is no talk of Unisys getting direct access or involvement with the next generation Sun/AT&T Unix development at Menlo Park, California. AT&T is increasingly looking to third parties to cooperate in the development of tools to surround the Unix standard: termed by AT&T the Applications Operating Environment (AOE), tools such as C compilers, debuggers, and communications software for OSI, SNA and TCP/IP will be offered as the recommended AOE. These products could come from existing industry products or as new developments: Bakalor says it is too early to say how extensive Unisys' role in this will be.

MORE SUPER WORKSTATIONS FROM STELLAR AND SILICON GRAPHICS

The race towards supercomputing graphics performance continued this week with the introduction this week of Stellar Computer Inc's Model GS1000 and the IRIS 4D70GT. Newton, Massachusetts start-up Stellar claims 20 - 25 MIPS, and 40 MFLOPS performance from the GS1000. Performance is derived from an architecture applying parallel processing, vectorising, parallelising compiler and high bandwidth technologies. Stellar is pitching the 64-bit machine at mechanical computer-aided engineering, electronic computer-aided design, computational fluid dynamics, molecular modelling, animation and image processing. The Stellix operating system is Unix System V.3 based with Berkeley 4.3 extensions, supporting vectorising and parallelising Fortran 77 with Vax, Cray and Convex extensions, and C. Not wishing to be left behind in the graphics performance race, Silicon Graphics of Mountain View, California, has revealed its own challenger: the IRIS 4D70GT (previewed in November (UX No 155), which is claimed to provide a seven fold increase in polygon processing over its predecessor, the 4D70. A graphics architecture including seven new types of VLSI graphics processors are integrated in a parallel architecture that incorporates 50 of the new processors. Priced at £70,000 and available immediately, the 4D70GT the system comes with a windowing program called 4Sight, which combines the features of X-Windows and NeWS with real-time graphics. Existing 4D 60 and 70 workstations can be upgraded to the 4D70GT.

HAMILTON GROUP TAKES POSITIVE ACTION

Members of the Hamilton Group of vendors objecting to the Sun/AT&T relationship are taking the first positive steps towards producing an alternative Unix standard, hears Electronics News. The paper says members of the group are looking to establish a University based Unix development corporation, and have approached both Berkeley and MIT about doing so. Two options under consideration are said to be a non-profit development organisation, and a commercial company that would then contract development work to universities. In either case, development work would be open to access by any company.

NCR TO CHOOSE BETWEEN SUN AND MOTOROLA RISC

NCR is at least four to six weeks away from deciding between Sun's SPARC and Motorola's 88000 for a RISC processor for future models of the Tower line of Unix systems, says Electronics News. The company reportedly rejected offerings from Advanced Micro Devices, MIPS Computer Systems and National Semiconductor.

CHIPS & TECH "SET WITH COPY OF 80386"

"Reverse engineers are racing against time to complete designs that are functionally equivalent to the Intel 80386 but do not infringe any of Intel's copyrights," we wrote last July (UX No 136) - and the first such microprocessor could be just around the corner. An analyst at Donaldson, Lufkin & Jenrette told the Dow Jones Professional Investor Report that Chips & Technologies Inc, Santa Clara is believed to be developing an 80386-compatible microprocessor that will deliver significantly higher performance than the original. Intel has irritated customers for the 80386 by failing to get anywhere near to meeting demand for the part while steadfastly refusing to licence a second source, but if legal clones of the microprocessor start to appear, that policy is likely to rebound on the company.

ULTRA HIGH SPEED NETWORKING: SUPPLIERS MOVE TO TACKLE THE SUPERCOMPUTER COMMUNICATIONS BOTTLENECK

It doesn't seem so long ago that Ethernet was regarded as an esoteric and expensive solution looking for a problem. Where, people asked, was the market for all that bandwidth - even taking into account the fact that the effective throughput of typical Ethernets is limited by the performance of communications software to perhaps a tenth of the nominal 10Mbits per second? How times have changed. Now, many are talking about the 100Mbit FDDI fibre optic network becoming as standard a feature of graphics workstations as Ethernet is today. But even this order of magnitude improvement over Ethernet will not satisfy the needs of the high end of the scientific/engineering market - a market that until quite recently consisted of small numbers of Cray or other supercomputers and large mainframes. Now, with minisupercomputers spreading among not only existing supercomputer sites but also facilities whose budget would previously only encompass VAXes, the throughput problem is affecting many more users. And the latest technology to arrive on the scene, the Personal Supercomputer, promises to exacerbate the problem still further. Each time scientists and engineers are provided with extra power, they rapidly learn to eat it up by automating more and more complex tasks - and in the process are likely to expose bottlenecks in other areas of their computing resources. Relatively slow links between the user and the supercomputer were acceptable only as long as users were conditioned to accept the fact that supercomputer power was only available rarely, at great expense and at distant computer centres. Now, users may expect to be able to use minisupers interactively; and in turn, the demand is growing for much faster links either directly to Crays or between minisupers and Crays for those problems that are just too big for the minisuper to handle. In addition, the spread of graphics technology enables researchers in scientific fields to raise their sights again, expecting to be able to shuffle huge amounts of image data between machines - in real time if possible.

Accordingly, most of the minisuper and supercomputer suppliers are already working with one or more of the specialist networking companies that are developing very high speed communications products to address these needs.

One of the most widely backed developments in the area is not a networking standard at all, but a means of providing a standard equivalent to the high-speed point-to-point interfaces already offered by Cray Research, Convex Computer Corp and others. The High Speed Channel standard is being drawn up by ANSI committee, X3T9.3, and in its initial form defines a copper cable connection supporting 800Mbits per second - to be extended to 1.6 Gigabits in future. An indication of the interest in the standard is that IBM, DEC, Cray, and Convex are all said to be involved in its use or definition. However, the use of copper cable is a prime reason for one of the limitations of the HSC standard - the 25 metre limitation on its distance - and Integrated Photonics of Carlsbad, California is developing products that extend the use of HSC to fibre optics, enabling links up to a kilometre in length. Integrated Photonics, a subsidiary of fibre optics specialist Pacan Corp, is offering its Toplink

HSC products as an integrated package including a laser transmitter, fibre optic receiver, and an ECL gate array formatting chip capable of handling up to 450Mbits per second. Two of these formatting chips work in parallel to provide the HSC bandwidth, and up to six could be used altogether, according to Mathieu Van Den Bergh, director of marketing at the company, providing a maximum of some 2.4 Gigabits per second.

Although HSC is primarily designed for direct machine-to-machine connections, Van Den Bergh says that it is possible to have multiplexed links that can be shared by several machines, and that some large companies are also in the process of adapting the products to support limited topology networks. The product is still expensive at around \$2,000 - \$2,500 for the basic components in quantities of 50-100. A complete package for Cray, Alliant, would be likely to set you back about \$20,000 - but Van Den Bergh claims that the Integrated Photonics connection still works out at the lowest price per megabit throughput on the market. He envisages the products being used to allow graphics workstations to act as terminals to supercomputers for real time display of images in applications requiring simulation or animation - and as he points out, the throughput is not only needed at the high end. Even a cheap graphics display with 1,024 by 1,024 pixel resolution could require hundreds of megabits per second of data per second in order to provide an acceptable refresh rate.

Meanwhile, other companies are addressing the problem of true networking at the gigabit per second level, and in the process having to cope with the complexity involved in getting protocols to operate at these speeds.

Greg Chesson, a former Bell Laboratories researcher who is now Chief Scientist at Silicon Graphics Inc, is acknowledged as one of the key developers in the area of increasing networking performance by encapsulating communications protocols in hardware; the work that he is involved in will be covered in more detail in a future article.

San Jose company ~~Ultra Network Technologies~~ has adopted an approach that in some respects is similar to that outlined by Chesson, and is planning a series of networking products using high-speed buses and ISO protocols embedded in hardware. Ultra is keeping its cards close to its chest ahead of a launch planned around May 1988, but the products are said to comprise a network of "hubs", each of which uses a high-speed backplane called the Ultrabus ("The extended backplane", Unix Review, October 1987). Connections to host machines are via adaptors, which are said to be planned for the Cray HSX channel connection, VMEbus, and FDDI; each adaptor is expected to include a chipset that runs the ISO protocol stack, ultimately providing throughput of up to one Gbit per second. But the ISO protocols are general-purpose, large and complex: doubters are already saying that not only will Ultra's solution be expensive - some \$10,000-\$15,000 for a boardset supporting the protocols - but also that initial implementations will provide a far lower bandwidth, perhaps a tenth of the 1 Gbit target.

DEC INCLUDES PARALLEL LIBRARY WITH MULTIPROCESSOR VAXes

With DEC's announcement of its first symmetrical multiprocessing hardware and software last week, it made its first foray into the world of parallel processing. The company has added a parallel processing run-time library as part of the VMS SMP operating system software and is looking to establish third party relationships for applications software. VMS SMP allows all processors to initiate I/O functions. In Release 5 of VMS, for which no dates are set, DEC will make the SMP enhancements, available to the 8700 and 8800 models. DEC also says that it is working on a version of Ultrix optimised to run on its SMP hardware, adding that current incarnations of Ultrix will not run on the hardware. Both hardware and software will be available in April. £451,200 is the price for a standard configuration 8810 with: 48Mb main memory, MicroPDP-11 console, VMS licence, DECnet software and node licence, Ethernet adapter, VAXBI bus, VAX-cluster adapter. The 8820 is priced at £674,400 and a 8830 at £826,400 and the quad version is priced at £1,011,000 with a sample configuration comprising: 128Mb main memory; 2.5Gb disk; MicroVAX II console; 71Mb RD53 fixed disk drive, and 95Mb TK50 tape drive; VMS, DECnet and node licences; two Ethernet adapters; two VAXBI buses; and one VAXcluster adapter. Upgrades from one version to the next are £213,600. An upgrade for the 8800, which DEC says has the equivalent performance of an 8820, to the 8830 involves a box swap and costs around £100,000. DEC 'recommends' that an 8700 user should upgrade to an 8800 and then the 8830. This architecture will not support more than four processors because the bus bandwidth is limited to 70Mb. The 8810 is rated at 22 times the VAX-11/780 and the 8840 will deliver between 3.5 and 3.8 times the performance of an 8810.

RTI AND GOULD LOCKED IN LEGAL DISPUTE OVER INGRES FOR OASIS

Relational Technology UK is embroiled in a bizarre legal dispute with Gould Computer Systems over the supply of RTI's Ingres dbms for Phase IV of the UK Royal Navy's Oasis administration system; according to UK weekly Datalink, Gould sourced Ingres direct for the £11.5m contract under its OEM agreement with RTI in the US, thus being able to quote a low price for the bid; RTI UK claims Gould will be unable to offer adequate support. Gould UK confirms it has received a writ from RTI UK, says that its lawyers advise that the claim will not succeed in any respect, that it has the necessary support resources and that it will vigorously defend the suit.

SONY BRINGS DUAL 68030 NEWS WORKSTATIONS TO EUROPE

Two members of Sony's NEWS family of workstations were officially launched into Europe last week, two weeks after their introduction in the US, along with a host of strategic alliances from European software houses. The NWS-1850 is a dual processor system with 68030-based main processor, a second 68030 as I/O processor, and 68882 floating point co-processor (all running at 25 Mhz), and is rated at 5.2 MIPS. Prices had not been finalised at the launch, but were expected to fall within a range of \$35 to \$45 thousand. Also launched was the NWS-721, a 68020-based colour diskless terminal for use in tandem with the NWS 1850, with a 20 Mhz processor, and 4 Mb memory expandable to 8Mb. Prices should begin at \$9,000. Both models run Unix 4.2BSD and support NFS, TCP/IP and X Windows. A single processor 68030 system is expected to be launched over the next few months. Marketed through its Cologne, West Germany based subsidiary, Sony Microsystems Europe, the systems are initially aimed at software developers; hence the preponderance of computer aided software engineering (CASE) partners announced: GEC Software; Associated Computer Experts BV; Westmount Technology BV; and PA Consulting Group. The NEWS systems will be sold through independent software vendors, which Sony is currently recruiting; it will also market to major VARs and universities. The systems will be available from September 1988.

GRAPHICS SUPERCOMPUTERS CHASE DIFFERENT BENCHMARKS BUT SIMILAR MARKETS

Until independent benchmarking figures become available, it's hard to compare the performance of the rush of graphics supercomputers from manufacturers figures, as they all tend to use slightly different methods of measurement. Only Apollo Computer has not yet launched its graphics configuration of the Series 10000 and so cannot be compared at all. Ardent's Titan, which incorporates 52 image planes and parallel pixel processors for graphics code says that images can be displayed at 200 thousand full-colour 3D shaded polygons per second; Stellar's GS1000, on the other hand, boasts 150,000 Gouraud-shaded, Z buffered polygons per second graphics performance, while Silicon Graphics claims 120,000 connected three sided polygons (including Gouraud shading and Z buffering) for the IRIS 4D70GT. What is obviously more important than raw performance is software availability, as all three companies are chasing similar, rather specific market areas, such as sophisticated CAD/CAM/CAE applications, fluid dynamics, molecular modelling, animation, geophysical analysis and image processing. Silicon Graphics says it already has a portfolio of real-time 3D graphics applications, while Ardent has launched an "application alliance" program, including licensed software, joint marketing agreements, public domain software, and Ardent's in-house software developments. And at the Stellar launch the company also claimed to have agreements with a number of software developers in the target application areas.

SUN CLAIMS SHIPMENT OF PRODUCTS USING X.400 MESSAGE HANDLING STANDARD

Sun Microsystems has joined the growing band of manufacturers that claims to be actually shipping products that implement the X.400 message handling standard. SunLink MHS is a gateway and message routing product that links networks of Sun workstations running Sun's existing Unix mail-based product to the X.400 world, for connection to public and corporate mail networks. Users access X.400 networks via the existing Sun mail tools, and addressing formats are the same regardless of whether the recipient uses X.400 or Unix mail. Future developments, according to SunLink product manager Marly Cadozo, include extending the Sun mail tools to allow use of the X.400 facilities for transmitting graphics and facsimile. SunLink MHS is layered above SunLink OSI for local area networks, above SunLink OSI and SunLink X.25 for wide area networks, and will cost about £4,500 when it ships in May.

NATSEMI PROMISES BINARY STANDARD

Spurred on by recent announcements from Sun, Motorola and Intel, National Semiconductor Corp is planning to publish its own binary compatibility specification "within the next six months". European Product Marketing Manager, Software, Mr Hausmann, claimed that the company was already closer to such a standard than its rivals. The company's largest customer, Siemens, already tells its customers that new system models will not require any changes to software, said Hausmann. "The only thing we need to do is small modifications to the object file format, so that all systems can load from a.out or the common object file format". This will involve the modification of linkers. Hausmann said the announcement would be "primarily a marketing exercise".

PRIMAGRAPHICS ADDS IMAGE MANIPULATION TO SUN WORKSTATIONS

Primagraphics Ltd of Royston, Herts in the UK, has launched an adaptor card that allows the company's Topaz graphics modules to be installed in Sun Microsystems workstations, giving Sun users access to Topaz image manipulation in both video and high resolution modes. When used with the company's TV display controller, the system provides full colour frame grabbing and a 24-bit frame store at 768 x 575 pixel resolution. With the high resolution display controller the card provides an 8-bit frame store at 1376 x 1072 resolution. Hardware panning and scrolling are provided within the 2 Mb on-board memory. Prices start from £5000. Previously, Primagraphics has sold the Topaz modules on its own workstations using bit-sliced graphics processors, which it claims offer higher performance, but it is now looking to capture a wider marketplace, including US sales. Shipments have already been made, with London-based graphics specialists CAL Videographics as one of the first customers.

ICS ASIC CHIPS POWER APOLLO 10000 BUT TWO GATE ARRAYS NOT READY

Despite the confident launch of Apollo Computer's Series 10000 at the beginning of the month, it turns out that two of the ten CMOS gate arrays to be used in the systems have yet to be manufactured by the company's ASIC supplier. Electronics News reports that Integrated CMOS Systems Inc of Sunnyvale California, expects to have the chips ready within two weeks: the μ are register files which carry out calculations in conjunction with the floating point units on the Series 10000 cpu board. Meanwhile Apollo insists that its performance ratings of up to 100 MIPS peak performance are based on valid tests, as the major cpu components can be run independently of the register files, which are now said to be running at 100% in simulations. Apollo expects to ship the Series 10000 by mid August, and says that the register files had a later design start than the other gate arrays. Integrated CMOS Systems was contracted by Apollo to design and implement the application specific subsystems for the new RISC-based workstations, said to be the first to achieve an execution rate of more than one instruction per cycle, due to the parallelisation among processors and the 64-bit architecture. ICS included level sensitive scan design methods which allow built-in testability of the VLSI, high density CMOS gate arrays. For production of the integrated circuits, ICS uses VLSI Technology in California, and Toshiba in Japan. ICS implemented chips for five subsystems in the Series 10000: a RISC-based integer processor, a floating point register file, a memory manager, I/O manager, and graphics processor: these contain more than ten different gate arrays with densities of 30,000 plus gates, and are implemented in 1.5 micron, dual-metal CMOS technology. ICS was founded in 1984 by a group of senior managers from STC Computer Research Corp, and has received \$8 million in venture capital funding.

FALCO TAKES MICROPORT UNIX FOR SMALL SYSTEMS PUSH

Terminal manufacturers Falco Data Products Corporation of Sunnyvale, California has signed an OEM contract with Microport systems for Unix System V/AT and System V/386, which should result in a quarter million dollars worth of software being shipped to Falco over the next year. The deal is part of Falco's push into the small systems Unix marketplace with its 5000 Series supermicros, previewed at various trade shows recently. Falco is shipping three models; the 80286-based 5012, and the 80386-based 5016 and 5020 models (the numbers refer to the chip clock speeds). Prices range from \$8,000 to \$35,000, with the top-end 5020 configured with 4 Mb RAM, two RS232 serial ports, one parallel port, as well as four RS232/422 intelligent serial ports, 44 Mb hard disk, 60 Mb tape streamer, and 1.2 Mb floppy disk. Expansion options include an 80287 co-processor, 2 or 8 Mb RAM module, up to 600 Mb hard disk upgrade, and an additional hard disk of up to 600 Mb. Using intelligent serial I/O modules, up to 8 terminals can be connected to each port, according to Falco marketing vice president Don Staub, for a maximum of 128 users per system. Falco multi-function terminals such as the 5220E support this feature, and allow up to six "virtual terminal" sessions to be carried out concurrently within windows. Falco is currently setting up distribution channels for the 5000 Series in the US and Europe. In the UK they are available through Longs Computer Products Ltd of Chertsey, Surrey.

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NEW SD/BT COMPANY - SISL - TAKES OVER ON FOLIOS AND CHOTS

UK systems house Systems Designers has in a relatively short time built up a remarkable track record of implementing secure Unix office systems, and last year SD chairman Phil Swinstead said the intention was to spinoff the secure systems business into a separate company. In addition, he said SD would seek a financial partner; not only can the development of secure systems be expensive, but the resources required for the lengthy process of tendering for large Government or corporate secure systems can be considerable. The financial partner turned out to be British Telecom, which has already worked with SD on several projects, and the new company has been formally launched as Secure Information Systems Ltd. The company, which is 51% owned by BT, comprises 85 people including the team responsible for SD's most widely publicised contract in the area, the FOLIOS secure networked Xenix-based office automation system implemented for the Foreign Office. SISL will take over the role formerly handled by SD in supporting FOLIOS and also as subcontractor to BT on the huge, yet to be awarded CHOTS Ministry of Defence Unix OA project. Initially, the company is focussing on winning and supporting individual contracts; sales director Jim Fisher - back from acting as vice-president of sales for SD's US subsidiary - claims that reusable technology, such as secure X.400, developed for earlier projects such as FOLIOS will enable the company to offer low fixed price bids and still turn a profit. However he is also looking to the possibility of offering some of the tools as products in future.

PCB DESIGNER AND LOGIC DESIGNER ADDED TO COMPUTERVISION PROFESSIONAL

Computervision, of Bedford, Massachusetts, now a division of Prime Computer Inc, has announced two additions to its Professional Series systems. The Professional PCB Designer and Professional Logic Designer add to Computervision's new desktop product line, announced last month, with electronics design tools for schematic capture, simulation, printed circuit board design and documentation. Professional Series CADDStation systems feature prepackaged subsets of Computervision's popular CADDStation software running on the company's new CADDStation model 33 (Sun model 3/60). The Professional Logic Designer and Professional PCB Designer are available in both standalone and network configurations. The price for a network-ready, standalone Professional Logic Designer system with colour monitor is \$41,900. A similarly configured Professional PCB Designer costs \$46,900. Professional PCB Designer is a Unix-based system that includes tools for schematic capture, schematic rule checking, automatic and interactive device placement, automatic routing and documentation. The package supports dual-sided PCB design as well as design with blind and buried vias, both essential when using surface-mount components. Advanced multilayer routing algorithms and algorithms that provide for dynamic via and trace repositioning are included.

PHILIPS "ON THE WAY TO RISC" - 68030 BASED SYSTEM AT HANNOVER

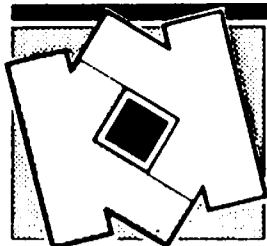
Philips Business Systems, which will be displaying its first 68030-based P9050 supermicro at the Hannover Fair this week, is looking towards RISC processors to provide a performance step-up in its next generation systems. Software Productivity Systems marketing manager John Williams said that the evaluation process was still continuing, but that he would be "very surprised" if the company did not choose Motorola's forthcoming 88000 RISC processor. Williams said that higher performance systems would be necessary to allow Unix to compete in installations involving computer aided software engineering tools such as its Maestro Integrated Project Support Environment (IPSE). Philips recently signed a deal to supply five Maestro systems to the UK's Automobile Association, linked to a central IBM mainframe and supporting 212 proprietary Philips workstations and PCs. Unix systems will eventually be integrated into this and similar projects by a communications sub-system, also demonstrated at Hannover, which allows access between Maestro and an X.400 network using Unix-based systems as a gateway. The intention, says Williams, is to gradually put more and more functionality into the Unix box, with a Unix version of Maestro as the long term aim.

FIRST HP SPECTRUM RISC IN CHINA GOES TO JIAOTONG UNIVERSITY

Jiaotong University in Shanghai has bought China's first Hewlett-Packard Spectrum RISC machine. The contract was signed earlier this year before the US lifted its ban on the sale of high-tech goods to China, but neither side would comment on whether the machine, a Model 950 with HP-UX which has not yet been delivered, had been covered by the ban. The contract was signed with China Hewlett-Packard, a joint venture between the manufacturer and three Chinese organisations. The University already uses an old HP3000 mini, and the new machine will be used for teaching and development of software for the HP3000. Because of the backlog of orders for the RISC machines, the university is unlikely to see the machine before the end of the year.

AT&T MONOPOLISES NORTH BORNEO UNIX MARKET

AT&T may not sell too many of its 3B machines in the US and Europe, but it has a near monopoly of the Unix market in North Borneo. The Port Authority in Kuching, on the island of Borneo, has awarded a \$400,000 contract to Automated Business Systems, Computer Systems Advisors and Olivetti for a turnkey system to handle the port operations. Software for the 3B15 will use Informix and be developed using CSA's POSE software engineering environment.



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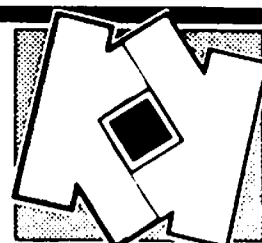
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The latest Dataquest Inc figures for sales of technical workstations in the US during 1987 give Sun Microsystems the lead with a 28.4% of the 95,000 units sold: second comes Apollo Computer with a 20.4% share, closely followed by DEC (20%), Hewlett Packard (19.6%), and IBM (5.3%), leaving everyone else with only 6.2% of the market.

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Sanyo is to relocate the manufacture of the Icon computer family from Japan to Utah, according to Electronics News, putting the blame on the yen/dollar exchange rate: Sanyo has a two-thirds stake in Icon.

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Torch Computers is to launch its Quad X workstation this week, the Cambridge, UK manufacturers' first 68020 based system, although the company has been selling board-level 68020 products since the end of last year.

- 0 -

Texas Instruments Inc reckons that although the Apple Macintosh-based microExplorer offers only about half the performance of the more company's Explorer II, it is nearly 25% faster - and \$10,000 cheaper - than the Symbolics 3650 workstation when running the Gabriel Benchmark: when running Allegro Lisp, it is also 300% faster than a Mac II without the Explorer co-processor.

- 0 -

The IBM Personal Publishing System always looked remarkably unconvincing because the software and interface boards were designed to be used only with the equally unconvincing 8086-based Personal System/2, which isn't a PS/2 at all except in name: IBM has now plugged the credibility gap by announcing an Adaptor Card to go into the PS/2 50, 60 and 80, and a new release of the Personal Page Printer Adaptor Program for the IBM 4216 laser Personal Pageprinter; in the UK, the pageprinter is £1,544, the Adaptor board £1,207, the Adaptor Program £619, Microsoft Windows £77 and Aldus Corp Pagemaker £606; you also need MS-DOS 3.3, £70, and the AT and XT/286 are now also supported, which means you should be able to put together a desk-top publishing system for about £6,200, assuming around £2,000 for an 80286 machine.

Wang Laboratories Inc has been saying it would be going big on workstations for over a year now, and its Wang Financial Information S Services Corp has picked Apollo Computer as its partner, signing a "multi-million dollar" pact for stations to deliver its Shark service.

- 0 -

Systems Designers Plc has won a £1.5m contract to provide a computer-based briefing system for civil aviation pilots at 12 UK airports and three Civil Aviation Authority centres: the database will use the Informix 4GL relational database management system and run on a configuration of five DEC Micro-VAX 3500 processors forming the central database, with a number of Olivetti M380T 80386 micros at the airport outstations; it is due to go into operation at the 15 centres for a three month trial in April of 1989.

- 0 -

The Nippon Apollo Japanese arm of the Chelmsford, Massachusetts firm has produced a Japanese version of its DSEE software development environment, which is due out in May: it is hoping to sell 100 copies to 30 of its workstation users, at around \$3,900 a time, in the first year of marketing DSEE in Japan.

- 0 -

Plexus Computers Inc, San Jose, seems a bit long in the tooth still to be raising venture capital cash rather than doing it as a public company, but at least the Unix systems builder is still very much around - and has an impressive enough tale to tell to attract a cool \$15m in new equity funding from current and new investors that brings the total raised by the company to \$36m: Plexus is now pursuing the dream of multimedia information processing with what it calls compound data processing systems, designed to enable users to manage multiple data types, including images and alphanumeric data, in a single relational database - the company says the new cash will enable it to "capitalise on the rapid growth of the compound data processing market and the early market acceptance of our new Extended Data Processing System."

IBM is holding a four-hour briefing on Unix in New York this week, at which it is expected to announce that it is abandoning its IX/370 mainframe version of the operating system, which runs under VM, in favour of a new native mainframe implementation of its AIX Unix, originally developed for the RT Personal Computer and now also announced for the PS/2 Model 80: AIX comes with an optional novices' user interface, and adds IBM-specific communications.

- 0 -

Gossip that DEC had decided that the VAX architecture was beginning to run out of steam and that it would have to move on to a new architecture over time was first reported last May, and it is getting more insistent: the Prism RISC project is seen as the foundation of the new architecture and on the software side, it is suggested that DEC is working on a new operating system for Prism code-named Emerald, that will include features of the Ultrix Unixlike as well as VMS, run VMS in a compatibility mode - rather better, one hopes, than the VAX ran PDP-11 code - and have a new native mode; the new family, expected to start to emerge around the turn of the decade, is expected to include 64- as well as 32-bit RISC processors; in May last year, January 1989 was seen as the target date for launch of the new family.

- 0 -

At first blush, such a strategy - which is said to include an answer to IBM's Systems Applications Architecture under the name Desktop Software Architecture - looks like a super-high-risk bet-your-company decision, but there are several factors that militate against that view: the first is that many of IBM's woes are the result of having clung on for far too long to a hopelessly antiquated and inflexible architecture, 370; the second is that DEC has done incomparably better since it wrote of its history and replaced the PDP-11 with the VAX as its core product; the third is that mastery of RISC technology has made efficient emulation of different environments much easier.

- 0 -

No word in the US or Europe of any resellers for the Apple Macintosh-based Texas Instruments microExplorer (is Unisys going to take the thing?) but in Japan, where the delivery version costs about \$23,000 and the development version \$38,000, C Itoh & Co and Century Research Corp will market and support it.

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YOUR SOFTWARE SOURCE

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AIX/370 LAUNCHED - AIX/SAA CLARIFIED - LOCUS RUMOUR SUBSTANTIATED

IBM last week duly unveiled the AIX/370 mainframe Unix, still hosted by the VM operating system but introducing support for the 3090 range, extended addressing mode, vector processors, and the results of its increased involvement with Locus Computing Corp - and the news that customers will have to wait until March 1989 - April in the UK - to get it. The company also provided some clarification on the AIX/Systems Applications Architecture relationship - the message is that Unix standards take precedence over SAA - and formalised its intentions for compatibility across AIX implementations as the AIX Family Definition. Based on System V.2 with Berkeley 4.3 compatibility, AIX/370 is supported on everything from low end 9370s to 3090 mainframes. IBM put substance to the long-running industry rumour that it was due to launch a product based on the IBM-funded Locus distributed operating system research development at the University of California at Los Angeles. The developers went on to found Locus Computing Corp, and IBM announced the software as Transparent Computing Facility. Although the software has been licenced to universities, IBM is expected to be the only commercial licensee. The product allows data and processes to be distributed among a cluster of up to 31 nodes - PS/2s or mainframes running AIX - linked by Ethernet, Token Ring, or channel to channel adaptor. TCF includes a hierarchical distributed file system with administration facilities - multiple copies of files can be held on different machines and updated by the system, the cluster can be dynamically reconfigured to recognise nodes being taken offline or introduced to the system. In addition, processes can be explicitly or implicitly routed to any node on the system - so that compute-intensive tasks could be run on a mainframe with vector processor. IBM also promised support for the Fortran Compiler/Library and Engineering/Scientific Subroutine library on AIX/370 but gave no dates. Among the mass of other facilities announced were Locus-developed features increasing integration with DOS systems: a version of the Locus DOS Merge DOS-under-Unix, and Locus XSight X-windows products that allow DOS systems to act as X terminals to Unix systems. In addition, Locus is particularly pleased that its PC Interface will be bundled with every AIX system. Sun's Network File System is also supported across the AIX family. The AIX Family definition includes POSIX conformance, TCP/IP, X Windows, NFS, AIX C and VS Fortran. AIX/370 will be offered on a one-time charge ranging from \$27,000 on Group 10 models -low end 9370s to \$144,000 on 3090s; alternatively there is a \$3,000 a month rental charge.

KODAK TO ACQUIRE INTERACTIVE SYSTEMS

Unix systems software specialist Interactive Systems has agreed in principle to be acquired by Eastman Kodak Co on undisclosed terms. The agreement, due to be finalised by the end of May, will see Santa Monica-based Interactive operating under present management as a subsidiary of Kodak's new software systems division, part of the company's commercial and information systems group. According to Interactive, Kodak was first looking to invest and subsequently decided to buy the company; Interactive maintains that it was growing rapidly and it now has some 170 employees. Interactive provided IBM with its first Unix product and IBM still offers some of its Unix utilities, although it later switched to reliance on Locus Computing Corp for other features. Interactive's products include the 386/ix port for the 80386.

£30m+ DEAL WINNING UNIGEM SPARKS COPYRIGHT BATTLE IN IRELAND

As the world watches the legal battle waged by Apple Computer Inc against Hewlett-Packard Co and Microsoft Corp another copyright case has emerged in Ireland over the Unigem accounting package - which recently won a claimed £30m plus in OEM deals from French company Linkor and NEC respectively.

UK software distributors, Precision Software of Worcester Park, Surrey, is proceeding against Dublin-based Software Laboratories for breach of copyright and marketing rights. Precision Software claims that during the early 80s it subcontracted Software Labs to do development work on a product that it believes has now evolved as the VAR-oriented accounting package Unigem.

The nature of the deal, according to Precision Software, was that Software Labs took over the maintenance of existing test sites and were granted marketing rights within Ireland: elsewhere Precision retained all marketing rights to the existing product and any enhancements. Precision Software says that it heard nothing from Software Labs and assumed that the project had been dropped until an article in The Times highlighted Software Labs' massive £17m order from NEC in Australia (UX No 146).

At the end of last year Precision obtained an order requiring Software Labs to do no further work on the product and to supply it with the Unigem source code to assess whether the product infringed copyright. Precision has still to receive the code. Software Labs says that it is fiercely contesting the suit, being tried in the Irish courts, admitting only that it had a business relationship with Precision a number of years ago.

DESPITE INTERNATIONALISATION ATTEMPTS GERMANY REMAINS HANNOVER'S PRIMARY CONCERN

The massive, multi-level, multi-site stands of Nixdorf Computer AG and Siemens AG would have dominated any other computer trade show but CeBIT '88 in Hannover, where Hall 1 alone appears to be considerably larger than the whole of Birmingham's NEC, without considering the twelve additional halls spread across the vast exhibition grounds. But the 400,000 or so visitors expected to pass through the gates before the final day this Wednesday will find an event that is still an odd mix between parochial and international interests, with the overriding impression that, however hard it tries, the Hannover Fair is primarily concerned with the German marketplace...

NIXDORF ADDS TO PC, MICRO AND TELECOMS RANGES

Nixdorf Computer AG used the Hannover Fair to introduce a number of new systems to its range of hardware, including the 8810 PC range, Targon Unix systems, and the Quattro family. The 8810/75 Unix System V 80386-based PC has been given the Targon tag, but Nixdorf is emphasising the integration of PCs into its larger systems via networking (it also demonstrated OS/2), and the true low-end of the multi-user Targon Series is the newly introduced Targon /31 Model 5, a four user, 68030-based micro that is the first of a range of machines using the new Motorola chip. The single-board cpu implementation reduces some of the performance advantages that might be expected from the upgraded chip, but will achieve greatly reduced production costs, said the company. Due out in August, the price for a standard configuration is expected to be around DM22,000. At the top-end of the Targon range, Nixdorf announced the /35 Model 50, based on the 3 cpu Pyramid Series 9000. The company also unveiled its Quattro com/bi family - a combination of the existing 8870 multi-processors with the ISDN System 8818, aimed at businesses looking to set up in-house networks. There are three models, ranging from the com/bi-30, with 2 cpus and support for 18 workstations, to the four (parallel) cpus for 30 workstations, 15 printers, and a secondary memory capacity of 1.5 Gbytes. Telecom services such as telephones, data terminals, videotex, telefax and teletex are also supported, and the system can function as a full-scale PABX. Prices and delivery dates were not available.

PICTURE PROCESSING FROM DANISH STANTEXT

Amongst those looking out for international dealerships and partners at CeBIT was StanText A/S of Risikov, near Aarhus in Denmark. Development of the company's Skyline computer was funded by the Danish Government and venture capital at the beginning of 1986, and the result was launched internationally at the Imprinta exhibition in Dusseldorf, West Germany last month. The Skyline was designed with the graphics art industry in mind, and is based on the Fairchild/Intergraph Clipper processor and an I/O subsystem based on an Intel 80286, with Ethernet co-processor and VME interface. It also provides a sophisticated graphics controller with 20 MIPS bit-slice processor, wide data paths, and an extended frame store. Up to eight controllers can be cascaded together. Running Unix V.3, and MS-DOS on the I/O processor, the Skyline uses an Apple Macintosh 2 as an intelligent terminal. StanText claims that the machine, in conjunction with Quark Inc's Xpress software, will make desktop publishing attractive to the professional graphics art industry, by speeding up Postscript conversion of a finished page (text and graphics) to seconds, and allowing the use of fast CRT typesetters. Other applications include medical imaging, solid modelling, and seismic processing.

AMBITIOUS NOKIA PREDICTS EUROPEAN DOMINANCE BY 1992

Not everyone appears to agree with Nixdorf on the importance of integration between data processing and telecommunications activities - Claes Nordwall, Vice President of Nokia Data AB of Stockholm, speaking at Hannover, said that although in the late 1970s people thought that the two would merge, "the increasingly standardised approach to integration now meant that it was not a must to work in both fields". The company was formed earlier this year (CI No 851) from the sale of LM Ericsson AB's ailing Data Systems Division to Finland's largest privately held company, Nokia Oy, and its merge with Nokia's Data Systems Division has resulted in the seventh largest European computer company, with 8,000 employees and net sales of around SEK 7,000 million (Swedish kronor - about \$1.25 billion). But despite the fact that Ericsson's major profits came from its (now separated) telecommunications business, Nordwall is predicting rapid growth for Nokia Data over the next four years, saying that the company will be the largest in Europe by 1992, and that the proportion of Scandinavian business, currently accounting for two thirds of the overall operation, will by then be reduced to one third. "1988 is a platform year, and we will begin consolidating business in Germany, and start merging activities." Next on the list is France, Spain and the UK, but Nokia will not look at US business "until we have achieved dominance in Europe". Former Nokia business largely concentrated on workstations and point of sale terminals, and the Ericsson range also includes small business systems and minicomputers. The aim is to scale up from terminals to PC-based workstations, backed up by minicomputers and technical workstations, bought in from other manufacturers (there is an existing agreement with Sun Microsystems). These would support industry standards such as Unix, said Nordwall, who confirmed that Ericsson's X/Open membership had been transferred to Nokia. Current product lines will be continued "until the end of their economic life". Nokia is expecting 1988 sales to grow by about 5% over 1987 figures. The merger, which results in 80% of Nokia Data's share capital held by OY Nokia AB and 20% by LM Ericsson, becomes legally effective on March 31st.

X/OPEN GAINS USER SUPPORT FROM GERMANY

The X/Open Ltd standards consortium now has the support of two major European users, X/Open President Geoff Morris announced at Hannover on Thursday. They are Daimler Benz AG and the insurance company Gerling Konzern AG, who join X/Open's User Advisory Council. Both companies said they would be supporting X/Open in their long term computing strategies: "we are looking at a standards approach to maintain our competitive edge", said Gerling Konzern data processing manager Dieter Weber. Other users on the advisory council now include British Airways, Statskontoret in Sweden, and the US Treasury Department.

HEWLETT PACKARD UNVEILS "PHOTOREALISTIC" WORKSTATION

Hewlett Packard has launched its most powerful workstation yet, the HP 9000 Model 835, with a faster graphics sub-system, TurboSRX. Rated at 14 MIPS and 2.2 double precision MFLOPS, HP claims the Model 350 is twice as powerful as its year old Model 825, and will position HP as "the leader, or up amongst the leaders" in super workstation performance. TurboSRX, which is also available with HP's top-end Motorola-based workstation, the Model 350, boosts performance for rendering photorealistic images and 3D interactive graphics by between three and ten times that of the SRX subsystem, which will continue to be offered on lower range models. This has been achieved by increased VLSI, and the addition of several new features in microcode or hardware, including support for hardware assisted radiosity and ray tracing for photorealism. HP also offers 2D capabilities with the CHX subsystem and accelerator on the 835. Price is about £60,000 in the UK. A field upgrade kit is available to Model 825 users. HP says it plans to launch eleven new products, technical and commercial, at an international conference in New York at the beginning of April.

CROSFIELD EYES GRAPHICS WORKSTATION/LAN MARKET

The UK electronic pre-press specialists Crosfield Electronics launched its latest products to the computer industry earlier this month, rather than concentrating on its more traditional printing and graphics art customers. Crosfield, which has a turnover of £194 million and claims to be the world's largest electronic pre-press supplier, says that it saw a wider potential in its latest products, the Galaxy 9000 workstation range and high performance Galan (graphics art LAN) optical networking system. The Motorola 68020-based Galaxy allows the large volumes of data involved in the manipulation of high resolution raster processed images to be handled, including film, video, animation, remote sensing and medical diagnostic images and graphics. The workstation has a dual ported memory mapped display for real time pan, zoom and scrolling of images over the entire main memory, and is supported by a high speed (44 Mb/sec) bus and in-house designed graphics accelerator capable of drawing up to 80 million pixels per second. Disc memory on the entry level 9110 model can be expanded to up to 1.5 Gb, and monitor options include an ultra-high resolution 4096 x 3300 pixel display. The workstations run Unix System V, and range in price from £19,400 to £32,000. They are fully compatible with Ethernet and the new Galan token-ring networks, which are fibre-optic based, and claimed to be the fastest high performance local area network available. It can process digital data at a rate of 100M-bits-per-second with 80% efficiency - more than 16 times faster than Ethernet. The company hopes that OEM or system suppliers of artificial intelligence terminals, CAD/CAM workstations, or video imaging equipment will be interested in the networks. Both products will be marketed by Crosfield through its existing international operation: its US headquarters is situated in New Jersey. Full production, at the UK's Crawley, West Sussex factory, will begin by the end of the year.

APPLE WINDOWS SUIT MENACES PRESENTATION MANAGER

How far can software developers working on a user interface go towards creating a WIMP (window/icon/mouse/pointer) display without infringing the copyright of the Apple Macintosh? For years the issue has remained largely unresolved, though most companies have now learnt to restrain themselves from describing products as having a "Mac-like interface", through fear of incurring Apple's wrath. Last week the issue came out into the open, when Apple launched lawsuits against Hewlett Packard Co and Microsoft Corp, in a move that could pose a threat for the predicted rapid take-off of IBM and Microsoft's Presentation Manager users interface for OS/2 - a product that was beginning to be widely touted as a suitable model for the long sought-for Unix interface standard, with the X/Open Group said to be carrying out evaluation. The Apple suit detailed HP's NewWave and Microsoft's Windows release 2.03 as infringements of the Apple copyright: Presentation Manager was not named, but since the product is not yet on the market, it is too early for Apple to complain of damage to its interests. Apple believes that Hewlett Packard received a licence from Microsoft for the use of Windows 2.03 in NewWave, and its suit contends that the screen displays generated by Windows are themselves illegal copies of the Macintosh audio visual works and exceed the original limited licensing rights granted to Microsoft by Apple.

"clearly unfortunate"

In the Unix world, the move looks set to delay the announcement of the user interface component of the Sun/AT&T ABI development (UX No 162), which was expected to be revealed shortly. Sun spokesman Bill Woo called the move "clearly unfortunate for the industry; it will be difficult to come up with an interface that doesn't infringe the copyright". He said that AT&T/Sun were continuing to work and talk to "a lot of parties" about the interface, and hinted that further announcements were unlikely before the situation was resolved "although something should shake out within the next three months". AT&T said it would not comment on future announcements, though a separate AT&T source claimed that an interface announcement had originally been scheduled for the next few weeks. Apple appears unlikely to agree to a monetary settlement, and the timing of the announcement seems calculated to inflict the maximum damage on the commercial success of the Presentation Manager, as software developers evaluate it. Hewlett Packard has said that it will oppose the Apple suit "vigorously", and says that NewWave "goes well beyond what's available today from other vendors". Meanwhile, Microsoft Corp, ironically number one in the market for Macintosh software titles in the world, says it is convinced that Apple's companion suit over Windows 2.03 has no merit, and denies the alleged copyright infringement. The whole issue, of course, is clouded by the fact that most of the ideas in the Mac user interface were pioneered at Xerox Corp's Palo Alto Research Centre.

SYBASE CELEBRATES NEW VERSION; NEW SUBSIDIARY; NEW DISTRIBUTOR

The already cheeky Sybase has become even more sure of itself in the welcome shadow of the Microsoft/Ashton-Tate/Sybase accord, announcing a new version of its distributed transaction processing rdbms; an Australian subsidiary; the new Belgium distributor signing a major Belgian bank; a new French distributor, called Infi, pending a full French launch within 12 months and the usual spattering of verbal aggression against the "other" relational database vendors. John Stevens, UK managing director for Sybase said: "Our systems can support 30 users per megabyte of memory, simply because we isolate the client from the server mechanism and offer a multi-threaded server architecture. Our competitors can manage just 2 users per megabyte, 4 on a sunny day when you're not asking it to do much. And I know, I used to work for Relational Technology." In his more generous moments he adds: "Those competitive systems were built for ease of use, not for transaction processing. Throughput wasn't the issue then, ad hoc enquiry was. But now our competitors have the problem of increasing throughput, but remaining compatible with their old systems. We never had an existing system, so we never had that problem." That is pretty much the story that Sybase has been saying from day one, and trying to get itself benchmarked against the competition has been most forceful marketing tool. But Now Sybase has been able to add another marketing tool, courtesy Microsoft, and the firm is calling it scalability." Scalability simply means that when you need more power you automatically go up the scale to a more powerful machine, or you split the database across two machines and use two at once. It wasn't much worth introducing the idea until Sybase was running on a number of machines of differing power. The addition of the version for a 386 file server seems to Sybase the right time for introducing it. Sybase already runs on Sun workstations running Unix and DEC VAX machines under VMS. To move work to a different machine you need to move a whole table, so it helps if you aren't working with huge tables. The size of tables which typically will run on a 386 machine are probably optimum. But it is trickier to do this table movement than Sybase makes it sound, but the company insists that the software to do it is in the recently released Data-Toolset, and Sybase version 3, including disk mirroring, so that duplicate databases can be maintained and even offer a degree of fault tolerance. Stevens says that one customer (not in the UK) already has used Scalability to produce fault tolerance, and when one cpu goes down, a mirror disk of the tables on that machine comes live onto another cpu which is ready powered up and running Sybase for less critical work. The key to most systems though is response time. In many financial environments, for instance dealing systems, response time just must not degrade. The new version of the Sybase software can be made to scale up depending upon a built in response time limit. If twenty five users are logged to a 386 machine through a local area network, and it runs out of steam, this can be detected by measuring response times, and at a pre-arranged unacceptable response the tables can be switched onto a Sun 4 workstation, a VAX or shared across two OS/2 machines. The new target machine would have to be awake and have Sybase loaded, but then it could automatically switch SQL requests to those tables on to the new processor, and the user remains oblivious. Before we believe all the Sybase claims we'll have to hear from a customer that has kicked the tyres on this release.

INTERGRAPH GOES INTO PUBLISHING FOR US GOVERNMENT

Intergraph Corp is trying to push its way into lucrative US government contracts with a computer-integrated publishing system which, it claims, addresses the major publishing needs of government and industrial organizations. Intergraph President Jim Meadlock said the company's "Distributed Publishing System" reflects a long-term strategy to build an integrated system for publishing and information management, adding that initial modules of the Intergraph workstation-based software will be delivered next month. Meadlock said the database-oriented system distributes the publishing function within an organization's overall workflow. To do this extensive integration and data management are required. The integration occurs at three levels: integration within the publishing workflow, all of the Distributed Publishing System's software modules are based on a common data structure; integration of publishing with the engineering workflow, Intergraph claims its publishing system is compatible with Intergraph applications software - both Intergraph Unix-based and VAX-based workstations - it also has a scanning subsystem; integration of publishing with the corporate workflow. The Distributed Publishing System uses communication links to mainframes, workstations and personal computers and standard data structures to exchange text, vector graphics, raster graphics and database information. Meanwhile an Informix-based relational database management and tracking system manages documents and illustrations throughout their production cycles. Distributed publishing activities are coordinated across an Ethernet network. The first four modules of the Distributed Publishing (DP) System are: DP/Publisher - general-purpose composition and pagination software, available in April for \$2,000; DP/Paint: raster paint-and-draw software also available in April for \$800; DP/Presenter - software for preparing spreadsheet-driven charts, plus tools for graphics editing, available in July at a price of \$2,000; DP/Manager - software for the tracking and management of documents and illustrations and for production management, available third quarter at \$2,000 per workstation user, or \$15,000 to \$19,000 per host processor (depending upon host).

ALTOS MOVES INTO HONG KONG, CHINA

Altos, which already has an installed base of 400 Unix supermicros in Hong Kong and China, has bought up its former distributor in the colony to market the machines directly. The new venture, renamed Altos Computer Systems (Far East), was the marketing arm of its sales representative, Hi-Rel Computer Systems. According to Ken Boyce, Altos regional sales manager for Asia and Africa, the new venture will initially concentrate on Hong Kong and China, but will eventually expand its marketing and technical support throughout South-East Asia. Altos already has a major installation in the Agricultural Bank of China and plans to increase its penetration of the market. Altos has also negotiated a deal with an unnamed computer maker in Japan to market its machines there under the Japanese company's label.

MOTOROLA COMPUTER ADDS 68030 SYSTEM 8000 MODELS

Motorola Computer Systems last week added four 25Mhz and 20Mhz 68030-based models to its System 8000 line of integrated workgroup Unix systems. The Models 310 and 610 are based around the firm's new single board computers, and support 12 to 20 users. The Models 650 and 850 extend support to between 66 or 128 users, and more can be added by using an Ethernet local area network. The single board computers are the MVME147 Series intended not just for the company's own personal use but also for system developers producing machines that have I/O requirements. The MVME147 has a Dhrystone rating of 6,600 which is twice the performance of Motorola's existing processing engine. The 310 starts at \$10,000, out next month; the 610 at \$22,000 due in September; the 650, available in June at \$30,000 and the Model 850 in July at \$40,000.

ELXSI SHIPS TWO 6400 SYSTEMS TO KOREAN RESEARCHERS

Tata-Elxsi, the Indian-Singapore joint venture with the California minisupercomputer maker, has shipped two Elxsi 6400 Unix systems to South Korea. The first, valued at over \$500,000, went to the Korean Standards Research Institute to support its wide range of research activities. Rated at 10 mips, the 32 Mbyte system will be linked by Ethernet Apollo and Hewlett-Packard workstations and the institute's existing computers, and run Elxsi's version of AT&T's System V. It will be used in the analysis and preparation of experimental data, to set up a database for standards, to control precision measurements and to maintain a national standards database. The System will also be connected to the Institute's other 12 laboratories throughout Korea which were set up in 1975 to promote the economic development of South Korea by setting up and maintaining a system of national standards. The second Elxsi machine was shipped to the Kook Jae University at its new campus at Chung Nung, North-East of Seoul. It will support computing throughout the campus, and it is intended to expand system as the University grows. Kook Jae's first major project is to develop a large office automation laboratory on the Elxsi 6400 system. ~~The US India Singapore joint venture was~~ founded in 1981 and does its own development work to customise the hardware and software for its customers. It has sold over 15 of the supercomputers to users in India, Australia, China and Korea as well as Singapore. A Tata-Elxsi development team in Australia converted System V to run on the 6400 for its US parent company.

C++ ON ITS WAY TO SUCCEEDING C

AT&T is reportedly rewriting parts of the Unix kernel in C++ and the merged Unix System V and Sun OS operating system being developed by both AT&T and Sun Microsystems at their joint centre in Menlo Park, California will be written in C++. AT&T has already used C++ to rewrite its Fortran compiler which as John Carolan of Glockenspiel Ltd, Dublin, Ireland, points out is a good instance of where C++ scores over C. This C successor shrinks large programs by a factor of ten and reduces dependencies. Carolan also points out that C++ with its strong type checking facilities is ideal for embedded systems and could compete with Ada as the chosen language for defence-type systems even though defence departments specifying Ada would never do a complete U-turn concerning the language but may relax the rules. Previously conceived ideas that object oriented languages would not catch on because of the difference in programming techniques to conventional languages, predominantly emanating from programmers themselves, should now be quelled with around 6,000 users of C++ and the ability of existing C programmers to be productive in C++ using their knowledge of C without immediately adopting all the nuances of C++.

APPLE TO FIX AUX FOR MAC II

Apple Computer promises to fix one of the key limitations of its initial implementation of AUX for the Mac II - the inability to have more than one windowing application running at once - with the introduction of a layer manager for the AUX version of the Mac Toolbox with Version 1.1 of the product due August/September this year. The company also says that following the unfortunate hiccup over European delivery of the product - it fell foul of US export regulations due to its inclusion of the DES encryption software - it has now completed replacement of the offending software with a non-DES algorithm.

INFORMIX AND SEQUENT IN STAFF SWAP

Informix Software Inc has formed a new strategic alliance with Sequent Computers encompassing joint marketing and product development efforts that is intended to enhance Informix's use of the Sequent parallel processing architecture and enable both companies to offer more advanced and comprehensive database solutions. Under this agreement, a full-time engineer from Sequent will work at Informix headquarters in Menlo Park as a liaison, providing input for Informix products that operate in parallel processing environments, and reporting back to Sequent to provide increased product support. The engineer will also assist with porting, tuning and optimizing Informix products for Sequent systems, and will teach Informix engineers these optimisation techniques. In addition, a technical consultant from Informix will work at the Sequent headquarters in Portland to assist with performance analysis, training and customer support.

EUROPEAN

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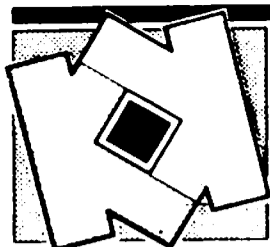
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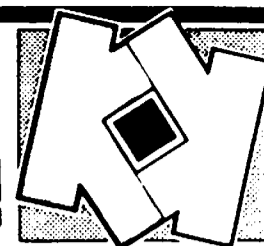


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DEC now claims in excess of 10,000 sales of its Ultrix systems; the next release of the operating system, expected later this year, will extend support for VAX 8000 machines, introduce POSIX compatibility, internationalisation features, and X Windows version 11.

- 0 -

According to Arity Corp Version 5 of the Arity Prolog language contains a C compiler that lets programmers write C and Pascal routines in Prolog programs, rather than using calls to C and Pascal: the Prolog compiler and interpreter are \$650, while the interpreter alone is \$295.

- 0 -

\$75m in incentives won Eau Claire, Wisconsin the fierce battle against Illinois to be home to Steve Chen's new Supercomputer Systems Inc: Illinois offered \$50m in incentives.

- 0 -

Troubled Symbolics Inc of Cambridge Massachusetts is to sublease over 200,000 square feet of its unused facilities - 120,000 square feet of offices in Concord, 97,000 square feet of manufacturing space in Chatsworth, California as part of a cost cutting exercise: it looks for the move to cut its costs by \$2.8m over the next 12 months, and by from \$8.5m to \$11.1m through 1991.

- 0 -

Interleaf Inc, also of Cambridge Massachusetts, has announced the formation of a wholly-owned West German subsidiary, Interleaf GmbH, to sell and support the full line of Interleaf products in the Federal Republic of Germany; Manfred Combuechen, former founder and managing director of West German subsidiaries for Symbolics and Xylogics, has been named general manager of the new Munich based company.

- 0 -

Tandy Corp and Zenith Electronics are interested in buying NBI Inc's computer division, according to Electronic News, which reports that a study on the company's operations commissioned by dissident holder Fisher Investments is going to the Securities & Exchange Commission.

Tektronix Inc reaffirmed its plans to use Motorola's 88000 RISC set in top-end models of its 68000 family Tek 4300 Series colour graphics workstations: Tek began talks on the 88000 with Motorola in late 1985, designing test tools for it.

- 0 -

Computer Place Services (CPS), the distributor of Arete Systems in Singapore, has developed a Financial Accounting Management System tailored to the local market: the system, with its own Built-in database, integrates general ledger, accounts payable and accounts receivable and handles multi-currency transactions - it will run under Xenix or MS-DOS on a PC XT/AT or under System V or VMS on an Arete 800 multiprocessor or other supermini and produces reports for the local small business computer incentive schemes and costs less than \$2,500 per user.

- 0 -

IBM Japan has announced the Japanese language version of OS/2 as OS/2 Basic version J1.0, and will initially supply it only to software developers and to large users like Mitsubishi Corp and Industrial Bank of Japan before making it generally available at year-end.

- 0 -

Kubota Computer Inc, investor in Ardent Computer, Sunnyvale, California, has begun marketing the Titan graphics mini-supercomputer and will be gearing up to production of 200 of the things a month at a new factory in Yamanashi, starting in April, and will market the Titan in Japan and the Far East, leaving Ardent to market it in the US and Europe; Kubota also has a 20% stake in MIPS Computer Systems Inc, also of Sunnyvale, California, and will begin selling models of the MIPS RISC machines with a maximum processing speed of 16 MIPS from this autumn; Kubota looks for the two alliances to bring it in a combined total of \$235m in sales over three years.

Aretty, Arect, Arrette, Arity, we've heard them all - and no doubt so have they, but there's no need to worry about how it should be pronounced any more: OEM Unix systems manufacturer Arete Systems Corp, San Jose, California, will henceforward be known as Arix Inc.

- 0 -

Hamilton Rentals Ltd, acquired last year by Atlantic Computer Group Plc, is diversifying into the workstation market via an agreement with Sun Microsystems Inc under which Hamilton will handle the full range of Sun workstations and server products throughout the UK: a range of finance options will be offered for the products, including an option rent plan which allows the customer exchange computer hardware at pre-determined intervals.

- 0 -

It's always fun to play such games on a slack day, and so California Technology Stock Letter has been doing its sums and reckons that if Sun Microsystems continues its present growth rate for the next 22 years, it will overtake IBM in annual turnover by the year 2010 - but then Sun is growing at 35% a year, a rate very unlikely to be maintained much longer.

- 0 -

Texas Instruments Inc has described an experimental 32-bit RISC microprocessor in Gallium Arsenide joint developed with Control Data Corp under a US Defense Advanced Research Projects contract that it says executes 100 MIPS, and that current development work could lead to a version that does 200 MIPS.

- 0 -

Steven Wallach, co-founder of Convex Computer Corp, clearly doesn't take the supercomputer business too seriously, judging by one of his utterances quoted by Electronic News: "Let's Ardently try to clarify the Multiflowed nature of the supercomputer market - Alliantces come and go as we focus with a Convex lens looking at Stellar events; of course we VAX and wane and if all else fails, let us Cray.

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AT&T TO DEVELOP MIPS ABI - MIPS LAUNCHES FASTER PROCESSORS AND SOFTWARE PORTING CONSORTIUM

RISC specialists MIPS Computer Systems of Sunnyvale, California, has followed similar announcements from Sun and Motorola with its own agreement with AT&T to develop an applications binary interface (ABI) for the MIPS RISC processor architecture. At the same time, the company claims to have doubled the performance of its existing MIPS R2000 family cpus with the unveiling of a new R3000 family, and increased its commitment to provide software with the formation and funding of an independent software company. AT&T's ABI for the MIPS architecture will allow third party software developers to produce portable applications software by complying with the ABI specification, providing systems manufacturers and customers with a base of binary compatible software across MIPS-based hardware: this currently includes machines from Ardent, Prime, RC Computer, Seiko, and Tandem Computer amongst others. The new R3000 cpu and R3010 floating point co-processor, developed in 1.2 micron CMOS technology, are available in 16 and 25 Mhz versions, and are claimed to deliver system-level sustained performance of up to 20 times that of a VAX 11/780. Like the R2000, the new cpu has an on-chip cache controller and memory management unit, and it supports up to 4 Gb direct memory addressing and 512 Kb cache memory. Pricing and availability are being announced independently by each of MIPS's three semiconductor partners, Integrated Device Technology, LSI Logic Corporation, and Performance Semiconductor - all versions certified as specification and pin compatible by MIPS itself - with Sunnyvale's Performance Semiconductor first off the mark, promising June delivery and a price of \$895 for quantities over 100 top-rated chips. The semiconductor partners, alongside MIPS customers and the company's own private investment group, are helping with the \$10 million funding of a software buying consortium, Synthesis Software Solutions. Synthesis will concentrate on porting software packages in high demand by MIPS customers, undertake special software projects, and provide documentation and support. Amongst the 20 suppliers already signed are Aplex, Austec, Frame Technology, Informix Software, Tigera and Verdix.

RECESSIONARY SIGNS AS ALTOS LOWERS EXPECTATIONS

The news that the consistently profitable Altos Computer Systems Inc has downgraded growth expectations for its third quarter figures to March 29th due to a slowdown in sales is likely to reinforce fears of a US computer recession. Archie Thomas, VP of Altos Northern Europe, admitted that the company had "not anticipated the US market remaining as soft". However, he said, European business had remained buoyant, with 60% growth in the UK, and 30% in the rest of Europe. "After the market crash there is still a 'let's wait and see' attitude amongst customers. It's hitting everyone in the minicomputer area, where we now consider ourselves to be". Thomas said that although he anticipated that the year as a whole would be "significantly up on last year", Altos would be taking action to hold or cut costs in the short term. But, he said: "there is no underlying recession as far as we are concerned".

POSIX EDGING CLOSER TO COMPLETION

After the numerous delays and obstacles that have held up approval of the IEEE POSIX standard, nobody is making any firm predictions of imminent agreement, but the 1003.1 standard looks a step nearer completion following the latest meeting of the IEEE committee in Washington, DC. A new draft document incorporating amendments in response to the numerous objections raised by the last full draft is expected to be circulated to committee members in the next couple of weeks, and further balloting will be restricted to objections to the amendments. To speed up publication of the standard, the IEEE standards board has already granted approval of the committee's work conditional on a satisfactory ballot result. A previous attempt to smooth over the objections - the production of 130 pages of printout detailing changes to the body of the standard - failed when representatives received the change details only a few days before the deadline for voting on whether to accept them.

Number 173
05 APR. 1988
US ARMY PUTS OUT RFP
FOR 20,000 POSIX MICROS

Putting a gleam in some 400 companies' eyes is the latest US defence contract from the US Army Small Computer Office for 20,000 multi-user 32-bit microcomputers supporting four to 16 users. The Request for Proposal, issued last month, specifies that the systems must have a multi-user operating system that conforms to the IEEE Posix P1003.1, has an ANSI C compiler, and is compliant with the AT&T SVID base system. The machines will be used to run office automation and administrative applications, for use by the Army, Navy and Defense Logistics Agency. The Request covers a five-year indefinite number supply contract with an additional three years of maintenance support and guarantees a minimum order of 40 systems or a value of \$2m. The Office hopes to be able to make an award in early 1989. The contract's official title is the Small Multi-user Computer Contract Number DAEA26-87R-0007.

ZENITH "PLANS MULTI-80386 XENIX V MACHINE"

Zenith Data Systems Inc has won such a good reputation - and so much business - in the US government market that it now wants to position itself to take a crack at the government Unix systems market. According to Microbytes Daily, the Glenview, Illinois company is preparing to announce a Unix supermicro that will support as many as 64 users. The machine is expected to be built around multiple 80386s and to run Xenix System V.386. It is expected to be packaged in the same housing as the company's existing Z-248, and will be bid for an major US Air Force and Navy multi-user systems contract. It is not certain that Zenith will offer the machine commercially as well, but it would seem perverse not to do so. An 80286 lap-top with 20Mb or 40Mb disk running MS-DOS, OS/2 and Unix, and fitted with a backlit, Supertwist display is also in the Zenith works for April 19 launch.

RISC CHIP "SLOWER THAN CISC" FOR COMMERCIAL APPLICATIONS

Although the whole area of representing the performance of a machine by a benchmark that results in a single rating of millions of instructions per second has long been discredited, the practice remains in widespread use due to the lack of any suitable alternative methods. To add to the confusion, there are some well known design flaws in the commonly used benchmarks: early versions of Dhrystone had a bug which improved performance by around 15%, and the program is said to favour the register math design of RISC chips; and Linpack can falsely double the true floating point performance when tested on unsuitable application code. test machine's cache memory, which results in a very fast I/O rating when none is in fact taking place. Now, work by independent performance analysts Neal Nelson & Associates, Chicago, Illinois, has thrown doubt on the comparison of RISC (reduced instruction set) and CISC (complex instruction set) computers by MIPS ratings, in a series of tests on the Motorola 68020-based Sun 3-260 workstation and the SPARC-based Sun 4-280.

According to Nelson, eight out of the eighteen tests carried out, after allowing for differences caused by different numbers of disk cache buffers, showed the older "4 MIPS" Sun 3 to be running 50% faster than the "10 MIPS" RISC-based model 4. Areas where this occurred included integer math, sequential reads and writes of 512 byte records, and random reads from both memory cache and disk. The SPARC's 32-bit integer math performance is measured as one third slower than on the Motorola 68020, something that Nelson attributes to the fact that the benchmark uses programming techniques to place the work fields in main memory. "Presumably, the SPARC would perform faster if both operands were in registers and the result was left in a register. In the test, all calculations operate on two main fields in main memory, and place the result back in main memory. It is significant that this memory to memory math is very common in commercial applications, and yet Sun has been aggressively promoting the SPARC chip to manufacturers who have a predominantly commercial customer base". Nelson offers no explanation for the fact that several basic disk I/O functions operate more slowly on the Sun 4, despite its larger disk and faster average access time. Areas where the SPARC is substantially faster than the 68020 include floating point performance, function calls, and string copy and compare, which measures character manipulation power. "Sun may believe that RISC and SPARC are superior for single user CAD/CAM and engineering applications", said Nelson, "but there is no evidence to suggest that it is superior for multi-user business applications". At the time of writing, no one from Sun was available for comment.

RISC MIPS and CISC MIPS

Because there has never been a precise definition of what an average "instruction" is, contends Nelson, the whole concept of MIPS ratings is untenable. For example, on a mainframe both a very simple instruction and a very complex instruction might be represented as a single instruction at machine language or assembler language level, but the simple instruction might execute ten times faster. So the machine could be described as both a 10 MIPS computer (if a program used only simple instructions) or a 1 MIP computer (if using all complex instructions). Before the advent of RISC, the presumption was that manufacturers would calculate the MIPS rating using a mix of instructions that were basically the same across different cpus. With RISC processors, however, register math functions will execute much faster than on a CISC machine, while other memory manipulation instructions do not exist at all, and need a sequence of RISC instructions. According to Nelson, applications which have used registers extensively could benefit from a switch to RISC, while applications which cannot use register math may actually slow down on a RISC machine.

AT&T UNIX PACIFIC OFFERS SUPPLEMENT FOR MULTINATIONAL LANGUAGES

AT&T Unix Pacific has announced its long-awaited Multinational Language Supplement that not only handles the multi-byte characters of Asian languages but also translates messages from Unix utilities and applications developed under the system into whatever language the user is using. It is also offering enhancements to its Japanese Application Environment (JAE) that includes messages in the four systems used to represent the Japanese language - Kanji, Katakana, Hiragana, and Romaji - and ports of two popular MS-DOS based Japanese language input and conversion systems to System V's Streams architecture. The first edition of JAE, introduced last year, allowed the System V user to input, output and process the four sets of characters. It supported terminals and printers, a dictionary, and a full-screen editor for Japanese characters. The different systems are only able to communicate with each other and printers, terminals and the operating system without confusion by using the Streams architecture. Streams works by totally ignoring the content of any message, file or command that is passed to it. It treats everything as a byte stream to be wrapped up, taken to where it wants to go by whatever bus or channel is available, unwrapped and delivered in exactly the form in which it was received, independent of the hardware architecture, application, communications media, and protocols. The two Japanese input systems were adapted and ported jointly by AT&T Unix Pacific and Vacs Corp and SCR Corp and are described as popular, powerful Katakana-Kanji conversion systems. The Multinational Language Supplement can simultaneously handle multi-byte languages such as Japanese, Chinese, and Korean, as well as European languages. Each language comes as a separate module, with separate support for terminals and printers. Under the MLS, Unix system commands process characters in the Extended Unix System Code Sets (EUC), a template allowing the system software to be independent of the user's native language. The systems commands work with EUC, allowing Unix to work with any language that has been mapped onto the EUC template structure. The messaging facility allows unix system commands and applications messages to be output in any language, with the language selected when the environment is defined at the beginning of a session. The system also automatically adjusts the date and time formats for each language, as well as decimal points and unit commas.

SIEMENS OVERHAULS UNIX RANGE - REPLACING PROCESSORS WITH NS32332

Siemens has overhauled its Unix range - which already has a claimed 20,000 units installed, most of which are in Germany - replacing the processors on new and existing models with National Semiconductor's 32332 CPU but maintaining binary compatibility with existing systems. New machines include a new low end offering, the MX300, top end MX500 machines doubling the number of supported users to 64, and the X20 graphics workstation. The X20, which replaces the Intel 80186-based X10, is set to go for £5000-£6000 including screen, 73Mb formatted capacity hard disk, floppy, operating system and the Collage window manager; much of the kernel software work came from Siemens' new software group in Woodley, Berkshire. Siemens will sell the box to its installed base of commercial systems rather than trying to take on Sun or Apollo. And eyeing a future where eventually, most users will have bit-mapped screens, Siemens has introduced the 97808 terminal, which runs Collage on an 80286 processor; offloading most of the graphics processing from a multi-user host is said to allow about 65% as many 97808s as dumb terminals to be supported. As for the multi-user systems, the existing low end MX2 - which with some 11,000 systems installed is Siemens' top seller, but is not sold in the UK - gets a field up upgrade from the 32016 to the 32332, can support 8Mb memory, twice that of the original machine, and six users plus four printers. Pricing on the new MX2 is from the equivalent of £10,000 upwards. New prospects are more likely to be offered the MX300, which is field-upgradeable from the six-user Model 10 to the twelve-user Model 20. Pricing is from £15,000 with 200Mb disk, floppy and four terminals. At the top of the range, Models 70 and 80 of the MX500, which is based on the technology from Sequent's Balance multiprocessors, replace the previous models 20,40 and 60. They support up to 64 screens and 32 printers or other devices, 12 32332 processors instead of the eight 32032s of previous models, and up to 4.1Gb disk storage. An entry 20-user four processor system is about £64,000 with 8Mb memory and 300Mb disk: a 60 user system would come in at about £170,000. The new machines ship by June and run Siemens' Sinix 5.2 version of Xenix, which includes support for the Difos version of Sun's NFS: other new software includes SNA LU6.2 and X.400.

TEXAS HAS MATHS CO-PROCESSOR FOR SPARC

Texas Instruments Inc has leaped aboard the bandwagon running for Sun Microsystems Sparc microprocessor with an undifferentiated floating point co-processor chip that is being aimed in the first instance at Sparc applications. The SN74ACT8847 was designed for use with any RISC or complex instruction set microprocessor such as the 80386 or 68030, but according to Electronic News, only Sun has so far had samples. General sampling of the part, which is in 1 micron Epic CMOS, is set for next month. The 8847 includes 64-bit floating point multiplier and 64-bit arithmetic-logic unit, and is claimed to do 30 MFLOPS in both single- and double- precision work. With three ports and 64-bit internal buses, a user can load two operands and take a result in a single 30nS clock cycle.

UK FIRM TIPPED TO PROVIDE X USER INTERFACE FOR NEXT INC WORKSTATION

A newly developed graphical user interface running over X Windows has been tipped as one of the components of Steve Jobs' forthcoming Next Inc. workstation. IXI Ltd of Cambridge in the UK has been developing the interface, named X-Desktop, over the last few months (UX No: 169), and plans to release it within the next two months. X-Desktop is a suite of application software that gives users the ability to manipulate commands and files via icons and mouse within an X.11 environment, in colour or monochrome. Users will be able to set up sequences of commands or any operation by clicking a mouse button onto fully configurable icons, and view accessible files via a "clearly understandable" visual display, including PC and VAX systems connected to the network via NFS. IXI is headed by Ray Anderson, who previously worked on the development of the proprietary OpenTop graphics interface for Torch Computers (also of Cambridge), a product which Steve Jobs was said to have been interested in back in 1986. Anderson would not confirm the connection with Next Inc., but said that IXI is currently talking to two or three major US prospects, all interested in taking the source code. X-Desktop is to be targeted at OEMs, and Anderson says he is "persuing X/Open" - the product supports the X/Open interface and Native Language Support. Latest reports suggest that some 10 prototypes of the scholar's workstation from Next have been shipped to developers, with more on the way, according to the Newsbyres newswire. As reported, the workstations, assembled by hand at the firm's Fremont, California plant, are 68030-based, run Unix and Adobe Systems' Display PostScript for screen graphics, as well as a digital audio chip for sound capabilities. A May launch is expected.

TADPOLE BACKS MOTOROLA 88000 RISC

Tadpole Technology plc will be taking Motorola's formal announcement date for the chip manufacturer's 88000 RISC, the 18th April, to announce a hardware and software development environment for the processor. It will be using the 88000 to provide a single board computer for VMEbus or Multibus II with an optimising C Compiler from Green Hills Software Inc. On the 18th Tadpole also promises to unveil plans for two other 88000 projects.

ITL FORMS OEM DIVISION FOR FAULT-TOLERANT UNIX LINE

ITL Information Technology Plc has long had an OEM contract with ICL for minicomputers for use as communications processors, but has not otherwise been much of a player in the OEM market. The introduction of its new fault-tolerant Momentum 21090 range of 68020 Unix machines that use software from Sequoia Systems has changed all that, and the Hemel Hempstead company has now set up an OEM division to sell the new machines through major systems houses and value-added resellers. Peter Christou has been tapped from Stratus Computer to head the new unit. The company's pitch is that £1m buys a Tandem machine doing 26 TPI transactions a second, a Stratus doing 50, or an ITL doing 84.

NBI AGREEMENT TO SELL TWO OFFICE PRODUCTS UNITS

Embattled NBI Inc, Boulder, Colorado has a letter of intent to sell the Colorado and Hawaii arms of its Office Products Division to Jirka Ryssavy, a private investor with interests that include a Colorado-based office products company, for about \$10m in aggregate. Separately, the company introduced the NBI 2300, a 16MHz 80386-based AT-alike with NBI's Multinet designed into the motherboard. It is available in diskless workstation versions for use with the OASys 64/66 Series office servers. Standard are 2Mb memory on a motherboard with room for 16Mb, one parallel and two serial ports, two slots, Multinet and VGA monitor. There are diskless, 3.5" floppy and 40Mb hard disk versions, and the 2300 is out now at \$3,995 diskless, \$4,290 with the floppy and \$4,990 with 40Mb drive.

DILLON OF DUBLIN LANDS £500,000 IN NEW CASH FOR EXPANSION FROM AUSTRIAN BANK

Dillon International Ltd, the English Maidenhead, Berkshire subsidiary of Dublin, Ireland-based multicurrency and treasury management software developer Dillon Ltd has raised £500,000 by the sale of an undisclosed equity stake to the Austrian bank, Creditanstalt-Bankverein. The UK venture capital groups Investors in Industry - otherwise own as 3i - and Baronsmead already have major holdings in the company, which intends to use the new money for product development at its Dublin research centre. Dillon International is currently negotiating with a US distributor in a move to improve its presence in that market. In the UK dealers and systems houses are being offered joint marketing arrangements under which they can expect a commission of 15% of the system cost for purchases by customers they introduce to Dillon. The company claims that it has a sustainable growth rate of about 60% with over 50% of its revenue being generated outside the UK and Ireland - sales are particularly strong among multi-nationals operating in the Gulf and in Scandinavia. Dillon Ltd was established in 1983 and is aiming for a stock market debut within the next three years. Last year turnover reached £750,000 and the company claims to have made a profit. Dillon Ltd is doubling its staff to 20 in Dublin - it has 15 at its Maidenhead office. Its software products - including the Interlink and InterAct Report Writer unveiled this week as utilities for the Dillon Lyric accounting system - run on MS-DOS micros and Xenix-based machines. DEC VAX and mainframe-based versions are in the plan.

AES DATA EUROPE IS REACTIVATED AS XIOS WITH NEW

INTEGRATED UNIX OFFICE SOFTWARE

Amidst stereo thunderclaps and a fluorescent slogan - "the shape of things to come" - Xios Systems Corp Europe was launched in London on Friday. The new company has been created by merging Ottawa-based Kinburn Technology Corp's office information systems subsidiary Xios Systems Corp, with word processing systems specialist AES Data Inc, acquired by Kinburn for \$16m last September. It will use now-defunct AES Data's group of European subsidiaries and distributors to market its Unix-based office information management systems software product, Renaissance, developed by SHL Systemhouse Inc, another Kinburn Group subsidiary. Renaissance, so the company claims, can be used by customers as a powerful set of tools to run word processing, data processing or personal computing applications, or to integrate existing proprietary, generic or manual office systems to provide cost-effective office systems. Xios looks for 50% of its business from the Europe unit based in Hammersmith, London.

RAPIDLY DIVERSIFYING MINERVA PLANS SIX NEW

BUSINESSES WITHIN TWO YEARS

Unix-based applications software and systems supplier Minerva Plc has launched a new company to offer consultancy services and development and applications products. The new company, Minerva Open Systems Ltd becomes the fourth company in the Minerva group, established 1974. Other companies in the group are Minerva Industrial Systems, which sells Cobol and Basic-based applications to manufacturers and distributors; Minerva Recruitment Services, a computer industry recruitment agency; and Minerva Computer Systems, a vertical market systems supplier which specialises in membership list maintenance systems for clubs and charities. It has response desks in Luton and Cheltenham supporting its 250 customers in the south-east of England. The London-based group, with a total of 60 staff, says that it recorded a combined turnover of over £3m with £150,000 profit for the financial year ended May 1987 and is looking for 36% growth in the financial year drawing to a close. Minerva Computer Systems and the Industrial Systems arm accounted for a third of total turnover each while the Recruitment and Computer Systems operations combined contributed another third. The company is on the look-out for acquisitions - perhaps vertical market players offering turnkey solutions which are either viable businesses in their own right or would become so as part of one of the group's existing subsidiaries. The creation of two more companies - to be based in the City of London - is in the Minerva expansion plan, and a total of six new ventures in the pipeline should be operational within the next two years. And expansion is almost entirely funded from within: Minerva is owned by its two working directors and its staff, and the directors have 90% of the equity. It was founded in 1974 as a £100 company and now has paid up share capital of £100,000.

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MOTOROLA TO LICENSE TOUCH OSI SOFTWARE FOR SERIES 8000

Motorola Computer Systems Inc has signed a joint development agreement with Scotts Valley, California-based Touch Communications Inc which will result in a Unix-based version of its Open Systems Interconnection networking software by the end of the year. The software will be licensed to Motorola which will sell it on its Series 8000 range. Touch expects the port to be available by the end of the second quarter or the beginning of the third. Other Unix ports are also planned: the software currently runs on MS-DOS systems, VAX/VMS hardware and the Apple Mac.

GRAFPOINT DOES TEKTRONIX TERMINAL EMULATION FOR UNIX, MACS

Tektronix terminal emulation specialists Grafpoint, Anaheim, California is turning to new pastures with the development of products for Unix workstations and Apple Macs. Grafpoint's TGRAF product for workstations will contain both 4107 and 4115/4125 Tektronix terminal emulation capabilities and is scheduled to ship in the third quarter 1988. Grafpoint, which previously dealt only with PCs, expects to make a killing in this market because of the move away from terminal-based systems to workstations and the customers' need to maintain compatibility with terminal-based systems during the move. Charles Lingel, Grafpoint Chief Executive Officer, claims that the products allow workstation owners machine to access older, existing host software packages as well as new software packages that contain Tektronix terminal drivers. TGRAF for Unix based workstations is priced at \$2,495. TGRAF-07 and TGRAF-15LR are the Apple Mac products. The TGRAF-07, 4107 Tektronix emulation software for the Macintosh will support Macintosh's color graphics standard and allows for the display of up to 16 colors at any given time with a display resolution of 640 X 480. Grafpoint's TGRAF-15, 4115 Tektronix emulation software has the same resolution as the TGRAF-07 product but can display up to 256 colors simultaneously. The company chose to do Tektronix terminal emulation software for the Mac because in its opinion the Mac is accepted as an alternative to the PC in the engineering and scientific community: it also believes that the recent marketing agreement between DEC and Apple there will be a greater number of Macintosh computers in the future at DEC sites. Price for TGRAF-07 (Tektronix 4107 emulation) on the Macintosh is \$995, and the price for Grafpoint's TGRAF-15LR (Tektronix 4115 emulation) on the Macintosh is \$1,495.

NCR TURNS BACK ON HAMILTON GROUP, OPENS TALKS WITH AT&T ON UNIX DEVELOPMENT

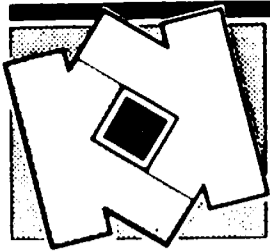
Following the example of its biggest OEM customer for Unix machines, Unisys Corp, NCR Corp has reportedly opened talks with AT&T Co about collaborating in the further development of Unix for commercial applications. The news seems to put NCR into the AT&T-Sun camp alongside the likes of Unisys and Xerox Corp: NCR says it has had the same kind of discussions as Unisys with AT&T and points out that it has already developed transaction processing extensions to Unix, one of the key areas marked out by the AT&T- Unisys agreement. But on the hardware side, NCR has not yet decided to go with the Sun Microsystems Sparc microprocessor for its future Tower top-end, saying that it is still evaluating the Sparc and the Motorola 88000 RISC. NCR was originally one of the dissident Hamilton group opposed to AT&T's Sun tie, but "Frankly, they got a little more aggressive with AT&T than we ever wanted to", chairman Charles Exley told Electronic News.

FLOATING POINT ANSWERS CONVEX, ALLIANT WITH FIVE MODELS

Floating Point Systems Inc has added five models to its M64 line of parallel processing minisupercomputers, saying that they are up to 70% faster than those just announced by the likes of Convex Computer. In the most powerful configuration, using 24 parallel disk drives and 31 parallel processors, the new FPS M64/145 integrated compute servers, incorporating Floating Point's Max Matrix Algebra Accelerator, are claimed to do up to 341 MFLOPS. Peak performance of the new M64/145 models, the C, D, E, F and G, ranges from 33 MFLOPS to 341 MFLOPS, and claimed Argonne National Laboratory Linpack benchmark performance ranges from 24 to 101. Apart from Max, the key contribution to performance is said to be the Fast Matrix Solution Library, which "orchestrates" all elements of the machine, including the 24 parallel disks and 31 CPUs. The machines are out now at introductory prices until June 15 that range between \$295,000 and \$1.75m.

BECHTEL DOES SOFTWARE FOR CLIPPER: SIGNS WITH SILICON GRAPHICS

At the recent National Computer Graphics Association conference, Bechtel Software Inc introduced 3DMX, a three-dimensional plant and facility design software package that runs in a standalone mode on Intergraph Clipper-based workstations with MicroStation software. In addition, the company introduced Shade, a color shading package that runs on personal computers, for three-dimensional computer models. 3DMX prices start at \$5,000 and Shade is priced at \$2,500, Bechtel separately announced a VAR agreement with Silicon Graphics Inc, under the terms of the agreement, Bechtel will offer Silicon Graphics' IRIS 3100 and 4D series of workstations with Walkthru, Bechtel's three-dimensional animation and visualization system: Walkthru allows users to "walk through" realistic computer models of large industrial plants, buildings, ships, power plants and other facilities.

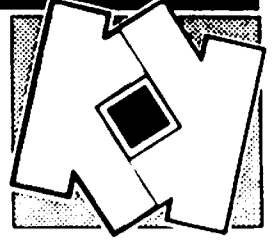


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Sun Microsystems Inc, Mountain View, California is now expected to launch its long-awaited Intel 80386-based workstation next week, April 6.

- 0 -

"We were impressed with their self-confidence and the common sense of their design," Fujitsu Microelectronics Inc vice-president Kenichi Katashiba told the Wall Street Journal apropos his company's dealings with Sun Microsystems Inc over the Sparc microprocessor, noting that Fujitsu decided to manufacture the part on the strength of one impromptu presentation by Sun's Bill Joy in Tokyo: "I only wish I had negotiated harder to get some stock warrants in return for making the Sparc"; noting that Fujitsu was not aware when it agreed to make the part that three other companies would also be making versions he adds "They move fast and never look back, and drop companies that can't keep up..." - Sun is "...an intriguing and challenging partner, but it requires us to reconfirm our partnership every time we meet".

- 0 -

Toshiba Corp has announced the Sun Microsystems Sparc-based Sun-4 as the AS4100 series in three models: the AS4100M is \$51,709; the AS4100FC is \$44,250; and the AS4100C is \$60,000; deliveries start in June, and Toshiba is looking to sell 600 of them a month.

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Apropos its suit over Windows 2.03, Apple Computer inc says that it told Microsoft Corp as long ago as mid1986 that the nonaggression pact between the two companies did not go beyond the Windows 1.0 release.

- 0 -

Intel Malaysia has paid \$7.2m for a plant in the Malaysian Free Trade Zone, and another \$8m to fit it out with production and test equipment for assembly, testing and shipment of 80386 microprocessors there: the plant is manned entirely by Malaysians, and the new initiative takes the total investment of the Santa Clara chipmaker in Malaysia to \$120m.

In what seems to be the first recorded case of a user converting from Unix to OS/2, TouchStone Software Corp, Seal Beach, California reports that it has a companywide agreement from Ford Motor Co to supply emulation software that supports both Fortune Systems terminals and IBM PS/2 systems as part of a two to three year network change over at Ford: under the pact, TouchStone is providing unlimited use rights to an enhanced version of its PCworks software to enable Ford to maintain the full value of its Fortune 32:16 Unix systems and terminals while gradually replacing them with IBM PS/2 workstations.

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Western Digital Corp of Irvine, California has announced the availability of a driver for PC-NFS for its EtherCard PLUS LAN adapter cards.

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There is claimed to be substantial interest in the sale of Bonar August Systems Ltd, the fault-tolerant real-time systems company put up for sale by Low and Bonar Plc: according to Robert Fleming & Co, the merchant banker handling the transaction "there is no indication that we will not meet our time-scale" - the first round bidding will close before Easter.

- 0 -

National Semiconductor Corp has reported third quarter net profits of \$14.7m, including a tax credit of \$1.5m, against a loss last time of \$25.6m, on turnover up 58.1% at \$629.2m; nine-month net profit was \$38.8m, against a loss last time of 32.7m, on turnover up 31.8% at \$1,768.8m. Net earnings per share were \$0.11 in the quarter, \$0.29 in the nine months. Figures include results of Fairchild semiconductor business since October 1.

- 0 -

L M Ericsson AB has completed sale of 80% of Ericsson Information Systems to Nokia Oy for the equivalent of \$265m, Ericsson revealed this week: the transfer of control has not yet formally been approved by Sweden.

Philips Business Systems was showing off its first 68030-based P9050 Unix supermicro at the Hannover Fair last week, but the Dutch comp any is looking towards RISC micro processors to provide a performance step-up in its next generation systems: Software Productivity Systems marketing manager John Williams said that the evaluation process was still continuing, but that he would be "very surprised" if the company did not choose Motorola's forthcoming 88000 RISC processor - Philips' Signetics chip shop is an official second source for lower level members of the Motorola 68000 family - Williams added that higher performance systems would be necessary to allow Unix to compete in installations involving computer aided software engineering tools such as its Maestro Integrated Project Support Environment.

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Altos Computer Systems Inc is the latest arrival on the Singapore shore, and its Laguna Systems subsidiary there started manufacturing eight-user Unix machines this month: the target is 15,000 machines, worth \$43m in the first year, rising to \$200m in Year Five.

- 0 -

Intergraph Corp has agreed to put up an additional \$2m dollars of equity financing for Tangent Systems Corp, which develops software for electronic design - Intergraph was already the largest investor in Tangent and has also agreed to buy all the Tangent Systems preference shares held by venture capital funds which participated in Tangent's second round of financing in June 1986: in november 1987, Tangent said that Toshiba Corp and Motorola Inc had adopted its Tangate software for sea-of-gates gate array design - the software runs on workstations made by DEC, Apollo Computer and Sun Microsystems as well as those made by Intergraph.

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Number 174

HEWLETT-PACKARD ADDS TO UNIX-BASED PRECISION ARCHITECTURE RANGE

"Its most powerful computer system to date running the Unix operating system" has this week been launched by Hewlett-Packard along with two new mid-range additions to the HP 9000 Series 800 Precision Architecture family. The new Models 835S and the 835SE have been given a floating point co-processor which gives the the 835S a linpack benchmark rating of 2.02 double-precision MFLOPS, which is four times the DEC MicroVAX 3600 and 75% faster than the Sun 4/260, claims HP. The 835S is intended as a file server and will handle up to 30 concurrent users. The Model 835SE has the same performance as the 835S but supports 70 users and is targetted at business as well as technical markets. HP claims a higher performance than the DEC VAX 8800 at less than half the price for the new-top-of-the-line 855S. The system can server up to 400 users and is around 50% faster than the existing Model 850S. The Model 850S can be upgraded can be upgraded to the 855S through a board swap. £32,083 is the price for an 835S including 8Mb error correcting memory, disc interface, six channel multiplexer, and 16 user HP-UX license. The 835SE with 24Mb error-correcting main memory, I/O expander, battery backup unit, and a 64-user HP-UX license is £73,525. Both systems are orderable now with twelve week delivery. The Model 855S is £230,000 with delivery expected in the first half of 1989.

MOTOROLA ADDS 33MHz 68020, 16MHz AND CMOS 68000s

A 33MHz version of the 68020, a 16MHz 68000 and 16MHz CMOS 68HC000 were added to the line-up of microprocessors from Motorola Inc's Microprocessor Products Group on Monday. The company claims that the 33MHz 68020 is the fastest clock speed 32-bit microprocessor on the market, although several companies, not least Intergraph with the Clipper, are likely to dispute that claim. Motorola also quotes Dataquest figures that suggest that 746,000 68020s were sold in 1987, making it the top-selling 32-bit part. The 16MHz 68000 should appeal to low-end users such as Apple with the smaller Macintoshes, Commodore International and Atari Corp, while the 68HC000 is likely to find its way into 68000 family lap-tops and in embedded applications requiring a totally enclosed environment. The announcement does not include the top-end 68030, but Motorola promises to come out with 68030s with faster clocks than the present 25MHz limit. The 33MHz 68020 is available on 60 days delivery at \$571 for quantities of 100 to 499. The 16MHz 68HC000 is out now at \$34.45 for quantities of 100 to 499. The 16MHz 68000 is on 60 days delivery at \$18.90 for 100-up. The 25MHz 68030 is \$485 for 100-up - \$86 less than the 33MHz 68020.

COMMODORE SETS 68020 AMIGA-UX LAUNCH FOR SEPTEMBER

Commodore Business Machines Inc of West Chester, Pennsylvania, has chosen to launch a new Unix-based version of its Amiga PC into Europe ahead of its US introduction. Previewed at CeBIT in Hannover last month, the Amiga 2500 UX will run AmigaDOS if you boot up ordinarily, but full Unix V.3 if you boot up whilst holding the mouse button down. The system is 68020-based and comes with 4 Mb memory and up to 100 Mb hard disk, with optional tape streamer for back-ups. It will be targeted towards business users and the education markets in Europe when it becomes available in September; but in the US, where a launch date has yet to be set, the machine will be pushed more towards the general workstation market. Software includes support for X- Windows, but company spokeswoman Gail Wellington said that a "very fast and more flexible" proprietary windowing system would also be offered. Unix users can also take advantage of the Amiga's graphics chipset to produce faster lines and fills, etc. Also available for Europeans in September will be an add-on card with 68020, memory management unit, and Unix for existing Amiga users to upgrade their machines. Prices have not yet been set. Wellington said that the company was also working on a 68030-based line for release next year, bringing them in-line with arch rivals Atari Corp, which is planning to launch its own 68030 ST systems by the end of the year (UX No: 168).

NOW INTERGRAPH WINS AT&T BINARY PACT FOR CLIPPER

The Intergraph Corp Clipper family of microprocessors has joined the Sun Sparc, MIPS' RISC, Motorola's 88000 and 68030 and Intel's 80386 in winning AT&T's agreement for an Application Binary Interface for Unix System V. Binary compatibility implies that applications written for one microprocessor should be portable to any of the others without the need for any recompilation.

CHOTS DELAYED - UNISYS TO STEP INTO DEC'S SHOES

The UK Ministry of Defence CHOTS project (Corporate Headquarters Office Technology System) potentially worth around £300m, has slipped by about three months and following DEC's withdrawal from the consortium led by GEC Telecommunications, now merged with Plessey Telecommunications, rumours abound suggesting that Unisys will be filling the gap. Last year the four consortia led by British Telecom, GEC Telecommunications, ICL and Software Sciences were expecting to have the precise functionality and product to be delivered specified by March this year. The MOD, however, explained that its schedule was rather optimistic and now expects the formal tendering process for the prototypes to begin during September. Two of the four consortia will be chosen at that time to supply the MoD with prototypes of a Unix-based office automation system which would eventually serve 24,000 users spread over 40 sites: but the sting in the tail is that even after prototypes are chosen and delivered the MoD may even then decide not to go through with implementing the complete system.

386i FROM SUN IS DOS/UNIX BRIDGE

Sun Microsystems this week entered the crowded PC market with its 80386-based personal workstation coming in at about \$8,000. Sun is pitching the new machines, the 386i family, as a bridge between the commercial world of DOS and the technical world of Unix. The 386i will run Microsoft Corp's MS-DOS and AT&T's Unix System V.

PROTOCOL ENGINES INC ATTEMPTS TO SOLVE COMMS SOFTWARE PROBLEM FOR FDDI FIBRE OPTIC NETWORKS

The nearer we get to seeing complete implementations of the OSI protocols, the louder the rumblings become that they will be simply inadequate for many applications. Already, segments of the industry are looking to implement FDDI fibre optic networks for real-time applications and others where speed is a premier requirement (UX No 171). But already, the limiting factor in Ethernet networks is typically the communications software; estimates suggest that of the 10mbit nominal bandwidth in a TCP/IP Ethernet, only 1.2 mbits is available to an application because of the layers of overhead imposed mainly by the TCF and IP protocols. Simply plugging in fast wiring or fibre optics clearly does not solve the problem.

It would be nice if the OSI protocol stack could be simply implemented in silicon in a compact enough fashion to overcome the performance restrictions, but the OSI protocols are large, complex and general purpose, and many feel that the current level of chip technology is just not up to it.

One unusual alternative approach is being pursued at Protocol Engines Inc, a Santa Barbara, California company spun out from workstation manufacturer Silicon Graphics Inc last September. Founded by Larry Green and SGI chief scientist Greg Chesson, the idea is to exploit and promote Chesson's ideas for a lightweight, specialised transfer protocol, corresponding to OSI layers 3/4, that can be implemented in silicon. Protocol Engines to allow applications to use the full bandwidth of a network - and the company is aiming for the 100 mbits per second of FDDI as an early design goal.

As Chesson puts it, the goal was to provide reliable communications where the protocol processing for a packet is completed within the minimum packet arrival time - effectively removing the overhead imposed by the protocol.

The company has no pretensions to implementing higher-level services in silicon, and Chesson is keen to emphasise that he is not promoting a competitor to OSI: PEI's Express Transfer Protocol, XTP, incorporates various specialised features, could theoretically coexist on a network with OSI transport protocols, and would typically be accessed directly - instead of through a stack of higher level protocols - for performance reasons by real-time applications. Among the design features cited by Chesson are extensions for reliable multicast systems (involving communications between more than two systems) and a real time reliable datagram service.

Initially, he is looking for an implementation in silicon - a chipset rather than a single chip, although later implementations may be shrunk onto a chip and a slower, Ethernet single chip implementation is planned. By hooking chips in parallel, the aim is to get up to the gigabit per second level eventually.

Not too surprisingly, relatively little is yet available; the company has been designing a software emulation of the Protocol Engine and working on perfecting the XTP specification; according to PEI president Larry Green, target timescales - not, as yet, committed delivery dates - include a stable XTP specification this summer, with several ports of a software XTP implementation for Unix, VRTX, and VMEbus specialist Interphase's Smart operating system. By December, the company hopes to have completed a VME board emulating the Protocol Engine and providing half the 100Mbit/s target performance. A semicustom implementation of the engine is due around the third quarter 1989 to be followed by a full custom VLSI implementation in mid-1990.

Apart from the technical difficulties of PEI's developments, there is of course the problem of getting people to adopt the products when they appear, and PEI has taken an equally unusual approach to proliferating the technology.

A Technical Advisory Board, limited initially to twelve members, is being set up to operate as a consortium evaluating, providing feedback, and implementing the technology. So far, members include Apollo Computer, Unisys, Martin Marietta, and, naturally, Silicon Graphics. The TAB will probably also include semiconductor manufacturers contracted to make the chips, PEI will operate as a licencing and development company selling to and through the TAB members.

In addition, Chesson emphasises that much of the work of PEI will be put in the public domain. And for a young company, PEI appears to have attracted considerable interest elsewhere: the US Department of Defense group developing standards for military fibre optic networks is studying the use of XTP, and there is already an ANSI committee working on the formal adoption of XTP. Nevertheless, acceptance of XTP remains top of Green's list of worries.

He considers funding to be less of a problem, despite the fact that PEI has a mere \$250,000 in seed financing so far, which is expected to be used for the production of the semicustom engines.

Green saw three likely markets for the PEI products - military real-time local area networks, graphics data transfer between high-performance workstations, and mainframe-to-mainframe communications. The company also hopes to get products adopted for the fibre optic metropolitan data networks currently being worked on by AT&T and other telecommunications companies including British Telecom.

However, once the products start to appear, a new set of technical problems is likely to appear with them. As Chesson points out, no one has implemented protocols in silicon that operate real-time networks at this level of performance before, and "the properties of the networks will be quite different". But if the company does succeed in making the products perform and work together, the interest in them could well expand dramatically; and with the throughput problem solved, Chesson says that at last, the industry will be freed to concentrate on providing higher level services.

"100 BID" FOR 1m UK INLAND REVENUE UNIX PACT WON BY ICL

STC Plc's ICL, which has been a slow starter in the Unix market, was finally able to announce a major UK Government order for its Clan range of Unix systems last week - but the price for the contract, which was won against considerable opposition, reflects the fact that competition in the market is so intense that few companies will make much money out of it. The £1m order is for 133 of the 68020-based Clan 4s, which are produced under an OEM deal with US manufacturer Datamedia, each with 4Mb memory, 112Mb or 300 MB disk, and streamer tape, providing 411 terminals in all. They are being bought for the Inland Revenue's 132 Valuation Offices, and will enable the ~~Offices to carry out a total revaluation of 2m non-domestic~~ properties - ranging from Heathrow Airport to fishing rights in Wales - by December 1989, to coincide with the Government's introduction of the community charge for rating domestic properties. Timescales for implementation of the system, which is to be developed using the Oracle database system, are tight; initial development was on an NCR Tower at the Valuation Office's Worthing development centre, and the bulk of the ICL systems are to be delivered between May and August. ICL said over 100 suppliers expressed interest in bidding for the contract. Meanwhile, ICL says it has sold some 2000 Unix systems worldwide, including about 750 of the DRS 80286-based systems, 600+ of the 68000-based Clan 3s, 250 Clan 4s and over 100 of the Clan 5,6, and 7 which are based on Computer Consoles superminis.

TADPOLE TECHNOLOGY SEEKS £500,000 IN RIGHTS ISSUE; WILL BUY REST OF US ARM

Tadpole Technology Plc, the Cambridge-based Unix board builder, was able to report a splendid 1987 with net profit up 341% and turnover up 126%. The company, whose shares are quoted on the informal London over-the-counter market, is proposing a rights issue to raise another £500,000 of working capital, but details have not yet been published. It also says that it plans to acquire the 64% it doesn't already own of its US marketing and procurement company Tadpole Technology Inc in Dublin, California. It also says that new customers acquired during the year included GEC and its Marconi subsidiary, Ferranti International, McDonnell Douglas, GE, Ericsson Computer Systems, Unisys, Honeywell Bull, Amdahl and Martin Marietta, while British Telecom and Plessey continued to buy. Big news for the immediate future will be the boards built around the new Motorola RISC, which will be offered with the company's own optimising C compiler (not a bought-in product as incorrectly stated in UX No 173), which the firm says was specifically designed to get the best out of the RISC.

TEKTRONIX HANDS CHIP DESIGN BUSINESS OVER TO MENTOR

Looking to reduce costs and improve its drab financial performance, Tektronix Inc, Beaverton, Oregon, is pulling out of the computer-aided engineering systems market and selling some computer-aided engineering technologies and the Computer-Aided Software Engineering Division to Mentor Graphics Corp for a knock-down \$5m in cash. Both companies will co-operate to provide an integrated set of design through to testing products. Tektronix reckons that the move "signifies an important step toward improved profitability and revenue growth" and that its customers "will benefit from an integrated design and test solution delivered by acknowledged leaders in both fields". Current Tektronix CAE Systems Division customers will be migrated to comparable products of Mentor Graphics and Tektronix will designate Mentor and its Context Corp subsidiary as the preferred suppliers of electronic design automation and documentation management tools to Tektronix - and Mentor looks for a positive financial impact from the resulting increase in both system and service sales. Users of Tektronix computer aided engineering software on Apollo Computers workstations will be offered a free ride over to the Mentor Graphics tools on their existing hardware - Mentor is Apollo's biggest OEM customer - and customers using other workstations will receive the "aggressive" Apollo upgrade discounts from Mentor Graphics. To ensure smooth migration customers, Mentor Graphics will hire some of Tektronix' CAE field applications engineers and Tek is developing a database migration path for libraries, customer schematics, layout designs and so forth. It will also transfer some engineering staff and the rights to key CAE technologies including sea-of-gates placement and routing algorithms, microwave design and synthesis technology and analogue simulation technology to Mentor. Mentor is taking the Computer-Aided Software Engineering products, technology and personnel and promises to assume support of the customer base and continue to develop the family.

AS VALID SETS WHITE KNIGHT PROGRAM FOR TEK USERS

Leaping in to fill the gap for Tektronix users and create a bit of extra business for itself is Valid Logic Systems which has announced a special program enabling Tektronix CAE Systems customers to migrate to comparable products from Valid. The program, dubbed "White Knight," is intended to serve the Tektronix customer base by offering a transition plan for their software, hardware, maintenance and training to the Valid Electronic Design Automation environment. The Valid environment includes the complete range of VAXstations from DEC as well as workstations from Sun Microsystems. Valid is targeting this program primarily for customers using Tek CAE's digital platform-based EDA tools, although this offer is open to customers using Apollo-based systems as well. Details of the program will be available through Valid's direct-sales organization.

IDT, LSI ANNOUNCE IMPLEMENTATIONS OF MIPS R3000

Following MIPS Computer Systems R3000 launch last week its semiconductor partners all duly made their own announcements of their implementations of the device, with Performance Semiconductor getting in first in time for last week's issue. Integrated Device Technology introduced its 32-bit CMOS RISC microprocessor chipset, performing a sustained rate of 20 MIPS with a 25 MHz clock rate. Under the terms of the agreement with MIPS, IDT is licensed to manufacture and market MIPS' central processing unit, floating point accelerator as well as future peripheral components. IDT's RISC chipset, comprised of the IDT79R3000 microprocessor, the IDT79R3010 floating point accelerator and the IDT79R3020 write buffer, will be manufactured in IDT's advanced 1.2 micron feature size CEMOS (enhanced CMOS) process. The IDT79R3000 will be available in September. Sample units of the IDT79R3010 floating point accelerator will be available in July and production quantities will be available in October. Sampling of the R3020 write buffer will be in August and production units will be available in October. Both MIL-STD883C and radiation hardened versions of the R3000 chipset will be available in early 1989. Packaged in a 172 pin flat pack, the IDT79R3000 will sell for \$795 in lots of 100 or more. Pricing for the IDT79R3010 floating point accelerator will be \$875 for 100 and up units, packaged in an 84-pin J-bend ceramic chip carrier. The IDT79R3020, packaged in a 68-pin plastic leadless chip carrier, sells for \$45 in lots of 100 or more.

HCMOS Implementation

LSI Logic Corp simultaneously announced its 32-bit HCMOS implementation of the MIPS R3000. LSI will offer the LR3000 chipset as a standard product and as an ASIC library element in its proprietary Modular Design Environment. Standard product prototypes will be available during second quarter 1988. The devices will be manufactured using LSI Logic's advanced 0.7-micron channel length HCMOS process. The chipset consists of the LR3000 CPU, the LR3010 floating-point accelerator and the LR3020 write buffer. Systems based upon these components achieve sustained performance of 20 mips and 7 megaflops for single-precision floating-point operations. Software from LSI includes Unix and optimising high-level language compilers residing on the M Series of micro-supercomputers from MIPS. The LR3000 CPU includes a high-speed arithmetic unit and a coprocessor interface. It contains a 64-entry translation lookaside buffer which supports up to 512 kilobytes of cache memory, requiring medium-performance SRAMs.

INFORMIX SIGNS WITH ARIX FOR INTERNATIONAL MARKETS

Informix Software Inc has signed an agreement with Arix Corp of San Jose, California, formerly Arete Systems. Under this agreement, all Informix database products are now available on Arix's entire line of Unix-based multiprocessor systems. Informix was attracted to the deal because of Arix's strength in international markets. Mike Lambert, Arix's vice president of marketing and sales, says that the volume of customer requests for Informix made it viable to sell and support the products itself. Lambert sees the combination of Informix's Turbo product and Arix's hardware providing a platform for high performance database transaction processing. Informix-SQL, Informix-4GL, Informix-Turbo, C-ISAM, Informix-ESQL/C and Informix-ESQL/Cobol are available on the ARIX 800, 825, 850, 875, 1200 and 1600.

SYTEK NETWORK ADAPTOR CARDS FOR SCO NETWORK

OPERATING SYSTEM SOFTWARE

The Santa Cruz Operation Inc and Sytek Inc have announced a technology exchange agreement that provides support for the SCO Xenix-NET DOS-Xenix LAN network operating system software on Sytek 6110 and 6120 Network Adapter Cards for broadband PC networks. The agreement was made as a result of IBM's decision to replace the original IBM PC Network Adapter Card with the new PC Network Adapter Card II, which removed NETBIOS from the adapter card and placed it in the PC's CPU, creating an incompatibility between the SCO Xenix-NET operating system and the IBM PC Network. Under the agreement, SCO has created software drivers that support SCO Xenix-NET on Sytek's 6110 and 6120 cards. Since the Sytek cards are fully compatible with the IBM PC Network, and since they continue to offer the NETBIOS interface at the card level, the companies say that users gain access to a steady source of network adapter cards that will support their existing operating environment. SCO's Xenix-NET is a packaged version of Microsoft Networks software for Xenix systems. SCO Xenix-NET uses the MS-NET Server Message Block (SMB) protocols on top of a NETBIOS interface for compatibility with MS-DOS based applications, including network versions of databases, word processing packages and spreadsheets.

SCS INSISTS APPLICATIONS EXIST FOR VECTOR PROCESSING

In an attempt to undermine the belief that little software exists for vector processing Scientific Computer Systems Corp(SCS) declared last week that there are now more than 150 applications available that take full advantage of the high-speed vector processing capabilities of the SCS family of supercomputers. Roland Samuelson, SCS applications marketing manager, noted that because of the SCS systems' compatibility with the Cray X-MP instruction set and CTSS and COS operating systems, third-party software vendors are able to easily qualify programs. This has allowed SCS to increase the number of programs from 50 to over 150 since the company announced the first edition of the SCS Applications Software Catalog last June.

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MIGENT LAUNCHES CAMPAIGN TO WIN DBASE USERS, DEVELOPERS WITH EMERALD BAY

Migent Inc, the Incline Village, Nevada company determined to supplant Ashton-Tate Corp and its dBase in the micro database stakes for the 80386 generation of personal computers, finally launched its while hope, the Emerald Bay multi-user database engine last week - with simultaneous launches in the US and UK and launches in France and Germany expected this month. The company has decided that its future success rests on a close relationship with software developers and is wooing them with a range of offerings in the Emerald Bay package. Only one user application has so far been launched - a Lotus 1-2-3 add-in, Summit - but Migent is looking to developers to come up with the goodies as far as meeting users' application needs is concerned. According to Wayne Ratliff, who was on the original dBase design team, and developed Emerald Bay, the principal aim of the new database is to offer software development tools for 'next generation' products. Migent International managing director Jan Feaster expands on this, saying that Migent wants to establish itself as the developer's ally, and to that end, the company will not charge royalties for resale of its technology by developers. Migent claims that Emerald Bay offers the database market the first environment- and language- independent database server, enabling multiple and diverse applications to share data in a single or multi-user environment. It has been launched as four products: a database server costing £595 for local area network data management and control; a developers' toolkit for C at £395, a database programming language, £395; and Summit, a database add-in for Lotus 1-2-3 priced at £159, now.

"A new and better way"

At the heart of the Emerald Bay concept is its language-independent, multi-user Database Server. The engine stores data and distributes it to any user in a network, regardless of application, and eventually - though Migent does not say when - regardless of operating system. The Database Server enables all Emerald Bay applications to become multi-user on most local area networks. It also handles multi-user data security and integrity. Users can share the same data which is located in the Database Server while using different applications. "With Emerald Bay we created a new and better way to implement data management. Our goal was to provide software that would allow today's personal computer users to enjoy mainframe functionality," Ratliffe says. According to Charles Hamilton, Migent's president and chief executive, additional phases of Emerald Bay products will allow data stored in the Emerald Bay Database Server to be shared by such non-compatible operating systems such as OS/2, MacDOS and Unix. IBM's SQL Structured Query Language will be supported in future releases. According to Migent there are around 600,000 dBase and C language independent developers and it looks for a full 300,000 of these to take Emerald Bay on board. Just whether Emerald Bay makes Migent's rivals green with envy will depend on the reception that developers give it: a thumbs down from them will scuttle Migent's strategy because Emerald Bay without more applications is unlikely to attract many users.

XIOS SPEARHEADS ATTACK ON EUROPEAN MARKET FOR CANADA'S AMBITIOUS KINBURN

The background to the European launch of Xios "the shape of things to come" Systems Corp late last month involves a complex merging of companies, research projects, customer bases and products, superficially comprehensible only to high calibre corporate strategists. Essentially, the new company has been created by merging the Ottawa-based Kinburn Technology Corp's office information systems subsidiary, Xios Systems Corp, with word processing systems specialist AES Data Inc, acquired by Kinburn for \$16m last September. The Hammersmith-based Xios Systems Corp will use AES Data's existing group of European subsidiaries and distributors to market its Unix-based office information management systems software product Renaissance, although AES Data no longer exists in its own right, or indeed by name. Renaissance was developed over three years at a cost of \$5m by Xios Research, a team of scientists and engineers within another Kinburn Group affiliate, SHL Systemhouse Inc, based in Canada. Renaissance is described by the company as a powerful set of tools to run word processing, data processing or personal computing applications: the company is keen to stress however, that Renaissance is merely part of a broader offering. Under the banner of "doing more with more", the company aims to provide mid-to high-end customers with specialist facilities management and integration advice and, in these circumstances, will exploit Renaissance's Unix-based portability to allow existing separate office automation systems within a company to communicate with each other. According to Xios chairman and chief executive Ray Hession, this Renaissance-based consultancy package will place the company in a unique niche between product companies and custom systems integrators. Tried and tested hardware to this point includes "any" Convergent Technologies machine, the NCR Tower, Hewlett-Packard minis and Altos micros, and a range of other Unix machines. Renaissance also supports Informix and Oracle databases.

Hammersmith

AES customers may find comfort in the discovery that Renaissance is a fully compatible upgrade for Access, the office automation package released by AES last year, which will continue to be available under the Xios 7600 name. Xios Systems anticipates that Europe will provide 50% of its total revenue, and is basing its European headquarters in Hammersmith: within the European market, the UK is expected to account for some 40% of the company's revenue. The "full capacity" of Renaissance will be available over the next few months in the UK, and by next year in Europe. Prices have not been formally revealed, but an entry level system is expected to sell for between £50,000 and £100,000 or so. And just who is Kinburn Corp? It is an Ottawa-based unquoted conglomerate whose two principal interests are its 50.5% shareholding in quoted SHL Systemhouse Inc of Ottawa, and Paperboard Industries Corp, a paper and packaging company in Toronto. But its prospects are such that BCE Inc, the former Bell Canada Enterprises, is handing over control of its Computer Innovations microcomputer retailing chain to Kinburn, and has agreed to pump over \$200m into the company with options to take its stake up to 49%. Annual turnover at SHL Systemhouse Inc is running at over \$150m.

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Minigrams

Apollo Computer Japan has received orders for 200 engineering workstations from Waseda and Kyushu Industrial Universities, and released a Japanese language version of its DSEE development support environment to run on them.

- 0 -

Oracle Systems Corp saw third quarter net up 168.7% at \$13.0m, on sales up 118.7% at \$76.3m; nine months net was up 197.3% at \$23.8m, on sales up 120.0% at \$177.9m. Net per share rose 150% to \$0.20 in the quarter, 185% to \$0.37 in the year.

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Sun has an 18-month contract worth over \$10m from Integrated Computer Graphics Inc for Sun workstations and servers for use in its Computer Integrated Building turn key systems for material management, requirements and accounting.

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Cromemco has joined the Unix-based 68020 fray with its System 115: with 2Mb RAM the CS-115 is priced at £9,400, the system includes 175Mb hard disk and 60Mb tape drive.

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Stratus Computer Inc has committed to Motorola Inc's forthcoming 88000 RISC microprocessor for a future generation of its fault-tolerant systems, with availability planned for the early 1990s; the new machines will be source code-compatible with the company's present line of XA2000 Continuous Processing Systems, which are based on the Motorola 68020.

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Entre Computer Centers saw second quarter net profits of \$1.4m, against a loss last time of \$2.7m, which included a loss of \$6.7m from closing of overseas operations, on sales up 44.8% at \$31.7m; mid-term net was \$2.6m, against a loss last time of \$2.2m, on sales up 58.9% at \$60.8m. Earnings per share were \$0.14 in the quarter, \$0.26 in the year.

IBM has announced first fruits of an agreement with Interleaf Inc on electronic publishing with IBM Interleaf Publisher for the PS/2 Model 80 under PC-DOS, shipping in May and also announced IBM Interleaf Publishing Series RT Personal Computer Edition under AIX Unix: the Publisher is an integrated system that automatically lays out the document according to the user's specifications, and includes full word processing - the PS/2 Model 80 version costs \$2,500 and needs a 6Mb CPU and 40Mb disk, the version for the RT will follow in October at \$6,600.

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Cray Research Inc has an option on the vacant Inmos International chip plant in Colorado Springs as its new base for building the Cray 3.

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Alliant Computer Systems Corp now has definitive agreement for its proposed acquisition of Raster Technologies Inc, paying 2.2m shares, worth \$16m for the company.

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Computer Automation Inc, Irvine, California reports that Canon Inc and "a Taiwanese computer manufacturer" have taken licences for the company's Automatic Modular Memory Address Allocation System patent, which Computer Automation believes is an essential element of the Microchannel architecture of IBM's PS/2 micros; discussions of potential licence pacts with other manufacturers are continuing, said Computer Automation, which also warned it may report lower profits or possibly a loss for its fiscal third quarter which ended on Sunday.

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Tobacco giants Gallaher Tobacco (UK) Ltd has ordered a Unix-based Personnel Management System from London-based Percom Ltd to run on Honeywell machines.

During the second quarter of this year Wordperfect Corp will begin shipping its Unix-based version of its wordprocessing package Wordperfect 4.2, the initial release will run on the AT&T 3B2 and NCR Tower systems but will retain compatibility with Wordperfect files generated on other systems such as an IBM PC, Data General, DEC VAX, Atari, Amiga and Apple machines.

- 0 -

Apricot Computers plc and the Maidenhead, England-based accounting systems specialists Tetra Business Systems have formed a joint marketing agreement under which Apricot will market Tetra accounting software throughout its UK network of systems resellers.

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NCR Ltd's Independent Marketing Division has announced that its Midline Terminals and Checkpoint software for EPOS systems are now available to its third party resellers: the systems integrate NCR's Unix-based Towers with the PoS terminals and the modular software.

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Correction: the optimising C compiler for Tadpole Technology Plc's forthcoming processor boards based on the Motorola 88000 RISC is the Cambridge company's own development and was not bought in (UX No 173).

- 0 -

Control Data has won an order worth \$10 million for over 180 of its Silicon Graphics-based Cyber 910-500 workstations from the giant Chrysler Corporation for computer-aided design, engineering and manufacturing: they will be networked to Chrysler's existing 30 Control Data Cyber mainframes and a Cyber 205 supercomputer at the company's Highland Park, Michigan technical computer centre.

- 0 -

Apricot Computers' Major Systems Division has signed up the first three system houses that will sell on the Sequent Symmetry parallel processors it re-badges as the VX9000 Series in the UK (UX No: 159): McGuffie Brunton Ltd, Kestrelinfo, and Genesis Advanced Computing are the first of 30 major systems houses which Apricot is planning to sign up over the next twelve months.

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AT&T REVEALS OPEN LOOK STANDARD USER INTERFACE

- SUN DEVELOPMENT LICENCES XEROX "LOOK AND FEEL"

AT&T's long-awaited announcement of a standard user interface for Unix System V came at the beginning of the week, designed for AT&T by Sun Microsystems Inc, with contributions from AT&T and based on technology licenced from the Xerox Corporation under a cross-licencing agreement. Currently a written specification and style-guide which is to be circulated round the industry for further comment, the interface will first appear in an AT&T product this Summer, as a window manager for the Intel-based AT&T 6386 workstation. The final specification will be available in the third quarter of the year, and will include the applications style guide and descriptions of the programming interface for Open Look under two application programmer interface (API) toolkits: the X-Windows-based XT toolkit and the NDE toolkit based on Sun's NeWS. AT&T says it will support both toolkits via a single graphics system platform, and expects to introduce the XT toolkit as a product by the end of the year, followed by the NDE toolkit early in 1989, when they will both become available in source-code form. Open Look employs multiple windows, and graphics symbols that include push pins to "pin" menus to the screen, an elevator for moving up and down text, and a mouse to select labeled buttons for printing and storing files. According to AT&T, it has been designed with both document processing and more sophisticated computer-aided engineering applications in mind. At the New York launch on Monday, application developers such as Lotus Development Corp and Ashton Tate Corp endorsed the product as a strategic element in their plans for future products: Lotus President Jim Manzi revealed that development of a Unix-based version of Lotus 123 was continuing alongside that of 123 Release 3.0, and said the company was also working with Government customers to support specific hardware platforms that support Request for Proposal Requirements (RFPs). Sun spokesman Bill Woo said that "most of the major systems vendors are interested in the product, and have already been approached". He said that the interface was likely to be offered by AT&T through an optional licence for System V, but should also be available in the public domain. It would also be moved to PC and OS/2 platforms. Sun would release its first products incorporating Open Look next year. Asked to comment on Apple Computer Inc's recent moves to protect its user interface copyright, Woo said that Sun "had taken great pains to ensure that all the technology used can be traced back to pre-Apple sources".

SCI's FORTUNE SYSTEMS ADDS ARIX LINE AS FORMULA 8000s

Fortune Systems Corp, now owned by SCI, is now attempting a re-emergence with more competitive products, streamlined distribution lines and with the financial stability of SCI. An OEM deal with Arix Corp, formerly Arete, has added clout to an otherwise uninspiring product line-up. The Formula 80xx range is the Fortune incarnation of the Arix products and comes in three models: the 8012, 8025, and 8050. In the UK there is now one exclusive distributor, UCL which took over one of the three previous distributors - Nexel, which has shipped one 8025 to a test installation. To date UK prices have only been worked out for the 8012 running at 12Mhz, which will come in at around £25,000 with 4Mb memory, single disk for 16 users. The other two prices will be worked out over the next week.

UNIX ENDORSEMENT FROM PRIME

Wholehearted endorsement for Unix comes from minimaker Prime Computer with the announcement that it will have a native implementation of the System V.3 by mid-1989 as an alternative to the company's proprietary Primos on the 50 Series minis. According to Stephen C Kiely, vice president of systems marketing and development, Unix and Primos will carry equal weight in the company's strategy for the 50 series; Prime has already invested heavily in Unix with OEM deals with Silicon Graphics and Cydrome Inc. Prime has contracted Interactive Systems Corp to do the native Unix port; to date Prime's Unix offering has been Primix, a hosted implementation under Primos developed by the Canadian company Human Computing Resources. Current Primix users will be maintained but users will get incentives to migrate to native Unix.

MULTI-PROCESSOR UNIX BOX FROM NORTH STAR

North Star is tipped to launch a multi-processor Unix machine, probably around year-end; the machine is expected to be based on its new Dimension 386 80386-based system, which is built round the PC AT bus; the company will add further 80386s to form a large multiuser system, in an approach which sounds remarkably like that adopted by add-on board specialist Corollary Inc; the machine has been prototyped in the US and the timing of its release is now said to be down to support and marketing factors.

WHITECHAPEL DEAL IN OFFING

Whitechapel Workstations' financial worries may be over by the end of this week as a result of an unspecified deal being negotiated as we went to press. The London-based workstation manufacturer, which launched in the US at the end of 1987, plunged briefly into receivership in 1986 but was then refinanced by its principal venture capital investors.

MICROSOFT AND HP RESPOND TO APPLE COPYRIGHT SUIT - AS XEROX ENTERS THE FRAME

According to both Microsoft Corp and Hewlett Packard Co, the primary motive behind Apple Computer Inc's lawsuit on the user interface copyright issue is an attempt to slow down the increasingly serious competition to what is seen as Apple's strongest technological advantage. Cupertino, California-based Apple's monetary claim of \$50,000 per infringement is seen as relatively insignificant beside the threat that all copies of HP's NewWave, Microsoft's Windows Release 2.3, and all products based around them could be ordered destroyed if the suit was successful - an outcome that neither of the defendants will contemplate. Apple filed its original complaint on St Patrick's Day, March 17th, giving Microsoft and HP twenty days to formally respond to the US courts, or to ask for an extension. Whilst HP has opted to apply for a further 60 days extension before its official response, Microsoft has been quick to file its own counterclaims against Apple, with the allegation that the contracts between the two companies have been violated, that the suit has "interfered with existing contracts between Microsoft and its customers", and that Apple's aggressive publicity surrounding the suit has damaged Microsoft.

But although the action is likely to give some pause to software developers committing themselves to the disputed products (and even to future products that may be affected, such as IBM's Presentation Manager), HP reports that interest in the NewWave interface has never been higher since its launch in November. "The lawsuit has not slowed down the momentum of NewWave; if anything it has accelerated it", said Robert Frankenberg, General Manager of HP's Information Systems Group, also in Cupertino. "We have sold well over 100 development kits, and the takeup rate has more than doubled since the suit began - a large percentage from other computer vendors looking to include NewWave with their products". Volume shipments began two weeks late at the end of March, but the delay was not connected to the lawsuit, said Frankenberg. Initially an MS-DOS based product, future NewWave versions will be moved to OS/2, Presentation Manager, and Unix (including conformance with X-Windows). Frankenberg maintains that Apple is "excited and concerned" about NewWave's technology, specifically the object management approach and easy integration of third party products within NewWave, and says there is "no meat to their allegations" - although he does admit that Apple has not yet been specific about the alleged infringements involved, "and those could be anywhere within seven or eight tapes". Cases such as this typically take at least a year to reach court, though Frankenberg feels that an out-of-court settlement is the most likely outcome. And Microsoft alleges that a similar charge of copyright infringement against it by Apple was dropped in 1986, following a response from Microsoft lawyers. One option open to Apple that it has not as yet taken up, is to sue in the conjunction, freezing sales of the product in dispute, a fairly common practice in copyright cases. Microsoft's counter-suit asks the court to assess damages for "the slander of Microsoft's title to its Windows product", and for the re-instatement of its 1985 licencing agreement with Apple, and HP's Frankenberg agreed that his company could also countersue for loss of sales. Meanwhile Xerox Corp, widely credited as the source of many of the user interface characteristics now associated with Apple, has already licenced both Microsoft and Hewlett Packard for the use of its Smalltalk object oriented language, and with this week's agreement to licence the Xerox "look and feel" to Sun for AT&T's Open Look (see front page) looks set to flex its muscles once again towards graphical interfaces, after years of maintaining a relatively low profile with ViewPoint on its own workstations. Although Xerox spokesman Terry Dillman said that the company "would not comment on litigation in which it was not involved", he added that "if other users want to licence the Xerox look and feel, just as Sun has done, they are open to come and talk".

SOFTWARE LABORATORIES RESISTING PRECISION SOFTWARE IN IRISH HIGH COURT

Following our story concerning the \$25m Unigem legal dispute being fought in the Irish High Court between Software Laboratories and Precision Architecture (UX No 172) Software Laboratories has issued a statement saying that Precision's application for delivery of the Unigem source code was successfully resisted and the High Court made no such order. The statement continues by saying that no order can be made which will affect Software Labs' right to develop and market the product. Software Labs says that Precision Software has failed to provide security for costs and adds that an application will "shortly be made to have the action stayed until such time as security for costs is furnished."

SILICON GRAPHICS SIGNS UP INDIAN PARTNER TO MANUFACTURE IN SUBCONTINENT

Silicon Graphics has signed an agreement with OMC Computers of Hyderabad for the latter to manufacture and market IRIS graphics workstations in India. The move will make the super-workstations very competitive in India, as Indian-made machines will not be subject to the heavy duties on imported hardware and software, according Achok Desai, Silicon Graphics regional marketing manager in Singapore, the company's headquarters for South East Asia and India. Silicon Graphics will transfer the IRIS technology to the five-year-old Indian CAD/CAM company and act as consultants, offering support and training for the manufacturing, testing and integration of the systems, said Desai. The engineering and scientific Unix-based graphics workstations incorporate real-time 3-D colour graphics and come with specialist CAD/CAM/CAE software. OMC Computers aims to produce between 80 and 100 of the workstations, to be called Omega Iris 3100, by the end of next year, with the first reaching the market in the third quarter of 1989. At first many of the components will be sourced from Silicon Graphics in the US, but OMC intends to transfer most of the manufacturing to India as soon as possible.

SUN UNVEILS 386i UNIX+MS-DOS STATIONS

Pitching the machine as the first 80386 box fully to integrate Unix functionality with the wealth of MS-DOS applications, Sun Microsystems last week duly unveiled the Sun386i family, claiming that more than 75 third parties and end users had already implemented Unix applications and add-on hardware for the Sun386i. All applications for the Sun-3 and Sun-4 run on the 386is with minor recompilation, and MS-DOS applications run concurrently. The MS-DOS under facility is provided by Phoenix Technologies Ltd's VP/ix. Unix applications are easier to use on the 386i, claims Sun, because it has added four new features to SunOS: an icon-based user interface; high resolution colour display, simplified workstation and administration; and hypertext-based on-line help and documentation. Sun is pitching the machines at electronic publishing, financial services, mechanical computer-aided design, computer-aided software engineering, and computer integrated manufacturing, and general business use. The windowing system is SunView and the Sun Organizer is the icon-based desktop manager - X11/NeWS windowing is promised for later this year. The stations include four AT slots, and come in Sun386i/150 3 MIPS and 386i/250 5 MIPS models, with 1.44Mb 3.5" floppy, 4Mb to 16Mb memory heterogeneous networking, high-resolution graphics, and up to 327Mb internally, 981Mb externally. A base Sun386i/150 mono station with 15" screen and 4Mb plus pre-loaded SunOS is \$8,000; with 14" colour and 91Mb disk it's \$11,000, and a mono 386i/250 with 19" mono and 8Mb memory is \$14,000. Current back-logs run out to 60 to 90 days.

AND ADDS NETDISK FEATURE TO SunOS 4.0

Sun also added Netdisk, describing it as a standard way to connect a diskless workstation or personal computer to any server on the network in a multi-vendor environment. Netdisk is included in SunOS release 4.0 and in the ONC/NFS 4.0 Open Network Computing/Network File System software. Sun claims that over 25 computer and software vendors have committed to port Netdisk to their products. Sun says that hitherto, users generally had to deal with a dedicated server for each type of diskless system they bought. The new release also improves system throughput and has a new virtual memory management system. It will ship with all Sun systems from May.

GENERAL MOTORS TAKES A BACK SEAT IN FURTHER DEVELOPMENT OF MAP

General Motors Corp, the driving force behind the MAP Manufacturing Automation Protocol factory networking standards, is to be relegated to a lower profile role within the US MAP User Group. The move is part of a radical restructuring of the user group planned for next year which will also strip the group of its two key funding sources, the Society for Manufacturing Engineers and the International Technical Institute. Both bodies say that they want to be relieved of the heavy financial burden of running the user group, which they have borne largely alone, and by next year the group will have to be a lot more self-sufficient.

EVANS & SUTHERLAND JOINS MINISUPER FRAY

While the market for minisupercomputers and extremely fast workstations has rapidly become dangerously crowded, the market for high-end supercomputers has so far seen fewer entrants. The latest effort to challenge the supremacy of Cray Research comes from the unlikely quarter of the new computer division of Evans & Sutherland, the Salt Lake City company best known for the graphics expertise that resulted in the recently-announced workstations jointly developed with DEC. The computer division, formed 18 months ago and based in Mountain View, California, is planning to launch a machine late this year that is claimed to couple power of 300 to 1000 MIPS and MFLOPS with the interactive use and graphics capabilities of minisupers and workstations, at a price of \$3m to \$8m. The unnamed machine, which will run the Mach operating system developed at Carnegie-Mellon University and derived from Berkeley Unix 4.3, uses up to eight processors, each of which has 16 computational units. Each computational unit is claimed by the company to provide half the power of an IBM 3090. The whole caboodle utilises a huge shared memory, and the use of relatively few powerful processors as opposed to a fine-grained, massively parallel approach is claimed by the company to make for easier porting and development of applications. In addition, Evans & Sutherland says the emphasis is on scalar performance - potentially easing the work involved in exploiting the power of the machine, and part of the marketing pitch of minisuper makers Multiflow and Cydrome - as opposed to the reliance on vector processing of some other supercomputers and minisupers. The machine will support multiple workstations, using the company's graphics technology, linked by a high-bandwidth channel attachment.

AT&T WON'T EXERCISE OPTION TO UP OLIVETTI STAKE TO 40%

After what were described in Rome as "significant basic differences" between the two companies, AT&T Co has decided not to exercise its option to raise its stake in Ing C Olivetti SpA to 40% from the present 22%. According to the Wall Street Journal, AT&T wanted a bigger management role in the Italian company, but Carlo de Benedetti, whose Cie Industriali Riunite has just 13% but control of the board of Olivetti, was unwilling to cede a greater management role for the US phone giant. Under the 1983 agreement with Olivetti, AT&T was limited to a 25% until this year, and is now entitled to go to 40%. It says it does intend to retain its present 22%, but the disagreements cast doubt on the long-term future of the ties between the two - at present Olivetti manufactures all AT&T's personal computers, and in return markets AT&T's 3B computers and Dimension PABXs in Europe.

NOKIA TO BUILD ON ERICSSON'S UNIX INTERESTS

Nokia Data, the Swedish company formed from the acquisition by Finnish conglomerate Nokia Oy of Ericsson's data systems division, last week elaborated on plans to build substantially on Ericsson's minor interest in Unix. In 1989, the company is planning to complete conversion of its portfolio of applications that currently run on the Ericsson 2500 range of proprietary systems to allow the software to run under Unix. Accordingly, the company will be looking round for suppliers of large Unix machines; currently its Unix line consists of the System 20, inherited from Ericsson and consisting of products built round Sun workstations and processors, but it will be seeking systems up to the 150-user range to top off the product line. Nokia points out that the 2500 range already supports Ethernet; the intention is that Unix processors could be networked with 2500s to increase the power available to existing users. Ideally, in such a configuration users would not have to know whether they were running off a Unix machine or a 2500. The company's strengths are in the finance, distribution and manufacturing industries and it emphasises that it will continue to focus on direct sales and service rather than trying to compete in the cut-throat reseller market. It will also be focussing on office automation. The System 20 itself, which Ericsson was already selling in Scandinavia and Holland, is likely to be introduced into the UK this year. Meanwhile, Nokia appears keen to become a member of the X/Open Group, while Ericsson, which admits that it no longer fulfils the criteria for X/Open membership, so far retains its position as an X/Open shareholder. Ericsson hopes to continue to have some role with X/Open and notes that it is likely to use Unix in other areas, notably communications products. X/Open notes that it has no procedure for transferring membership between companies. Nokia Data, part of the £3bn Nokia Group which makes everything from power stations to toilet paper ("even IBM cannot claim to make toilet paper"), from mobile telephones to rubber products (an exceptionally rainy year boosted demand for rubber boots in Finland, notes the company's 1987 report), claims that with £700m revenues and 8000 staff it is now Europe's seventh largest information technology company and easily the largest in Scandinavia. And the company plans to grow its involvement in electronics - standing at 67% of Nokia Group revenues following the Ericsson acquisition - still further by acquisition as well as sales.

ITL TO PAY INITIAL £1.5m TO EXPAND ITS HEALTHCARE SIDE

Against the background of current government efficiency drives within the National Health Service, Hemel Hempstead-based Information Technology Plc yesterday announced plans to expand its healthcare computer systems business with the proposed acquisition of Silicon Lab Ltd, a three-year-old supplier of pathology laboratory software, based at Aston University's Science Park in Birmingham. The acquisition - once cleared with ITL shareholders in April - will merge ITL's existing healthcare activities with those of Silicon Lab, to produce a new Aston-based company called ITL Silicon Lab: initial consideration of an indicated £1.5m will comprise 2.5m new ITL shares and a £100,000 cash; a further performance-based payment will be made in 1990. ITL Silicon Lab claims it will hold a 40% stake in the UK departmental pathology laboratory systems market, will initially offer two independent products - Silicon Lab's Computer Integrated Laboratory Management System written in Mumps for DEC hardware, and ITL's Multilab laboratory automation package which runs on the new Unix-based ITL Series 21; the Mumps package will also be ported to run under Unix within the next nine months. It also plans a Unix-based information management system that will enable hospitals to link resources and cost information and simultaneously provide a regional resources overview to allow trading between the public and private sectors. ITL claims that the healthcare computer market is growing by at least 20% a year and that £1.5m has already been earmarked by the UK government for computer spending within the Health Service: similar health administration trends in Europe will also provide additional "positive market opportunities" for the new subsidiary outside Britain.

NO DOWNTURN SEEN BY HEWLETT-PACKARD

Hewlett-Packard Co reckons that its business is bucking any business trend towards softening of orders. "Our business is very good," chief executive John Young told Reuters: "my impression is that there is an awful lot of interest out there for our products". He looks for higher earnings for the company's fiscal second quarter over the \$162m, 63 cents a share recorded a year ago, but declined to make any forecasts. He also sees growth in the second quarter quite possibly matching the very healthy 26% scored in the first quarter. One reason that Hewlett-Packard is doing so well is that customers for its HP3000 business computer clearly like the machine so much that they were prepared to bear with Hewlett's woes in getting the input-output for the new RISC processor family right, and wait for the new high-end machines rather than defect to rival suppliers. As a result, now that all those problems are behind Hewlett, the company is "sizeably" backlogged with HP3000 orders - but Young says that the company will launch an aggressive campaign in the second half of the year to win new customers for the HP3000. The other benefit that is feeding straight through to the bottom line is that Hewlett's ambitious claims for its RISC Precision Architecture - which enables it to build the same fundamental hardware for its three incompatible product lines - really do seem to be valid: the company is finding that the cost per MIPS of building its new generation machines is substantially lower than it would have been had Hewlett persisted with three complex instruction set lines.

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PRIME SETS CAD/CAM STRATEGY IN WAKE OF ACQUISITION OF COMPUTERVISION

In the wake of its January acquisition of Computervision Corp and amidst proclamations of "feeling good about feeling good", Natick-based Prime Computer Inc is now flexing its executive muscles and publicising its new-won position as the world's second largest supplier of CAD/CAM solutions. At a theoretical level, this involves elaborating upon a future "vision" of a fully integrated manufacturing industry, while smaller, less erudite, steps comprise the formal restructuring of the company into two separate divisions, and, from the new Computervision division of the company, the Release 5 of Prime Medusa and the introduction of two new software products, PrimeControl and PrimeDesign. Essentially PrimeDesign, whose "mission" is apparently to enable designers to "design as fast as they think, and the way that they think", is an interactive three-dimensional solid, surface and wire-frame modelling system which runs either on the the PXCL 5500 graphics workstation, or in conjunction with Medusa's graphic numerical control software. The system uses the mathematical non-uniform rational b-splines or NURBS technique to represent complex curves and surfaces, provides a variety of shading features, moves and rotate models, calculates physical properties and provide component listings of assemblies: by constructing models in the system through a single database, different design groups can work on different assembly parts simultaneously, and can view other group's - automatically updated - designs: 70% of the system is written in C with the 30% user interface in LISP; an entry-level system costs £53,550. PrimeControl is an Oracle-based engineering project control system which tracks and organises computer-based design data into libraries, updates design changes and claims to provide engineering managers with overall control of projects, by providing answers to What do I have/Where is it/How do I get to it style questions. Meanwhile, the establishment of the two separate divisions mark the first manifestations of the restructuring of the post-acquisition company on an industry basis. The Computervision division of the company, headed by Prime's Bob Fisher will set the joint product range to the manufacturing industry, while the Commercial/Technical division, headed by Roy Brubaker will perform a similar function within the education, government and financial services market. Integration of the two companies will never, apparently be "total", but future plans include a single unified version of the flagship Medusa product.

UNIPLEX AND ITL CHOSEN FOR BRITISH ARMY CORMIS PROJECT

Office automation software company Uniplex and UK manufacturer ITL have been selected for a pilot scheme under the British Army's CORMIS project. The systems, to be installed at the Headquarters of the British Army of the Rhine, are part of a an Army strategy based on secure open systems networking linking both administrative and battlefield systems.

REAL-TIME UNIX VMEexec FROM MOTOROLA AT EUROPEAN UNIX USER SHOW

Motorola Microsystems now claims the position of front-runner in the campaign to establish real-time Unix standards for VMEbus machines, and is due to release the first phase of its VMEexec project at the European Unix Show in June. The company is keen to stress that it is not in the business of creating a proprietary "real-time Unix", and prefers to view its project as, in the long-term, "providing users with a set of compatible tools for all steps in the microprocessor software development cycle." Short-term, the company is awaiting the verdict of the VME International Trade Association, to whom the specifications of the VMEexec project were submitted as a "standard proposal" last November, and whose comments are expected within a matter of weeks. Essentially, the VMEexec allows Motorola's V68 Unix to talk to real-time environments through a number of interface definitions comprising the following components: two environmental runtime libraries - the System V interface definition, SVIDlib and the network interface definition, Netlib - device drivers, and real-time executive interface definition or RTEID kernels. Different teams within Motorola, including the 20-30 strong Versados team, have developed the SVIDlib and Netlib, with independent software vendors and participating VME manufacturers - to date Industrial Programming Inc, Wind River Systems, Stollman GmbH and the Montpellier-based Data Sud Systemes, providing RTEID kernels and drivers. Eventually the product will replace the Versados real-time operating system - work on migration programs is under way - and will add support to run under PC-DOS, Apple Mac II and VAX-VMS.

ANSI C STANDARD DRAWS CRITICISM AS COMMENT PERIOD ENDS

As the time allowed for public comments on the proposed ANSI X3J11 C programming language standard drew to a close this week, voices of doubt and dissent were being raised: the loudest from Dennis Ritchie, author (along with Brian Kernighan) of the original C language specification at Bell Laboratories. Ritchie pointed to several flaws in the document, such as inconsistencies caused by type qualifiers such as 'const' and 'volatile', and the use of 'noalias' pointers, which he said "is a licence for the compiler to undertake aggressive optimisations that are completely legal by the committee's rules, but make hash of apparently safe programs - the confused attempt to improve optimisation by pinning a new qualifier on objects spoils the language". Ritchie's comments were endorsed by Jeffrey Barth, VP of Californian-based Silicon Valley Software. "There are too many unaddressed items, it doesn't say a thing about the important issues". Barth said the standard lay somewhere in between "the very good, very specific Fortran standard document, that has the answer to most questions", and the Pascal standard, which he rates as "terrible: but every word has been treated as if its the Bible". Ritchie warns that the ANSI committee is in danger of ratifying "a language specification that noone can possibly embody in a useful compiler". According to Barth, most compiler developers, including Silicon Valley Software, will implement a compile-time flag that when set will conform to the new standard. "For a long time the main demand will be for the traditional K&R C specification", he predicted.

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Minigrams

Wang is said to be putting together a high-end publishing system that will combine VS systems and Sun workstations - when it can get the two machines to talk to each other.

- 0 -

Compaq Computer Corp says that profits and sales for the first quarter should be higher than analysts' expectations because of continuing strong demand for its products: according to president Rod Canion, president, sales should exceed \$425m against most analysts' predictions of between \$360m and \$390m, and earnings per share should also exceed expectations; the company says that greater than expected sales in Europe were a contributing factor to outstanding first-quarter sales, with demand for the Deskpro 386/20 continuing strong worldwide.

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Making similarly bullish noises is Unisys Corp, which says that first quarter earnings should be ahead of analysts expectations at around 70 cents a share against 57 cents a year ago: the Timeplex acquisition will be in line with the parent.

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Sybase Inc, has landed \$6m in new equity finance, with Ashton-Tate Corp of Torrance, and T Rowe Price, an investment management firm based in Baltimore, coming in as new investors: Apple Computer's Strategic Investment Group and Hambrecht & Quist Venture Partners, both previous investors, also participated in this round of financing - Ashton chairman Ed Esber comments, "We believe SQL Server revolutionise productivity in a workgroup computing environment and our equity investment in Sybase confirms our strong commitment to the product" - The new round brings the total cash invested in Sybase to \$16m.

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Cobol experts Austec, has developed a version of RM/Cobol for Unix systems and signed agreements with Hewlett-Packard and NEC.

Sony Corp has developed an automatic font creation system, the NWF608 for its News Unix workstation, based on a West German desktop publishing system for designing logos and fonts, modified for the local market: deliveries are set for July; no price was given.

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And Ricoh Co has developed an optical disk subsystem for connection to the Sony News workstation, and will market it through News distributors, starting later this month at \$7,500 in single quantities: Ricoh optical disk subsystems are selling well in the engineering and desktop publishing markets, and the company is also selling external optical drives for use with personal computers.

- 0 -

These things take time in Japan, but - no kidding - Nippon Univac Kaisha Ltd and Burroughs Co officially became one on April 1, and Koichiro Nishikawa, previously a consultant to Nippon Univac has been appointed president of the new Nippon Unisys with Teruo Sawachi as its chairman; Nippon Univac KK also announced that the computer graphics arm of its subsidiary, Nippon Univac Information Systems Kaisha, would be integrated into the new Nippon Unisys in July, but will continue to operate as "Nippon Unisys Information Systems", at least for the time being.

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A CASE tool that is claimed to have knowledge-based support for analysts working with structured development methods has been launched by Irish company Generics Software Ltd based in Dublin: GenASSIST is written in C and is based on the concepts of the Jackson System Development method.

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Rodnius has changed its name, to match its product, to Empress Inc

Nippon Sun Microsystems has decided to start selling its workstations directly to universities and research establishments from this month - the workstations have hitherto been sold through C Itoh Techno-Science: by next spring the company plans to expand its direct sales territory to whole of Japan; the workstations - which run American language software only - if you want Japanese language processing, you have to get your Suns from Toshiba Corp - sell for \$48,000 to \$110,000 in Japan; the subsidiary of the Mountain View company is looking to hire 200 more sales people to take the total to 300 by mid-year.

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Siemens UK points out that the MX2 Sinix system is being sold in the UK, contrary to our report (UX No 173); the new MX300 is therefore nearer to being a mid-range than an entry level system.

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Columbia, Maryland-based Ki Research has developed DECNet products for both Apollo and Encore.

- 0 -

Apollo Computer and Sun Microsystems are two of the thirty-one new entries to Fortune magazine's latest chart of the 500 wealthiest companies in the US, with Sun in at No 463 with \$537.5 million sales in 1987, and Apollo at No 454 with \$553.7 sales: Atari Corp, which has pretensions to move into the low-end workstation market, also made it in at No 484 with sales of \$493.2 million.

- 0 -

At the top of the list IBM remained at No 4 (\$54.2 billion sales), AT&T slipped a place to No 8 (\$33.6 billion), while Unisys at No 36 (\$9.7 billion) stayed two places ahead of DEC (\$9.4 billion), despite DEC's spectacular rise of 26 places from last year, by far the biggest rise amongst top 40 companies: below them were Hewlett Packard (No 49), Motorola (No 62) Honeywell (No 63), and Texas Instruments (No 75).

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MANUFACTURERS AND DEVELOPERS LINE UP FOR MOTOROLA RISC

Motorola was confidently predicting that it would dominate the RISC processor market by the 1990s in the same way as it currently dominates UNIX with the 68020, as it unveiled full details about the 88000 processor during its official launch in New York at London on Monday. Whilst sketchy details have been known for some time (UX No 168), Motorola revealed for the first time hardware and software supporters of the chip, support for multi-processor, fault tolerant and graphics applications, custom special function units, and a number of board level products, software tools, and applications programs. Hardware manufacturers keen to align themselves with the 14-17 MIPS chip include Convergent Technologies, Data General, Encore, Ericsson, Integrated Micro Products, Motorola's own Computer Systems Group, Tadpole, Tektronix and Stratus: IMP, Motorola and Tadpole were both showing board-level systems and software development platforms at the launch. Specialist machines can be expected from financial market manufacturers Quotron of Los Angeles and ruggedised systems maker Aitech of Isreal. Meanwhile compiler makers such as Greenhills, and real-time operating system specialists Software Components Group and JMI Consulting Inc are also working on 88000 products. Along with Motorola's software partner Unisoft, these companies are members of the newly formed 88-open consortium of 88000 users, set up to specify standards and influence future developments: the full 22-strong membership, including four in Europe, has not yet been revealed. 88-open Chairman Hans Heilborn of Ericsson revealed that 40 more companies were showing interest. Twenty-one software products are already available, including compilers for FORTRAN, Basic, Ada, C, Prolog and Lisp, applications software from Informix and Ingres, and artificial intelligence and software co-processors, including PC emulation software from Phoenix Technologies and Insignia Solutions, which according to Motorola's Ray Burgess will allow MS-DOS code to run as fast as on an 80386. Software development is aided by a full set of development tools and Unix V.3, running on Motorola's Platform 88 development system, available from July. Motorola has also implemented what it says is the industry's first procedure call standard set, which allows software modules in any high-level language to be interlinked.

OLIVETTI TO TAKE 51% OF SCANVEST-RING

Olivetti SpA has made its largest acquisition since the 1986 purchase of Triumph-Adler, buying 51% of the \$125m Norwegian Scanvest-Ring Group in a move that is part of the Italian's strategy to move from a reliance on manufacturing and box-shifting to a systems company and is said to approximately double its Scandinavian revenues. Publicly-quoted Scanvest-Ring, an aggregate of companies ranging from systems houses to communications equipment manufacturers, notched up 1987 profits of about \$12.7m on revenues of \$138m. The deal is subject to approval by government authorities. Olivetti said it had "confidence in Scanvest-Ring's present management and marketing strategy", suggesting that in the near future at least there would be no drastic changes. The 1,000-employee group includes Scanvest-Ring Telecommunications, a PABX supplier that sells in both the US and Scandinavia and like Olivetti has a relationship with Northern Telecom; Scanvest-Ring Data, a Norwegian systems integrator; Swedish Carl Lamm System, a Unix systems house that resells Pyramid Technology minis; Scanvest Management Systeme, a Danish systems integrator, and Kitron of Norway, which makes components and communications equipment. Scanvest-Ring also has 36% of Norsk Computer Industri, the maker of 68020-based Unix machines which recently clinched a deal to supply Datapoint with systems worth some \$30m at end-user prices.

FLOATING POINT TO KEEP CELERITY AFLOAT

Spotting a cheap way into the high-performance general purpose scientific and engineering computing market, Floating Point Systems Inc has leaped in and signed an agreement to acquire most of the assets of floundering Celerity Computing Inc, the San Diego scientific Unix systems manufacturer that was on the brink of liquidation. Beaverton, Oregon-based Floating Point agreed in principle to acquire substantially all assets and technology of Celerity and assume related liabilities in return for shares worth \$1.25m, plus unspecified cash payments, and up to another \$1.25m in shares if Celerity meets pre-set goals. And Floating Point will put up enough cash to keep Celerity alive ahead of completion. Celerity was formed by a group of NCR engineers involved in design of the NCR 32 microcodeable microprocessor: their ingenious idea was to use the part without microcode as a RISC processor for a line of Unix systems. It won about 100 customers for the first generation machines, and was on the brink of launching a 64-bit scientific Unix machine when the cash ran out. Floating Point and Celerity see complementary strengths in Celerity's new machine and Floating Points sales and support network. The emergence of a string of thrusting minisupercomputer builders has made it imperative that Floating Point complement its add-in scientific processors with some stand-alone machines, and Celerity can bring these to the party.

ICL OPTS FOR SPARC

ICL has made what it calls a "technology positioning" announcement, saying that it has identified Sun Microsystems' SPARC processor as the technology most in line with its open systems strategy: the result will be an ICL-designed departmental systems range based on the SPARC and due out in the early 1990s. The systems will be aimed at public service, manufacturing and financial service markets, and should offer a fourfold performance increase over current products, says ICL.

MATRA SIGNS WITH RTI FOR INGRES ON ENCORE BOX

With around 20 sales to its credit France's Matra Datasysteme is touting the Encore Multimax 320 as its main Unix offering and is seeking to broaden its distribution network with agents in the UK and Germany. Matra has recently signed a £1.5m deal with Relational Technology Inc to have a port of the Ingres relational dbms product ported to the Encore machine, Matra's XMS-7000, as well as its own recently announced artificial intelligence machine, the XMS-3000 (UX No 169). As well as the 7000 and 3000 ranges Matra includes the Norsk Data machines, its XMS-5000, and Sun workstations in its Unix product line-up.

X/OPEN SEES OPEN LOOK AS POSSIBLE ALTERNATIVE TO PRESENTATION MANAGER

The X/Open Group has responded to last week's AT&T/Sun Open Look announcement of a Unix graphics user interface by saying that it is a "clear candidate as an alternative to Presentation Manager", which previously had appeared to be the heavily backed industry favourite. Particularly relevant, in view of the lawsuits flying back and forth between Apple and Microsoft, is that Open Look interfaces should be available in the public domain. In addition, the product is likely to appear in a similar timescale to that promised by Microsoft for Presentation Manager. The Group is holding back on a decision on its adoption of a standard interface until it has had a chance to examine Open Look in detail.

DATAPOINT ADDS SIX-CPU 80386 BOX, RMS/XA FOR IBM PS/2-80

Datapoint Corp has unveiled three more 80386-based processors and says it will support the 80386-based IBM PS/2 Model 80 in its ARCnet multi-tasking, multi-processing, multi-user network environment. Joining the existing ~~80386-based 7990 multiprocessor, the three new computers~~ are the 7700, supporting up to 25 users; the 7800 dual processor, and the 7950 multiprocessor, which will take up to 300 users. The 7950 is described as having a symmetrical multi-processing architecture that optimises throughput in a multi-tasking, multi-processing, multi-user environment. Tasks are pooled and then assigned on a priority basis to the next available processor, rather than being arbitrarily assigned to one of several processor queues to await handling, as in an asymmetrical multi-processor. The 7950 comes with from two to six processors and supports up to 7.7Gb, up to 12 ARCnet local networks, and 128Mb of memory. The dual 7800 supports up to 90 users and 568Mb disk. As for the PS/2-80, Datapoint says its RMS/XA network management system turns the box into a multi-user, multi-tasking host with integral network support, providing multi-tasking and windows; multi-user and network-oriented operation; and easy migration to larger RMS/XA. No prices or delivery were given.

IBM, SUPERCOMPUTER SYSTEMS PACT DEFINITIVE

Where the company's custom used to be to make all its announcements on a Tuesday, IBM has taken to making secondary announcements just before the weekend, and last week on Friday it put out a brief statement saying that it now had definitive agreement to part-fund the parallel supercomputer under development at Steve Chen's Supercomputer Systems Inc in Eau Claire, Wisconsin - in order to speed the development. Not details on level of funding or the stake IBM gets were given.

IBM GETS OBJECT-ORIENTED C TOOLS FROM STEPSTONE CORP

IBM has gone to a little-known company, The Stepstone Corp of Sandy Hook, Connecticut for object-oriented C language programming tools. It has given Stepstone a multi-year agreement under which it will license its Objective-C Compiler and ICpak 101 class library for use on a wide range of - presumably Unix - hardware. Stepstone claims its products enable developers of large commercial software systems to improve development productivity and reduce system maintenance costs; the family consists of the Objective-C Compiler and Objective-C Interpreter and two libraries of Software-ICs - the ICpak 101 Foundation Class Library and ICpak 201 Graphical User Interface Class Library. They are currently available on Sun Microsystems, DEC VAX, Apollo Computer and Hewlett-Packard 9000 series 200 and 300, and on AT-alikes.

EVENTFUL & PROFITABLE FIRST YEAR AS PUBLIC COMPANY FOR UCL PLC

With pre-tax profits up 80% at £1.5m, London-based systems house UCL Group Plc, has completed an eventful and profitable first year as a public company. Chairman Nick Drescher said Nexel, acquired last year, helped expand the company's maintenance coverage to the whole of the ~~UK, resulting in a hardware maintenance turnover of £5.2m~~ or 32% of total business, while Computer Factors, also acquired last year, had pre-tax profits of more than £300,000 and is now handling the group's Unix activity; extended litigation between UCL and Datamedia finally resulted in a net gain of £552,000 for UCL.

NORSK ANSWERS SAA WITH NAA

Norsk Data A/S last week responded to IBM's Systems Applications Architecture with its own Norsk Application Architecture, embracing MS-DOS, Unix and its own Sintran III operating systems, tied together by Ethernet and TCP/IP with Open Systems protocols. New products for this year include PC286 and 386 workstations, a Workgroup Server as a concentrator and shared peripherals unit for Ethernets, to be followed by an ND5000 Sintran server. And in Unix, a native System V.2 server will be available at year-end using the ND5000 32-bit mini.

MOTOROLA LAUNCHES 88000 RISC PROCESSOR

After revealing preliminary details back in February, Motorola finally held the official launch of its 88000 RISC processor on Monday in both London and New York. The 88000 is a three chip set, consisting of the 88100 primary processor, which includes both integer and floating point units, and a pair of 88200 cache and memory management chips, one supplying the cpu with instructions, and the other with data. Motorola claims the 88200 is the first available RISC cache chip, and says it provides the equivalent of 50 to 70 memory and logic chips. Available in beta quality by late in the third quarter of this year, the 88000 is implemented in 1.5 micron technology and has a 20 Mhz clock speed, although a 25 Mhz version should be unveiled by the end of the year, and Motorola says it is working on a 1.2 micron implementation. The 88000, rated at between 14 and 17 MIPS integer performance and 7-12 MFLOPS floating point, is claimed to be between 1.5 - 2 times faster than other RISC processors, and aimed at the general marketplace, rather than the technical emphasis of Sun's SPARC and the recently previewed Intel 80960, aimed at embedded applications. Performance gains come partly from instruction pipelining and the mainframe technique of scoreboard, which allows up to eleven operations to be processed concurrently, but also from sophisticated compiler technology.. The chip also supports multi-processing and fault tolerance: up to eight 88200 processors can operate with each cpu, giving 128 Kb of fast local cache, and 88100 s can be linked together to form multiple or parallel configurations. A feature known as "snoopy" in the 88200 watches how data is used by other processors and can therefore identify when a "stale" piece of data is called for, enabling it to retrieve the correct information. Unisoft Corp is to implement an identical version of Unix V.3 for the 88000 and 68000 family processors, both conforming to the applications binary interface (ABI) agreement signed with AT&T and apparently finalised only this week: the agreement assures Motorola and Unisoft "full and early access" to Unix V.4 and later releases. Unisoft Chief Executive Jeremy Thomas said that this would aid the conversion of 68000 applications to the RISC processor - but added that Unisoft would also be working on a set of tools to "make this process very easy". Prices for the 88000 will initially be \$500 for the 88100 and \$800 for the 8200. By the turn of the year, once full production has begun, this should be reduced to \$300 and \$500.

DATA GENERAL TO DESIGN ECL 88000

Motorola claims to be responsible for a third of the world's CMOS and "the lion's share" of emitter coupled logic (ECL) products - but it has turned to ECL cpu design experts Data General to perform the design implementation for the next generation version of the 88000. Data General's Eclipse MV/20000 and MV/15000 both use ECL technology developed in cooperation with Motorola, which says it will manufacture the ECL 88000 at its Phoenix, Arizona plant for release in 1991, when it predicts performance levels of 100 MIPS. The version will include an instruction set processor, memory manager, system controller, cache controller, and a system bus interface. Meanwhile, Data General says it plans to use the CMOS version in future computer system families, and will market a single-board 88000 processor for inclusion in its existing systems. President Ed de Castro said that he expected the 88000 "to become the dominant core building blocks for systems designed to run Unix".

PRIME COMPUTER TURNS 80386 BOX INTO FAMILY

Prime Computer Inc has introduced two further models of its EXL 316 80386-based multi-user Unix machine, creating an EXL family. The new 320 and 325 models come in above the 316, offering 25% and 56% more performance respectively - and the last two digits indicate the clock speed - the new models use 20MHz and 25MHz versions of the 80386. They can support 48 users in typical applications, and up to 114 less active users, and as well as running Unix and MS-DOS concurrently, are also offered with Pick. Prime sees a typical 320 having 4Mb memory, 90Mb disk and 60Mb tape, and a 325 coming with 8Mb CPU, 258Mb disk and the tape. Ships start in June and no prices were given. Prime also announced an SNA interconnect package for access to host 3270 applications, an external X25 packet assembler-disassembler supplied by Micom Systems Inc, a 16-line synchronous controller and two-line synchronous controller for use in SNA networks.

UNISYS LAUNCHES INTEL BASED MID-RANGE UNIX SYSTEMS

Determined to show off the bullishness of its international business over the last year, Unisys Corp chose Nice, France as the location for the launch of its first Intel-based mid-range systems, the Series 6000/50. Graham Murphy, President, Europe Africa Division, said that Unisys was on target to be a \$3 billion company in Europe by the end of the year. The 6000/50 comes from Convergent Technologies and uses a 20Mhz 80386 with optional Intel or Wietek coprocessor to support 32 users. The system supports Unix V.3 and MS-DOS 3.2 through Merge/386 and PC-Interface products from Locus Computing. A base configuration, with 4Mb memory, 170Mb hard disk, 150Mb cartridge tape and three RS232 ports is priced at \$24,500, plus an extra \$3,000 for Unix, DOS and Locus Software. Software support will be handled throughout Europe by Sphinx Ltd's ICOS distributor network, and another UK company, EPC Ltd has been signed up to provide its EPC Fortran 77 compiler for the Series 6000. The company said that although it would not be changing its policy of acting as an OEM for manufacturers such as NCR, Convergent, Arix and CCI, it was now insisting on manufacturing rights for its OEM systems. VP, Corporate Program Management Fred Meir hinted that the company was looking to build its own systems based on Sun Microsystems' SPARC processor, but added that Unisys was also looking at other RISC technology. He also confirmed that Unisys would closely track the Sun/AT&T Open Look Unix interface for incorporation into Unisys products.

SIEMENS GIVES SEQUENT \$30m PACT

Siemens AG has given Sequent Computer Systems, Portland a new \$30m four year pact to intergrate the NS 32532 chip into its dual-processor CPU board for Siemens' MX line of parallel Unix systems and give Siemens manufacturing rights. Sequent - with \$50m from Siemens in 1986 - now uses the 80386 in its high end.

APOLLO CUTS SERIES 40000 PRICES - ADDS FLOATING POINT AND GRAPHICS OPTIONS

Sun Microsystems' announcement of the 386i workstation last week looks as if it might set off a resume of the workstation price war: this week Apollo Computer announced reductions of up to 35% in the price of its Series 40000 mid-range workstations: the entry level system, with 19 inch monitor and 4Mb main memory now stands at \$8,990. Prices for the colour version begin at \$13,990, a 26% price cut. Apollo's low-end Series 3000 workstations, which include a PC/AT bus, were not reduced in price, but memory and disk prices were cut across both ranges by up to 29%. Along with the announcements, Apollo introduced a floating point co-processor option for the Series 4000, based on the Weitek 3164 fpu chip, and a graphics configuration, including large, high resolution screen and a dedicated graphics processor, claimed to improve graphics performance by up to 100%.

PRIVATE NORTH STAR UNVEILS NEW KIT BUT IS COY ABOUT ITS BUSINESS, BACKERS

Multi-user MS-DOS microcomputer builder North Star Computers Ltd, Hemel Hempstead, Hertfordshire has finally updated its Dimension range with 80286 and 80386-based machines using Novell Advanced NetWare 286. The company will also ship an 80386-based machine running Xenix System V later this year (UX No 175). The 80186-based Dimension multiuser machine was launched in 1984, since when the company claims to have installed 2,000, each with an average of five users, in the UK. North Star keeps a rather low profile and seems happy to continue along the same lines. The privately-held company was set up in 1976 and its American backers are exercising to the full their incorporated rights give little away about their business. UK general manager John Hartnell won't even say who the backers are. He is equally reticent about the market share - such as the geographical spread of turnover across North Star's European and US operations - but claims to rank about third in the small and medium sized UK multiuser business market. The company expects UK turnover of between £8m and £10m during the current financial year compared with £5m last year. And profits? All Hartnell would say was that the UK operation is 'extremely' profitable. North Star has an assembly and manufacturing plant in Cork, Republic of Ireland, where North Star Plc, the European operation which wholly owns North Star Computers Ltd and North Star GmbH - is headquartered. In the past 18 months North Star has moved most manufacturing from San Leandro to Cork where it employs 120 and also has research and development facilities, an indirect sales team and a European support unit. It retains a quality assurance and sales and marketing presence at San Leandro with 50 people.

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OLIVETTI ENDS PACT ALLOWING AT&T TO TAKE STAKE TO 40%

After what were described in Rome as "significant basic differences" between the two companies, Ing C Olivetti SpA said that it would not now permit AT&T to exercise its option to raise its stake in Olivetti SpA to 40% from the present 22%. Under the 1983 agreement, AT&T had an option to take its stake to 40% this year, but the deal was renegotiated in 1986 to put the option date back to 1990. Reports are confused, but it appears that AT&T had wanted a bigger management role in the Italian company, and there were talks about AT&T increasing its stake sooner than 1990. But reports differ on whether AT&T or Olivetti initiated the talks. One version has AT&T pressing Olivetti, saying it was prepared to pay a handsome premium to the market price, another has it that Olivetti wanted AT&T's money. But Carlo de Benedetti, whose Cie Industriali Riunite has control of the board of Olivetti with just 13% of the shares, was unwilling to cede the greater management role - or effective control - for the US phone giant. The Wall Street Journal reckons that the talks about AT&T raising its stake were initiated by Carlo de Benedetti - because at the time he needed additional cash for his less than successful siege of Societe Generale de Belgique SA. But during the course of the talks, he found something else to sell, and anyway was uncomfortable about handing management control of Olivetti over to AT&T. As a result, the two parties parted with those "significant basic differences" between them. The question exercising observers now is whether AT&T will hold on to its present 22% - it bought the shares for \$260m and they are now worth nearly \$1,000m, offering a very attractive capital gain.

bad atmosphere

Olivetti's problem is that on balance it needs AT&T more than AT&T needs Olivetti, since other suppliers could easily be found for AT&T's personal computers, but the business is crucial for keeping Olivetti's volume up and prices down, whereas AT&T has really not got that much to show for the tie. The bad atmosphere between the two partners is underlined by the fact that according to the Journal, while AT&T is saying firmly that the man is absolutely an AT&T employee, Olivetti officials are saying that AT&T Data Systems chief Vittorio Cassoni is simply on secondment from the Ivrea company. At the operational level, Olivetti is unhappy that AT&T has not sold more personal computers in the US, while AT&T is not pleased at Olivetti introducing its Edge Computer-based LSX3000 machines instead of pushing the 3Bs harder, and complains that Olivetti is not responsive enough in shipping personal computers when it needs them. AT&T says it does intend to retain its present 22%, but the disagreements cast doubt on the long-term future of the ties between the two - at present Olivetti manufactures all AT&T's personal computers, and in return markets AT&T's 3B computers and Dimension PABXs in Europe.

MOTOROLA PREVIEWS 68040

With 15 million 68000 family processors installed, Motorola understandably retains its interest in the CISC marketplace, and in order to reassure customers of the continuing development of the 68000, the company has previewed details of its development stage, third generation MC68040 chip, and says that it will not be the last of the line. The 68040, which includes 1 million active devices, has an integer unit rating of 15 MIPS, and floating point performance of 4 MFLOPS. The single chip integrates a 68030 compatible integer processing unit, IEEE compatible floating point unit, independent 8 Kbyte instruction and data caches and a paged memory management unit. Parallel instruction execution is achieved by using multiple independent execution pipelines, multiple internal buses and full internal Harvard architecture, with separate physical address space caches for both instruction stream and data stream access. Bus monitoring hardware will allow the direct support of multiprocessing applications. The 68040 will remain user object-code compatible with previous 68000 family processors. No dates for launch were given.

SANYO TO SECOND-SOURCE, EXTEND, ACORN RISC MACHINE FAMILY

In an endorsement that could transform the prospects for the Acorn Computers Plc ARM Acorn RISC Machine microprocessor, mighty Sanyo Electric Co Ltd of Tokyo signed a second source agreement for the part with its manufacturer, the Tempe, Arizona Application Specific Logic Products division of VLSI Technology Inc. Under the agreement, Sanyo will manufacture and market the 32-bit VL86C010 Acorn RISC Machine chip family worldwide. The second-source agreement covers the microprocessor and three peripheral circuits that are currently in production at VLSI Technology, and future derivatives within the ARM family. A January Dataquest report indicates that the part captured 33% of the RISC microprocessor market in 1987, only a year after introduction - but much of that will have been sales to Acorn for use in the Archimedes home computer. Sanyo will use VLSI's software tools to develop the family further, and will also provide Japanese-language documentation for its home market. The partners also plan new devices, such as laser printer engines, raster graphics and network-specific derivatives, aimed at controller applications that demand high performance at reasonable cost. And as the VL86C010 chip was created with VLSI Technology design tools, it already exists as a core in a cell library. VLSI rates the part at 6 MIPS sustained, 12 MIPS peak, and as it is relatively cheap - it has to be to be used in a £700 home computer - it sees the part being adopted as a cost-effective solution for the real-time embedded controller market. VLSI and Acorn both decline to give details of their financial relationship, except to say that the Cambridge firm 80% owned by Olivetti, gets a royalty on each part.

SYMBOLICS UNVEILS JOSHUA, LANGUAGE ENVIRONMENT

Symbolics Inc, Cambridge, Massachusetts, yesterday announced Joshua, and claimed it to be a breakthrough programming language and software development environment for building expert systems. It also added an object-oriented database system called Static. It looks to Joshua to close the loop between development and delivery of large artificial intelligence systems. The firm says Joshua is a programming language with full Lisp capabilities embedded in an artificial intelligence development environment going far beyond what anyone else has done, and looks to 60% of current customers to want to use it. It will be offered on all Symbolics workstations and on Ivory boards, from June, at \$15,000 per CPU.

SUN, AT&T OFFER TWO SPARC MEMORY MANAGER SPECS

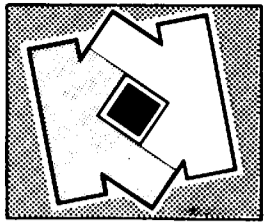
Sun Microsystems and AT&T have released specifications for memory management units for use with Sparc microprocessors. The Reference MMU specification is designed to facilitate development of a range of high-performance single- and multi-chip memory managers and highly integrated single-chip versions of the Sparc. The other is Sun's patented memory manager used in all its systems, and defines an expanded version of the Sun manager. It stores 64,000 simultaneous address translations, 1,000 times more than traditional memory managers. Both will be supported by Unix System V.4 for the Sparc; the Reference MMU is free to Sparc licencees, the second one will be licensed by Sun.COL2

XEROX \$200m PACT WITH SUN

Xerox Corp and Sun Microsystems Inc have a master agreement under which Xerox will buy or manufacture over \$200m of Sun kit over five years.

THORN EMI UNVEILS SN 1000 TRANSPUTER-BASED SUPERCOMPUTER

In the first application of Inmos Ltd technology in one of its products since it acquired the chipmaker in 1984, Thorn EMI Plc last week unveiled a new parallel processing minisupercomputer based on the Inmos T800 Transputer. The new machine is the Parsys SN 1000, jointly developed by Thorn and Inmos with Apor SA of Meylan, Telmat SA of Soultz, the Royal Signals & Radar Establishment, and the universities of Southampton and Grenoble under an EEC Esprit project. The machine is rated at between 25 MFLOPs and 400 MFLOPS, and Thorn reckons it could be extended to 1.5 GFLOPS. Described as a modular reconfigurable processor, the SN 1000 is built up of Transputer nodes, each rated at 25 MFLOPS, under the management of a node controller, and multiple nodes can be interconnected by means of an Outer Level Controller. Each node consists of at least two Transputers, one the "worker", the other the "support" Transputer, the latter handling input-output and control functions, including reconfiguration. The workers each have either 4Mb of dynamic or 256Kb of static private memory, and each node will typically also include a disk server Transputer with 16Mb cache and 100Mb to 200Mb of disk. Separate global disk memory for multi-node machines is also supported. Additional worker boards can be added to each node, and a Tandem Node configuration allows up to 64 workers to be plugged into a double backplane. The SN 1000 is designed to be used as a back-end to a host control workstation, which can be a Sun, an IBM PS/2, an MS-DOS micro or DEC VAX or MicroVAX. Both within a node and between nodes, connections between Transputers can be set under software control using specially designed applications specific chips. The configuration can therefore be altered between tasks or from within an application, and several different applications or tasks can be running concurrently in different parts of the machine. The operating system is Whitesmiths Ltd's Idris slimline Unixlike, which is described as Posix-conformant, or the Inmos TDS Terminal Development System executive with the main operating system running on the host. Languages offered are Fortran, Pascal, C and Occam, and a minimum configuration SN 1000 will be around £35,000. The machine is clearly a long way from being a fully defined and bedded down product, and Thorn is actively seeking partners to exploit the technology worldwide.



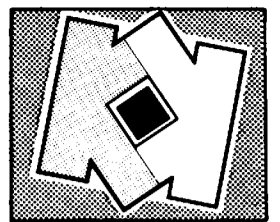
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A symmetric multi-processing version of DEC's Ultrix operating system is a few months away from announcement, the company says.

- 0 -

Apollo Computer Inc has reported first quarter net profits up 61.9% at \$10.4m, on sales up 36.9% at \$168.9m. Net earnings per share rose 61% to \$0.29.

- 0 -

Intergraph Corp has reported first quarter net profits up 70.7% at \$17.1m, on turnover up 36.0% at \$174.7m. Net earnings per share rose 67% to \$0.30.

- 0 -

Motorola Inc has reported first quarter net profits up 103.6% at \$114.0m, on turnover up 26.1% at \$1,950.0m. Earnings per share rose 100% to \$0.88.

- 0 -

Sun Microsystems Inc has reported third quarter net profits up 39.9% at \$14.3m on turnover up 81.3% at \$259.7m; nine-month net rose 62.7% at \$41.2m on turnover up 95.2% at \$686.5m. Net earnings per share rose 34% to \$0.39 in the quarter, 64% to \$1.31 in the nine months. Comparisons are with 1987 figures restated to reflect several acquisitions in the fourth calendar quarter of 1987.

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Unisys Corp has reported first quarter net profits up 35% at \$149.3 on turnover that declined 2% to \$2,370m. Net earnings per share, adjusted for a three-for-two split in July, rose 35% to \$0.77.

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Unisys has one of those proliferating Pentagon Unix pacts: \$17.5m for 112 U5000/80s to automate National Guard Property & Fiscal Offices.

- 0 -

French micro-maker **SMT Goupil** has launched two 80386-based supermicros, the G50 and G100 both to offer Unix System V: the G100 is rated by Goupil at "between 5 and 6 IPS", and employs 5 co-processors to offload the cpu, supporting 42 users - the G50 is an AT compatible running MS-DOS, OS/2, Unix V/386 or Pick.

Bull MTS of France has been tipped to make announcements concerning the convergence of its Unix-based systems with Honeywell Bull during the second week of May.

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Stellar Computer Inc, Newton, Massachusetts, which already has agreement for **Asahi Chemical Industry Co** for distribution in Japan of its graphics supercomputer to industrial users, has won a complementary agreement for ~~giant trading company Mitsui & Co Ltd~~ to market the GS1000 machine to general users in areas like government, research and education: itsui is the second-largest trading company in Japan doing annual business of \$97,000m.

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Although the new Intel 80376 combines the full 32-bit architecture of the 80386 with a 16-bit, it's not the "80388" that everyone has been looking for, and indeed is unable to perform that mythical chip's role as the basis of powerful MS-DOS micros that could be much cheaper than ones using the 80386: the 80376 is designed specifically for embedded control applications, and as well as cutting the number of address lines to 24 - for 16Mb - from 32, it eliminates the three personal computer-oriented modes of the 80386 - real mode, 80286 mode and 8086 virtual mode, retaining only the Unix-oriented protected mode.

- 0 -

The 80376 and its companion 80370 peripheral chip can use most of the design tools, compilers and real-time operating systems implemented for the 80386, and a key attraction for embedded control applications is the price-performance: the parts are \$99 and \$57 in 100-up quantity.

- 0 -

British Aerospace's Military Aircraft Division has ordered a 32Mb NPI from **Gould Computer Systems**.

Three additional board members at **Sun Microsystems** - **Vittorio Cassoni**, president of AT&T Data Systems, **Robert Long**, vice-president and director of corporate planning for small Sun stakeholder **Eastman Kodak Co**, and **Rolm Corp** founder **Kenneth Oshman** - expand the number to nine.

- 0 -

With licences galore wrapped up with the originator of the whole idea, **Xerox Corp**, **AT&T Co** and **Sun Microsystems** really don't have to worry too much about "look-and-feel" suits over their **Open Look** user interface for Unix from **Apple Computer** or anyone else, but they have come up with the odd original idea anyway, such as electronic drawing pins (thumb tacks to our transatlantic cousins) to pin important menus to the screen for further reference, and an elevator to move up or down in the text.

- 0 -

Lotus Development Corp is following up its plans for an IBM mainframe version of 1-2-3 with one for Unix: the new version will be developed alongside 1-2-3 Release 3.0 and will be optimised for use on a variety of workstations under System V, as well as supporting the forthcoming IEEE Posix Portable Operating System, and will comply with standards set forth by the X/Open consortium of Unix system vendors; Lotus says that it will also offer multi-tasking and multi-user capabilities for easy sharing of files and consolidating large spreadsheets and will support three-dimensional and linked worksheets; "robust" external data access; and the extended applications facility; although at the AT&T-Sun meet, it did not actually endorse Open Look.

- 0 -

James Olson chairman and chief executive of AT&T Co died this week, less than a month after he underwent an operation for cancer of the colon: President **Robert Allen** will direct until the board elects a new chairman - Olson, 62, had directed AT&T for 20 months.

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COMPUTER CONSOLES' INGENUOUS RISC IS SPARC ABI COMPATIBLE

Computer Consoles Inc, faced with a market that is fast migrating to other RISC processors, has unveiled its own long-gestating RISC in the Power 7/64 minicomputer series, claimed to offer 25 MIPS sustained performance, 40 MIPS peak. The announcement comes shortly after Unisys and ICL, the two biggest OEM customers for CCI's current Power 6/32 minis, both announced plans to use Sun's SPARC in future products; CCI says it is still talking to both companies about the Power 7. A key feature of the new products, to be introduced in late 1988, is planned to be the ability to run binary applications written for Sun's SPARC Applications Binary Interface, thanks to Hunter Systems Inc of Mountain View, California. Hunter, best known for the XDOS software that allows DOS software to run on 68020 Unix systems, is developing a SPARC-to-Power 7 translator - and CCI says the agreement also covers the possible development of a product that translates 80386 ABI code for the Power 7. The CCI and SPARC architectures are reasonably similar - both are said to be broadly derived from the Berkeley RISC strain - and CCI claims that Power 7 raw performance is high enough that SPARC applications will run "significantly" faster than on a Sun 4/260, even though there may be a 50% performance degradation in the translation process. CCI therefore hopes to be able to continue to position the Power 7 as a high end product in OEMs' product lines. The CCI chipset comprises an instruction processor chip and bus switch chip, and is designed to interface to other floating point processors; the 560,000 device CMOS chips are being built by Performance Semiconductor of Sunnyvale, California, which is also a source for MIPS Computer Systems' processors. Processor cycle times are expected to be as short as 20 nanoseconds - 50MHz, and CCI reckons it can get up to 70MIPS without major architectural changes. Key features are said to be on-chip instruction cache and data cache linked by 512-bit wide data path, 256-bit block memory transfers and 64-bit system bus interface. The new Power 7 architecture is said to support up to four processors, the systems will be source-compatible with the existing Power 6/32 range and to support early development of applications CCI will be providing development tools on the 6/32 in June.

CASSONI TO RETURN TO OLIVETTI

The increasingly stormy relationship between AT&T and Ing C Olivetti took another turn at the beginning of the week with the announcement by AT&T that Data Systems group president Vittorio Cassoni would be returning to Olivetti to take up the post of group managing director. Cassoni, who begins the new job on May 15th, is widely perceived as the man who turned round AT&T's struggling Data Systems business: he will be replaced by Robert Kavner, currently senior vice president and chief financial officer, who will report to AT&T vice chairman Randall Tobias. Cassoni joined AT&T in October 1986 from his position of head of marketing at Olivetti, when according to AT&T's new Chairman Robert Allen "it was understood that he would eventually return to Olivetti". AT&T has benefitted from the closer ties with its Italian partner through Cassoni's reportedly aggressive pricing deals with Olivetti for the supply of PCs: AT&T bought 36% of all Olivetti PCs shipped from 1984 up until the end of last year. AT&T is also hopeful of increasing its links with Italian state-owned telecoms manufacturer Italtel, currently looking for a major partner to help move it into worldwide markets, and feels its Olivetti link might give it an advantage over competitors Ericsson, Siemens and Alcatel. But moves by AT&T recently to increase its stake in Olivetti above the current 22% appear to have been blocked by Olivetti chief executive, Carlo De Benedetti. Kavner said he would be continuing the strategies put in place by Cassoni. "Nobody can isolate themselves in the computer industry anymore. Our relationships with Sun Microsystems, Olivetti and other partners are essential, and I will put my full energy into nurturing those relationships", said Kavner.

DU PONT BUYS BENCHMARK FOR IMAGING TECHNOLOGY

Tiny UK graphics specialists benchMark Technologies Ltd of Kingston, Surrey, has been acquired by the Du Pont Company of Wilmington, Delaware. Du Pont, the world's sixth largest corporation, has taken a majority equity interest in benchMark which will become a subsidiary of Du Pont (UK), but further terms of the agreement were not announced. Du Pont marketing and communications specialist Lynn Powell said the deal was part of its policy to expand its electronic processing equipment aimed at the printing industry. "Up until recently we would have invented the technology", said Powell, "but now we will get it whichever way we can". benchMark equipment will be used for complex colour electronic imaging systems, in conjunction with laser scanning hardware: du Pont currently offers only a black and white system.

CONVERGENT BOWS TO CUSTOMER PRESSURE OVER 68030

Back in October last year, Convergent Technologies was one of those companies most doubtful about the benefits of upgrading its 68020-based systems to Motorola's new 68030 processors: it said that the chip's extra performance would mostly be lost due to the integrated memory management unit, said to be slower than Convergent's optimised MMU for the 68020 (UX No 150). But according to European Vice President Roger Cooper, Convergent has now reconsidered, and is likely to announce adoption of the 68030 over the next few months. "Our salesmen are fed up with explaining why we are not using the 68030", said Cooper, who predicted that the recently previewed 68040 processor would not be available "for at least a year". Convergent, which recently won an OEM deal from Unisys for its Intel-based Server PC range, now has 90,000 systems installed worldwide, or 18% of the total installed base, according to Info Corp's latest figures. It is due to announce extensions to its existing product range in early May.

AT LAST - A SENSIBLE WAY TO RUN MS-DOS CODE UNDER UNIX

If Unix machines are to make serious inroads into the office automation/personal computer market, they will have to run MS-DOS programs efficiently. Until now, a Unix user who wanted to run MS-DOS applications had two choices, neither of them very attractive: use software to emulate the MS-DOS application in the workstation or multi-user computer's Unix environment and watch it slow down to a frustrating snail's pace; or spend around \$2,500 on each workstation for an add-in card containing an Intel 8086 or 80286 processor to run the application.

Now Hunter Systems Inc of Mountain View, California, has come up with a third alternative called XDOS. Unlike an emulator, which runs alongside an application each time it is run, translating it line by line into machine code for the target machine, XDOS uses techniques from the few "smart" optimising compilers to translate the MS-DOS program's binary code into binary code that can run under Unix. This one-time operation converts the application into a Unix program that will run on the target machine as fast or faster than the original MS-DOS program would on a personal computer. A front-end processor in XDOS performs a global-flow analysis - a technique to discover and describe the logical structure of a program - on the MS-DOS application and determines how it uses the operating system and hardware before converting the program into a Unix application. This is then passed to a machine-specific back-end (currently for the Motorola 68020, with two RISC versions in the pipeline) which executes the program in the Unix environment. Hunter Systems president Colin Hunter refused to comment on suggestions that he was producing a SPARC- CCI RISC translator. However he said that translating from RISC architectures could be somewhat simpler than translation from CISC. Translating to RISC has some technical advantages, but they are usually cancelled out by the added problems caused by other architectural features.

A conventional emulation runs alongside the application, generating 68020 instructions for every MS-DOS instruction. Because it evaluates the application one line at a time in real-time, it has to generate a lot of unnecessary 68020 instructions - as many as 15 target instructions for every instruction in the MS-DOS application.

For example, the global-flow analysis can intelligently evaluate whether to evaluate the condition codes and flags that are set after some instructions. By working through the logic of the whole program, XDOS can determine which will be referred to later in the program and which are not referred to again and can be ignored. An emulator that evaluates code line by line has to translate them all just in case they are needed later. An arithmetic or logical operation can produce a number of results - overflow, a zero result, a negative or a positive result. Each of these conditions sets a flag which the application can refer to later in the program after the instruction has been executed. Most of the time, however, the flags are not relevant to the program and will never be examined.

When an application programmer writes an add instruction he or she may never examine the flags after the operation - if the result does not affect the flow of the program, there is no need to look at the flags. Global-flow analysis looks ahead in the program to determine which flags, if any, are checked after each operation. If none are checked, none are simulated in the target code; if one or more are checked (or may be checked, depending on the outcome of a branch condition) only those that are relevant are simulated. An emulator, however, has no way of knowing which may be checked later in the program, so it has to assume the worse and simulate all the condition codes and flags after each operation. As an application may contain a large number of these operations so the emulator will soon run out of registers to hold the flags. It must then create and protect a large area in the memory to hold all the flags and condition codes, the vast majority of which will never be referred to.

Another example of how the global-flow analysis makes the XDOS code more efficient is by determining when to compensate for differences in the machine-level programming conventions on the 80286 and the 68020. On the 80286, a move instruction does not change the flags when it is executed. But on the 68020, a move instruction sets all flags to zero. A program emulating the 286 on the 68020 will have to save all the flags because it will have no way of knowing whether one or more of the flags will be tested by a later instruction. After the front-end processor has converted the code into binary code for the 68020 it still will not run as it has no idea what hardware is used in the system and how to address it, and it still makes system calls to DOS, BIOS and PC hardware. The back-end processor takes care of these tasks. Each hardware system implementing XDOS must have its own back-end to direct the system calls to their Unix equivalent in a special library. According to Colin Hunter the library contains functions that emulate the three elements of the operating system with which the DOS applications usually interact during execution. "When the appli-

writes a bit pattern to the control register of a device, the back-end processor knows what the application is attempting to perform because of the previous global analysis," Hunter says. "It accesses the library function that provides the Unix resource to perform the function most efficiently. "Mostly what the back-end processor does is redirect the DOS call down to the appropriate Unix resource. As a result, the overhead associated with XDOS is small. Instead of simulating the whole behaviour of the device, we're just mapping it down into Unix."

Running the MS-DOS code through the front-end is a one-off operation that takes around 5-10 minutes, but it produces a Unix application that can be used any number of times and be shared by all the users on the system. The first front-end produces 68020 code, but work is underway to produce back-ends for two unnamed RISC processors. XDOS is being licensed to OEMs at a suggested price of between \$425 and \$2,000 depending on the size of the system.

OEMS SUPPORT MICROSOFT'S OS/2 LAN MANAGER

Microsoft Corp has revealed the names of 29 OEM customers that have committed to licence its OS/2 LAN Manager software. Speaking at the second Microsoft Advanced Network Development Conference in New York recently, the company's vice president of systems software, Steve Ballmer, said that a total of 35 companies now had licencing plans for the MS OS/2 LAN Manager, which IBM is implementing as its own LAN Server due out in November: at Uniforum earlier this year communications companies 3Com, Excelan, Digital Communications and Torus made announcements, and Hewlett Packard Inc said it was working with Microsoft to port the LAN Manager onto Unix servers (UX No 166). That product, LM/X, is still under development according to Hewlett Packard, although potential customers are numerous amongst the list of customers who will licence the LAN Manager: Alcatel, Alloy Computer Products, Apricot, AT&T, BICC, Bull, Cogent, CMC, Convergent, Corvus, ICL, Madge Networks, Micom, NCR, NEC, Nixdorf, Nokia Data, Olivetti, RM, Retix, Siemens, SMT Goupil, Standard Microsystems, Tandem, Televideo, Toshiba, Ungermann-Bass and Western Digital. Ballmer said that the LAN Manager's standard network transport protocols would ensure that LAN Manager networks from any OEM would remain compatible with all other versions. Five other vendors - Apollo Computer, Compaq, Tandon, Wyse and Zenith - announced support for the LAN Manager without disclosing specific intent to licence the product.

BONAR AUGUST LAUNCHES FAULT TOLERANT CS3000

UK-based Bonar August Systems Ltd - the subsidiary of Low and Bonar Plc that arose from the ashes of fault tolerant supermicro manufacturer August Systems Inc - has launched its first general purpose commercial computer system, the CS3000. The machine, which has been in development since 1985 uses triplicated 68020 processors, VME Bus and two operating system kernels; the pSOS real-time system from Plessey and a source compatible UNIX environment. The hardware implemented fault tolerant voting architecture and fault tolerant clock allows the three processors to vote, in hardware, on all read/write operations from and to a triplicated bus. Interface cards connect the bus to VME Bus input/output sub systems, though other buses can also be accommodated. According to BAS, the approach offers higher reliability at a lower cost than the traditional approaches of dual and hot standby systems: any element can be replaced while the system is online, with no performance impact, according to the company. Target applications are real-time tasks such as communications and switching systems, air traffic control, industrial control and defence, although standard Unix application software can also be used on the system. The CS3000 is rated at 2 MIPS, and offers 32 Mb memory and a range of storage and communications interfaces via the VME Bus. Systems may be configured with one or two processing units, up to eight I/O bus adaptor boards and I/O chassis.

SMT GOUPIL ENTERS MINICOMPUTING MARKET

French PC manufacturers SMT Goupil says that it has a 1988 income forecast of over one billion French francs, putting it on course to achieve its aim of being amongst the top six European computer manufacturers by 1991. But although the company is already the second largest French industrial group in the computer sector, export business amounted to only 11% of turnover, up from 8% the previous year. Now the company has embarked upon an increased emphasis on exports, coupled with new products in the microcomputer and minicomputer field. Last week in Paris, Goupil showed off two new systems, the G50 and G100, designed to take it into the departmental systems business. The G50 is an AT-compatible 80386 processor, with 80387 and Wietek co-processor options, with up to 16 Mb RAM and 32 Kb cache memory. Based on the existing G5 micros, the G50 can be configured as a workstation, LAN server, or as a Unix or Pick server with up to 17 terminals. Goupil also launched its G100 minicomputer, the result of its acquisition last year of Svena DSI. Goupil has developed the Svena systems to run Unix V.3, though it also offers a configuration running Svena's proprietary Meteor operating system to serve the existing 3,000 strong user-base. The G100 is also 80386/80387-based, but includes up to five auxiliary 80186 processors to off-load mass storage, terminal connections, network communications and telecommunications, security and remote maintenance. The system has up to 16 Mb RAM, 64 Kb cache, and supports Multibus. Goupil has put together its GNA (Goupil Network Environment Architecture) to support Ethernet, Starlan, MS-DOS and NETBIOS standards within an OSI framework. Also announced was a 20 Mhz version of Goupil's G5 supermicro, offered with MS-DOS, OS/2, Pick or Unix 386, and a new flat screen portable, the Golf. Systems should be available by September. The UK office says it is looking for OEM and distributors for the G50 and G100, which should cost around 5-7,000 (G50) and 10-14,000 (G100). Goupil says it will not attempt to sell to the US market until it has achieved a strong enough position within Europe.

ICL COMMITS TO SUN MICROSYSTEMS' SPARC FOR FUTURE UNIX MACHINES

ICL has become the latest major manufacturer to commit itself to Sun Microsystems' Sparc processor for its next generation of Clan departmental Unix systems, due out in the early 1990s. Peter Cunningham, ICL's Departmental Systems Strategy Manager, said that the Sun product "fitted in with ICL's open systems strategy". The company will design and manufacture its own systems using Sparc, and anticipates a fourfold performance increase over similarly priced systems today. Existing Clan systems will continue to be developed, said ICL, and will co-exist with the new systems. Sparc products will be aimed particularly at public service organisations throughout Europe, and ICL says it is already working with other "significant" European vendors that will be adopting Sparc technology. At present, ICL's Unix machines come from Datamedia Corp, in which the company has a 16% stake, and from Computer Consoles Inc - and the decision to go for the Sparc looks like bad news for the latter, which is developing its own proprietary high-end processor to top off its line of Unix systems.

TANDY'S PS/2 CLONE FEATURES SCO XENIX

Tandy Corp last week duly announced its high-speed clone of the IBM PS/2 Model 80 80386 box, called the 5000MC and features 32Kb high-speed cache memory controller. The desk-top machine will be offered with Santa Cruz Xenix V.386, MS-DOS 3.3 and OS/2, is \$5,000 with 2Mb 20MHz CPU, 1.44Mb 3.5" floppy and five Micro Channel, two 32-bit memory slots. It costs \$6,500 with 40Mb, \$7,000 with 84Mb Winchester. Adaptec rushed out an announcement that the machine uses three products from its Micro Channel family of controller boards and host adaptors to boost input-output performance of the machine. The three are the ACB-2610, a Micro Channel-to-ST412/506 MFM controller, claimed to be 50% faster than the Micro Channel; ESDI; and SCSI.

APOLLO FINDS SEVENTEEN MORE PRISM SUPPORTERS

Apollo Computer Inc's recently-introduced advanced PRISM architecture and Series 10000 Personal Supercomputer received another major boost with the announcement of support from 17 additional hardware and software suppliers. These companies join 20 other firms that announced their support at Apollo's introduction of the Series 10000 a month ago. The companies are committed to integrating Apollo's new Personal Supercomputer into their product lines, offering their applications on the new system, or providing other software/hardware support. The 17 companies announcing their support today are: Analogy Inc; Analytical Methods Inc; Calma Co; Oracle Corp; Agave; ESI; Framasoft; Paris VII University; Kongsberg Navigation as; MapTech as; Veritas Sesam Systems as; BYG Systems Ltd; Patec Ltd; IBZ Digital Productions GmbH; and T- Program GmbH; Belsim; and L.T.A.S.

MCDONNELL BRINGS OUT NEW SERIES 19 PICK REALITY LINE

McDonnell Douglas Information Systems has replaced its M6000 and M9000 computers, designed to run the company's Reality super set of the Pick database operating system, with a new Series 19 that comes in nine models. The range grows from a 15-user tower system to a top-end machine with support for 600 devices. The UK is the company's biggest market, so appropriately, the new line was jointly designed by teams here and in the US, the UK doing the baby CPU and networking.

£5,000 BATTERY-POWERED 80386 LUGGABLE HEADS ZENITH LAUNCH

Zenith Data Systems yesterday announced its new SupersPORT family of laptops and luggables, headlined by a weighty 80386 machine that runs Xenix as well as MS-DOS. The range consists of the Supersport, SupersPORT 286 and TurbosPORT 386 using the 80C88, 80C286 and 80386 processors respectively. The SupersPORT XT-alike comes in two versions, the Model 2 with twin 720Kb 3.5" drives while the Model 20, as the name suggests, is fitted with a 20Mb 75mS access hard disk and one floppy. The 80C88 is switchable between 4.77MHz and 8MHz with zero wait states. The slower speed is claimed to be more important in prolonging battery life rather than purely to ensure compatibility. The machine comes with 640Kb of RAM as standard expandable to 1.64Mb with EMS and the screen is a CGA Supertwist backlit LCD Screen. Zenith claims the SupersPORT 286 and 386 to be the first lap-tops in their class to be battery-powered, largely made possible by its decision to use LCD technology rather than take the gas plasma route favoured by main rival Toshiba Corp. The AT-compatible 286 machine is switchable between 6MHz and 12MHz with zero wait states and is supplied with 1Mb of RAM expandable to 2Mb - EMS and extended memory addressable, one 1.4Mb 3.5" floppy drive and a double scan CGA supertwist backlit LCD screen. 20Mb or 40Mb 28mS access hard disk options are available. While the XT and AT compatible SupersPORT machines are outwardly identical the 386 is very different and much more angular in appearance with a detachable keyboard. This and its 18 lbs weight makes its claim as a lap-top much less credible and puts it much more in the luggable class. It is switchable between 6MHz and 12MHz, with zero wait states and is supplied with 2Mb RAM expandable to 3Mb, one 1.4Mb 3.5" floppy drive and the same 40Mb disk. The display is described as a high contrast "paper-white" backlit LCD screen. Interestingly in demonstration the display was very reminiscent of a piece of parchment, rather patchy in places depending on the level of brightness used. The whole range comes with DOS 3.21, Rechargeable NiCad Clip-on battery backs and mains charger-adaptors with built-in overcharging protection and 110/240 volt autosensing, making the machines portable anywhere in the world. The SupersPORT claims a useful battery life of four to five hours, the 286 three hours and the 386 two hours, although this model has a "fastcharge" facility which allows recharging in two rather than the normal eight hours. Both the 286 and 386 machines will run under MS-DOS, OS/2 or Xenix operating systems and are claimed to be the first portables to use zero wait state technology. Other innovations include advanced power management which optimises battery life by conserving power while the computer is switched on but is not being used. Prices quoted are £1,395 for the Model 2 and £2,595 for the model 20 with the 286 priced at £3,995 and £3,195 respectively for the 20Mb and 40Mb versions - limited availability mid-May. The TurbosPORT retails at £4,995 and arrives August or September.

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UNIFY CORP ESTABLISHES UNIFY EUROPE BRINGS HEADQUARTERS TO THE UK

Relational database software and Unix-based applications development tools supplier Unify Corp, Sacramento California is setting up a European holding company - Unify Corp Europe and is relocating its European headquarters from Enschede, Netherlands to Egham, Surrey. The new company will control Unify's present UK operation, Unify Corp Ltd in Egham, Unify VB in Enschede - which also currently houses the company's European headquarters - and Unify GmbH, Munich, which opens next month. It is also relocating its Benelux head office in the Netherlands from Enschede to Utrecht. Unify Europe will also take charge of strategic marketing throughout Europe with joint ventures and distribution in countries where it does not have a subsidiary. Unify is also hoping to raise funds in Europe - it will consider both equity and loan capital funding, including traditional bank borrowing - for joint ventures with local software houses to develop building block applications for users of the Accell applications environment. Negotiations with two UK software houses are under way. The company said it may also consider making acquisitions. The company is also setting up a reseller network in countries where it has established subsidiaries. Unify opened its UK office in 1986 and claims to have established that there is a strong European market for its products. According to European vice-president Paul Beard, the company aims to double its European business each year for the next three years and ensure a ten-fold turnover increase over the next five years, doubling its European workforce to 30 this year, and growing it to 90 within five years. It wants its European operations to account for about 30% of turnover - it refused to give a geographical breakdown of the company's recent performance but said turnover during the past financial year reached \$20m. Unify Corp has a total of 15 offices and 14 regional distributors

up in 1980 by a three-man team which used the C language and tools used to develop a blood bank analysis system for a pharmaceutical company to develop the Unify database and four US venture capital organisations currently have shareholdings in the privately-held company.

SILICON GRAPHICS GETS 3D IRIS 4D DOWN TO \$50,000

Silicon Graphics Inc has brought the entry price for a RISC-based three-dimensional workstation down to \$50,000 with launch of the Iris 4D/50. The station combines 8MHz MIPS Computer RISC with Silicon's Geometry Engines, and is rated at 7 MIPS. \$49,900 buys 8Mb CPU, 8 colour bit planes, 170Mb disk, Ethernet and 19" 1,280 by 1,024 screen.

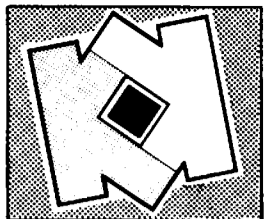
MASSCOMP GUARANTEES 5ms RESPONSE FOR ITS REAL-TIME UNIX WITH NEW 6000 SERIES

After announcing 68030 upgrades for its 68020-based customers last October Masscomp has now launched its 68030 range, the 6000 series. Additionally the company claimed the first guaranteed response time for Unix: 5 milliseconds but an average response of 1 millisecond. Masscomp has also introduced its Super Lightning floating point accelerator - a VLSI chip-set consisting of a proprietary floating point interconnect chip and a Weitek 3164 adder/multiplier chip - which is integrated on 6000 boards, priced at £2,280.

Four new systems comprise the new Masscomp line-up: the MC6300, MC6400, MC6600, and the MC6700 in configurations ranging from a 7-slot pedestal to 30-slot cabinet systems. The 6000 series supports a binary compatible multiple processor architecture with multiple floating point and vector accelerators, multiple graphics seats and optional data acquisition subsystems. The 6300 is the 7-slot pedestal version configured with one or two 68030s sharing a high speed 64Kb physical cache, one or two optional Super Lightning accelerators, 8Mb parity memory, SCSI interface, Ethernet controller and four RS232-C serial ports with prices beginning at £18,900. The 6400 is packaged in a rack-mount configuration with six 9U VME slots and six 6U VME slots and is configured similar to the 6300 with an entry-level price of £21,900. The 6600 is available as pedestal or rack-mount systems with 15 slots and up to three 68030s. Each processor supports 64Kb physical cache, one 68882 floating point co-processor and an optional Super Lightning accelerator. One 14MFLOP vector accelerator per processor is also supported. The 6600 will support up to three Multibus I/O channels, one or two optional VMEbus modules, and one or two optional STD+Bus data acquisition buses. Prices for the 6600 range from £32,300 to £59,200. The top-of-the-range 6700 is packaged with 30 slots supporting up to five 68030s, each with its own 64Kb cache, 68882 floating point co-processor and an optional Super Lightning floating point accelerator. With up to four vector accelerators, four Multibus I/O subsystems, two VMEbus I/O subsystems and two data acquisition subsystems. Prices range from £44,800 to £91,200.

BELL RINGS IN TITAN FOR UK

Gordon Bell, father of the VAX range now president of R&D at Ardent Computer, performed the honours at last week's UK launch of the Titan graphics supercomputer. Last month saw the US launch (UX No 170) of the 64-bit parallel vector machine and the company is now claiming around 50 purchase commitments from customers, with ten of those in Europe. First customer shipments begin next month in the US and June in the UK. European customers are in the fluid dynamics and computational chemistry fields. BioDesign, Wavefront Technologies, Princeton University and Cham Ltd have signed up to join the Ardent Application Alliance to port software to the Titan.



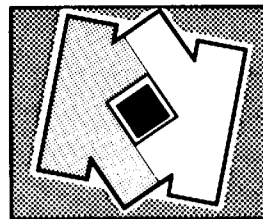
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Shedding a little more light on the architecture for DEC's next generation of machines - believed to be substantially different from that of the VAX family - chairman Ken Olsen said last week that "Digital Equipment will not launch a computer based on RISC, but the idea of executing instructions by means of very numerous small steps influences little by little all that we do"; on the subject of Unix, Olsen declared that "Unix will never be a universal operating system", and that although it supported Unix, and 30% of VMS applications were also available under Unix, an "overwhelming majority of our users still select VMS for most of their general-purpose applications".

Alliant Computer Systems Corp has reported first quarter net profit down 62.3% at \$927,000, including a tax credit of \$116,000 and an extraordinary credit of \$617,000, against a figure that includes a tax credit of \$871,000, on turnover up 12.9% at \$13.6m. Net earnings per share fell 61% to \$0.09.

Altos Computer System has reported third quarter net down 79.3% at \$600,000, on turnover up 5.9% at \$42.8m; net profit for the nine months rose 37.9% to \$9.1m, including a gain of \$3.1m from sale of an investment, on turnover up 14.8% at \$130.2m. Net earnings per share were down 76% at \$0.05 in the quarter, but rose 44% to \$0.72 in the nine months.

Amdahl Corp has reported first quarter net profits up 71.0% at \$43.2m on turnover that rose 15.4% to \$367.6m. Net earnings per share rose 59% to \$0.81.

AT&T Co has reported first quarter net profit up 10.6% at \$492.0m, on turnover that was up 2.8% to \$8,349.0m. Earnings per share rose 15% to \$0.46.

Convergent Inc has reported a first quarter net loss of \$4.3m, down from a loss last time of \$23.9m, on turnover that was down 7.7% at \$92.7m.

Valid Logic Systems Inc, San Jose, California, has acquired the integrated circuit computer-aided design unit of General Electric's Calma Inc for an undisclosed sum: the business did \$40m in 1987, and has some 2,700 users - against sales of \$67m for Valid, which has 4,500 users - Calma will now concentrate on three-dimensional design for the mechanical, architectural, engineering and construction industries.

Western Digital Corp, Irvine, California and **Columbia Data Products Inc** of Altamonte Springs, Florida have joined forces to introduce a microprocessor-based Fasst hard disk and tape drive controller board line for AT-alike machines: claimed to achieve a host data transfer rate of over 5Mbytes-per-second via parallel processing techniques, the direct memory access controllers are designed for applications such as database and computer-aided design, and for machines running Xenix and Unix; the 7000- Fasst is out now in the US with SCSI interface; no price was given.

Computer Consoles Inc saw first quarter net up 287.2% at \$3.2m, including a gain of \$1.3m from early repayment of debt, on turnover up 10.2% at \$39.2m. Net per share rose 300% to \$0.24. Figures reflect a change in accounting for income taxes.

Informix Corp has reported first quarter net profit up 14.2% at \$2.5m, against a figure that includes an extraordinary credit of \$414,000, on turnover up 98.2% at \$25.8m. Net per share rose 5% to \$0.20.

Massachusetts Computer Corp, Masscomp, has reported third quarter net profits down 84.8% at \$250,000 against a period that included a \$580,000 tax credit, on turnover down 6.1% at \$19.1m; nine-month net fell 29.3% to \$2.5m after tax credits of \$100,000 this time, \$1.3m last, on turnover up 9.1% at \$58.4m. Net earnings per share fell 82% to \$0.02 in the quarter, 30% to \$0.16 in the nine months.

A remarkable achievement comes from Nixdorf Computer AG which reckons it sold 1,000 of its Targon Unix machines in 1987, so that the line, built from ground zero in little over two years, is now a very substantial business.

Microsoft Corp has reported third quarter net profits up 95.3% at \$37.3m on turnover up 64.5% at \$93.9m; nine-month net rose 71.9% to \$93.9m on turnover up 70.8% at \$420.3m. Net per share rose 91% to \$0.67 in the quarter, 70% to \$1.68 in the nine months. Without new stock option plans, profits this time would have been about 7% higher.

Pyramid Technology Corp has reported second quarter net profits up 373.0% at \$2.0m, on turnover that rose 50.0% at \$18.9m; mid-term net profits rose to \$3.8m, up from \$73,000 last time, on turnover up 47.8% at \$36.4m. Earnings per share rose 380% to \$0.24 in the quarter, \$0.46 from \$0.01 in the half.

Sequent Computer Systems has reported first quarter net profit up 33.3% at \$1.1m after tax credits of \$160,000 this time and \$178,000 last, on sales up 88.6% to \$14.2m; net per share was flat at \$0.14.

Zenith Electronics Corp says it is disappointed at a decision by Standard & Poor's Corp to lower the ratings on its senior debt to single B plus from double B plus, and on its subordinated debt to single B minus from double B minus: the decision affects about \$190m of Zenith debt and was made because, says Standard & Poor's, the company's consumer electronics business is unprofitable, and it is making insufficient margins in the Data Systems division to sustain cash flow and capital structure, limiting the company's flexibility of action.

AT&T Co this week appointed Robert Allen chairman and chief executive to succeed the late James Olson.

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BULL REPLACES ITS UNIX LINE WITH INTEGRATED DPX RANGE

09 MAJ 1988

ALTOS WINS \$15m OEM DEAL FROM CCI

Amidst a barrage of announcements this week, Bull SA has introduced a new generation of Unix products with which it aims to capture up to 12% of the European Unix market by the early 1990s. The ten systems come in five model types. The DPX 1000 is a workstation competitor with Sun's 3/60, according to Unix product line manager Bruno Fonpaine, and is aimed at software development and AI applications. It is 68020 based with 64Kb cache memory, X.11 windows, and includes the Emerald distribution and object oriented toolkit environment, designed for managing large software products, which originates from Smalltalk technology developed at PARC with further funding and development from Esprit. The DPX 2000 range are general purpose multi-user systems supporting from 2-32 users, also 68020-based, and with a range of ISO and IBM communications options and support for Ethernet, Starlan, and X.400 networking. The DPX 3000 systems are aimed at transaction processing applications and can be configured as non-stop fault tolerant boxes, with up to three 68020 processors per system, and with up to eight systems connected together, operating under a single distributed operating system: these result from technology licensed from Tolerant back in July last year (UX No 137). Finally, the DPX 5000 Series are RISC-based systems originating from Ridge and re-named from the existing SPS 9 systems. Bull says it has implemented a common operating system and compilers across the full range of computers: the Spix implementation of Unix is V.3 with Berkeley extensions, and Bull says it is X/Open compliant and will support Unix V.4. TCP/IP and NFS are included with all products. Prices range from 50,000 francs for the low-end diskless workstation to 1 million francs for the 128 user DPX 5000. Fonpaine said the systems would replace existing Bull Unix product lines.

Altos Computer Systems has won a deal said to be worth \$15 million over the next three years for the supply of its Series 1000 systems to Computer Consoles Inc of Waltham, Massachusetts. CCI says it will use the 80386-based systems as an entry point to its Power range of systems, and will be offering OfficePower, its integrated office automation software along with the new systems. Meanwhile, the company revealed its anticipated drop in earnings (UX No 173), with third quarter profits down by 79% to \$600,000, compared with \$2.9 million in the same quarter last year: it blamed the fall on a "softness" in US sales, and on the introduction of the Series 1000, which began shipments only in March.

AND BULL LAUNCHES JOINT VENTURE WITH HONEYWELL BULL

Although the new Bull SA products are intended only for the Bull European markets, which do not include Italy and the UK where the existing XPS systems will continue to be sold, the two companies took the opportunity to formally announce a joint company named X3S (Societe Internationale de Systemes Standards). First mooted at the end of last year, the purpose of the new venture is to provide a single line of Unix products, likely to be announced between 18 months and two years time, according to Bruno Fonpaine. The agreement does not involve NEC, which has a separate deal to converge its mainframe systems with Honeywell Bull.

NATSEMI QUASHES RISC RUMOURS

National Semiconductor has denied reports that it is developing a RISC processor due to be launched next year. Hans Rohrer, director of European microprocessor activities, was said by the Financial Times to have revealed plans for the new chip at a press briefing last week. However, the company says it is not developing any such product, and that Rohrer actually said that the RISC elements already included in its NS32532 chip "would be perpetuated in future product developments, which would remain fully compatible with existing products".

CONVERGENT DEMANDS ATTENTION WITH NEW PRODUCTS

The Convergent Technologies Inc subsidiary of Convergent Inc yesterday made a series of hardware, software and business announcements intended to transform the market's perception of the erstwhile highflyer which has been struggling to regain momentum after a severe setback three years ago. On the straight Unix systems front, Convergent announced the a new entry-level model for its S/Series family of Unix workgroup servers and two enhancements to the line. The new S/80 is aimed at installations with up to 16 users and joins a family that extends to support up to 128 users. The two S/Series enhancements are a new memory board storing 8Mb and 16Mb, and the previously released Remote I/O Processor, already reported. The latter increases the number of RS-232 ports to 256 from 12 on the S/120 and to 512 from 22 on the S/221 and S/222 using twisted-pair wiring. The S/80 is built around a 16.7MHz 68020 with the company's proprietary paged memory management unit, and in base configuration includes eight RS-232 ports, cartridge tape drive, 2Mb of memory and 40Mb to 320Mb of disk and the machine runs under CTIX. The new machine brings the entry price for an S/Series CTIX machine down to that of 80386-based micros running with Xenix. Volume shipments are due to begin in July.

HAMILTON GROUP STILL ANGRY

Industry rumours that Hamilton Group dissidents Apollo, DEC and Hewlett Packard were near to revealing an alternate Unix standards strategy to AT&T were denied this week by Hewlett Packard. But a separate report from Computer Systems News suggested that an AT&T move to appease the Group by offering to form an OEM user group with special access to Unix developments had been rejected as "inadequate".

DATA GENERAL PINS HOPES ON 88000 FOR SUCCESSFUL TRANSITION

Until recently, Data General appeared to be the least promising candidate among the major mini manufacturers for a successful transition to a new generation of systems and long-term growth. The company's promised new product line, built round the Motorola 88000 processor, is its hope for changing that perception and last week, at a conference nicely timed to coincide with the announcement of a return to profitability, the company put some flesh on the previously announced bare bones of the strategy. The new "standards based" Unix product line - which will also support the VMEbus- is due to make its first appearance next year, although the centrepiece of the range, the 100MIPS ECL processor being developed with Motorola in the chipmaker's new MCA 4 technology, is not due until 1991.

purest adherence

Without the hint of a smile, the company said distinguishing features of the range would be "the purest adherence to standards" in the industry as well as the breadth of the product line. Nevertheless, the company anticipated a set of migration tools for users of the proprietary MV range that included common compilers, data management and office automation. With a claimed 250,000 end users of the CEO office automation system, it seems likely that CEO - or a third party package adapted to look like CEO - could be a major sales tool for DG in future; and even if new users end up being locked into CEO instead of into a proprietary operating system, at least the purity of standards adherence within DG's product line will have remained unsullied. In addition to its agreement with Motorola, the company looks set to forge plenty more alliances in order to bring the product line to market; it was hinting at symmetrical multi-processors running fault-tolerant Unix, real-time Unix kernels, and networks of graphics workstations and servers used for software development. Indeed, it seems not unlikely that the company could begin reselling complete 88000-based products manufactured elsewhere, although DG's insistence that it would continue in its time-honoured style of "aggressively undercutting" other players suggested that it would continue to do as much manufacturing as possible, albeit with an approach of using relatively high-level building blocks. In particular, the market still lacks a manufacturer of 88000-based workstations with the OEM channels and experience to do much damage to Sun Microsystems' SPARC sales. No major RISC product discussion nowadays is complete without a few swipes at Sun and the SPARC, and DG said that because the SPARC does not integrate cache and memory management on-chip, "it was unlikely that shrink-wrapped applications will run across different vendors' implementations of SPARC". To emphasise the importance of binary compatibility, the company added that it scrapped its own RISC development - which produced a chip that did

some 16MIPS - because it saw it would stand no chance of producing yet another binary standard. Despite the suggestion that in the long term, DG expects most of its money to come from the Unix line, the company said that it already has the next two generations of proprietary MV processors under development and expects the vast majority of its revenues to come from proprietary products over the next two to three years. After 20 years of being perceived as an OEM supplier - and a spectacular failure to compete with IBM and DEC as a full scale systems supplier - DG has levered itself into a position where end user sales are only marginally less than OEM sales, and revenues from servicing end users equipment are again close to the volume of third party sales. It says it expects the balance to continue, and points out that an increasing proportion of revenues are coming from Europe - some 30% this year, expected to be in the \$400m range following a 1987 contribution of \$350m. Revenues for the second quarter fiscal 1988 were \$349m, up from \$315m a year previously; net income was \$17.2m compared with a loss in second quarter 1986 of \$42.6m. Aside from 1987 extraordinary losses and 1988 tax credits that were partly responsible for the contrast between the two quarters, the company said factors in the improvement were cost cutting measures and increased shipments.

ebullient financial theme

Continuing the ebullient financial theme, the company said gross margins for the first two quarters of fiscal 1988 were up to 48%, from an average of just over 40% between 1984 and 1986. Next year, Data General's large OEM deal with Nippon Telephone and Telegraph should begin to bear fruit; the deal, which followed DG's acquisition of US telecommunications company Dama and the T1 digital switching technology it had developed, is due to result in a range of voice+data ISDN products to be introduced by NTT from next year. Initially the products use DG's proprietary MV minis but are expected to shift to 88000 processors and Unix in future. DG, which boasted that it had "met all milestones" in the development, said that negotiations had already started with "Major telecommunications organisations especially in Europe" about potential sales of the NTT products. Despite the optimism, however, DG personnel admitted that the company's effectiveness in putting the new products and strategy in place over the next two years are crucial to its chances for survival. Unlike rival Prime Computer, which has used bought-in technology and company acquisition to entrench itself more firmly in niche markets, DG appears to hold out hopes of success as a broadly-based supplier of general purpose systems. One alternative is that with a standard Unix-based product line in place, the company could itself at least become a more attractive candidate for acquisition.

HP LEADS RUSH FOR DEC EMULATION FROM BOSTON

Hewlett Packard is taking every opportunity to fight its way into DEC territory since it extended its workstation and minicomputer ranges last month: the latest move is to licence Boston Business Computing Ltd's DEC compatible software products for the HP 9000 range running HP/UX. HP systems will now support Boston's VCL emulator of the VMS Digital Command Language, and EDT+, which emulates the VAX EDT editor. The products are designed to allow DEC users to convert to Unix systems without having to learn a new Unix text editor or commands. At the same time Boston announced OEM deals from Encore Computing, Scientific Computer System (SCS) Corporation and Cydrome Inc: Encore will include the products as part of its "VAX compatibility suite" on its Multimax machine; SCS says the products will be used on Sun Microsystem front-ends to its SC-40 entry-level Cray-like supercomputer; and Cydrome will use the products for its Cydra 5 parallel processor, which is sold on by Prime as the MXCL 5. Other vendors using the tools are Alliant, Celerity, Convex, Gould, IBM, Multiflow and Sun Microsystems - not forgetting DEC itself which uses them for its Ultrix-based VAX systems.

DEC AND IBM LOSE OUT AT SAS INSTITUTE UNIX LAUNCH

At last year's annual SAS Institute European User Group meeting in Switzerland (UX No 124), the company announced its intentions to introduce Unix versions of the SAS System - popular amongst IBM mainframe users under MVS and DEC VAX users under VMS - by the end of 1987. In the event, the launch was held back to until users met for their 1988 meeting, held last month in Copenhagen. Conspicuously absent, however, was any mention of an Ultrix implementation for the VAX, promised to users last year along with the Hewlett Packard version now available. The move to Unix was prompted by the SAS Institute's major re-write of the SAS system, converting it from a mixture of PL1 and assembler language into C, which is part of the company's new multi-vendor architecture (MVA) strategy designed to speed up development of ports to new hardware. First fruits of MVA are SAS Version 6.03 on IBM compatible PCs, and the Unix port to HP's Motorola-based 9000 Series 300. A port to the Precision Architecture Series 800, using HP's Spectrum RISC chip, is also ready and should be released by the Summer. SAS for Ultrix and for Sun workstations were also high on the list of users wants, according to head of Unix development Carl Zeigler: the Sun versions for both Motorola and SPARC-based systems already advanced due to the similarities with HP technology. IBM's AIX, is currently not being considered according to SAS President and founder Dr James Goodnight, and Zeigler confirmed that the company's Unix development would be tied up with existing work "for at least the next year". Meanwhile HP will be using SAS as a further element in its aggressive push to win customers from DEC and IBM: it claims that the SAS system runs at double the speed of a comparable VAX configuration. The SAS system includes a base data management analysis and reporting tool with presentation graphics and menu-building tools above. The company claims it has installed software in 35,000 sites worldwide, and has a turnover of over \$135 million.

IBM BELIEVES IN UNIX, IS COMMITTED TO OPEN SYSTEMS - REALLY, TRULY IT IS

IBM is clearly worried about the way its Unix strategy has been greeted with a certain amount of scepticism from the press, so when ever members of the Unix development team are allowed out of the labs they are wheeled out to explain IBM's real intentions to journalists. In March, Unix guru Andrew Heller did the rounds to clarify Big Blue's attempts to position its AIX Unix implementation as a parallel "strategic platform" alongside its proprietary Systems Applications Architecture product lines. Last week, Jerry Latta, Group Director of Technical Computing Systems and Clay Cipione, Manager of Advanced Systems Development at the Entry Systems Division in Austin, Texas were visiting Europe and saying much the same thing. "We're only two years into the development of the 6150 - that's 1983 in PC terms", said Cipione, claiming that the clock speed of the RT's chip would be boosted up beyond the current 10MHz in future announcements, allowing the RT to compete more favourably with other RISC-based hardware. The announcement of the AIX "family definition" earlier this year, clearing the way for near identical AIX implementations on the PS/2, 6150 and 370 Series, has generated a greater response than expected, according to AIX/370 Development Manager Tom Dow. "There is a pent-up demand for main frame Unix, particularly as a server for departmental Unix systems". With a variety of hardware platforms underneath AIX, IBM is not surprisingly luke-warm about the issue of binary compatibility, with Latta claiming that "we already have what 99% of users care about with a consistent user and programmer interface across the platforms: the success of Unix has been based on source level compatibility". Latta also said that IBM would be in a position to reveal its policy on a graphical user interface for AIX "within the next few months", and also promised announcements on "second-generation RISC technology", but would give no dates. Meanwhile, IBM would be grateful if everyone would please stop doubting its whole-hearted commitment to open systems. "The market's no longer trivial", said Latta, "and our customers - and non-customers - want IBM to play".

FUJITSU'S SPARC TAKEN BY VALID

Fujitsu's implementation of Sun Microsystems' SPARC, Scalable Processor Architecture, has been taken up by Valid Logic Systems. Valid has announced a hardware development support toolset consisting of hardware models of the MB86900 SPARC integer unit and MB86910 floating point controller for use with Valid's Realchip II and Realmodel hardware modeling system. When used in Valid's EDA environment, the Valid toolset will provide engineers with the ability to design and simulate systems based on Sun Microsystems' high-performance SPARC architecture, without having to partition system designs for simulation or wait until behavioral models are available. Separately Valid announced that Sun Microsystems has signed a contract to purchase Valid's end-to-end electronic design automation systems for printed circuit board and systems design. The contract is estimated to exceed \$1 million. With Valid's Access software configuration program, Sun will configure a design environment in which each application software package becomes a network resource for each user.

NEW CPUs FOR OLD: HEWLETT UK GOES TOUTING FOR USED VAXes

Hewlett-Packard Co is so determined to demonstrate the extent to which it has been able to improve priceperformance by its migration to reduced instruction set Precision Architecture that it is making DEC VAX and PDP users in the UK an offer it hopes many will feel unable to refuse: buy one of our HP9000 Series 800 Unix machines and we will give you a generous tradein price on your old DEC hardware. The offer will run for six months from May 1, and suggests that a firm should be able to move from a 1 MIPS VAX11/780 to a 14 MIPS 9000/835 for a net capital cost of just £50,000 and save £18,000 a year on maintenance to boot. It has identified the estimated 10,000 PDP11s and 5,000 VAX11s and MicroVAXes in the UK as prime targets, and to reassure users that they have made the right choice, will offer 90day side by side operation of new and old systems, and a training and consultancy package. The idea is a UK initiative but if it is successful will no doubt be picked up by the company's subsidiaries in other countries. And no, Hewlett doesn't have a major landfill project earmarked for deep sixing the DEC iron - the machines will go to a used computer broker, not to a breaker.

UNISYS INTRODUCES NEW SERVICE FOR UNIX USERS

A Starter Plan has been introduced by Unisys Corp for new US users of its 5000 and 6000 series. The package is intended to accelerate the transition from hardware installation to effective system use and enhance the operating system's, Unix System V's, appeal. The U Series Starter Plan specifically calls for active user participation during system setup. Because users are key players in the installation process, they quickly become familiar with the operating system and can operate their systems efficiently in short space of time. According to Unisys the Plan is implemented in five phases: taking customers from an initial review of their order, software levels, system hardware and operating system requirements through to a post-installation session where we recommend any possible changes or improvements that might enhance customer operating procedures. This phased approach is based on Unisys Professional Project Practices (PPP), a family of business methodologies, techniques, and tools used by Unisys to ensure smooth systems installation.

TANDEM COMPUTERS REVEALS PLANS TO ANSWER TO IBM'S PS/2 STRATEGY

Revealing some of the thinking behind its acquisition of local area network equipment specialist Ungermann-Bass Inc, Tandem Computers Inc has been saying that it is planning to move some of its key transaction processing software down to personal computers running the OS/2 operating system, and to this end has taken a licence for Microsoft's OS/2 LAN Manager. The move will put the Cupertino fault-tolerant minimaker into head-to-head conflict with IBM, which has similar plans for tying networks of PS/2s into its mainframe DB2 relational database system. According to Computer Systems News, Tandem's plans for distributed transaction processing involve using its NonStop machines as specialised back-end processors, also handling functions like network administration, and include adding fault-tolerant features to LAN Manager networks. Tandem's file transfer software and PC6530 terminal emulation software will be reimplemented for machines running OS/2.

STRATUS PREVIEWES WORKSTATION ARCHITECTURE

Meanwhile Tandem's arch-rival Stratus Computer Inc has announced a similar strategy with a preview of a concept it calls Stratus Workstation Architecture. Designed to integrate the company's XA2000 Continuous Processing Systems into networks of workstations and personal computers, the Architecture will support TCP/IP and interfaces to Sun Microsystems' Network File System, Apollo Computer's Network Computing System, and implementations of IBM's Token Ring, LU6.2, NetBIOS and Microsoft's MS-Net. Sun's NeWS Network-extensible Window System and Apple Macintoshes will also be supported. Stratus has also chosen the Sybase relational database from Sybase Inc as the basis of its new SQL/2000 system for building on-line transaction processing applications. The components of this include SQL Server and DataWorkbench versions of Sybase DataServer and DataToolset, plus DB-Library, Open Client Connection and VOS Server.

APOLLO APPLAUDS STRATUS PORT

Apollo takes the view that the Stratus port of NCS is an important development because Stratus systems are used in many environments perfectly suited for network computing applications. Apollo says that with the Stratus NCS port, software applications can be developed that share the compute power of Apollo workstations and Stratus's XA2000 Continuous Processing Systems, utilizing the best features of each system for specific tasks. For instance, with NCS, a broker can use an Apollo workstation to graphically display and analyze the up-to-the-minute market data and profit/loss positions captured by a Stratus system. The broker can manipulate data, ask "what if" questions and see the graphic results in real time. Chicago Research and Trading Group Ltd (CRT), one of the world's largest exchange-based options trading firms, plans to use NCS over its Apollo and Stratus equipment. At CRT, Apollo workstations will act as trading stations, while Stratus OLTP systems will store financial and historical data.

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CONVERGENT ADDS 80386-BASED SERVER PC, SUPPLIES COMPANY LEASING VENTURE

The new Server PC Model 100 is an entry-level extension of the Convergent Server PC product family based on the Intel 80386 processor, and is designed for first-time network installations. The Model 100 is designed to support workgroups of from four to 16 MS-DOS or terminal users within a Unix multiuser environment while also running MS-DOS applications. The Server PC family uses SCSI- interfaced storage devices, and runs either the CTIX/386 version of Unix System V or native MS-DOS. Merge 386, which integrates MS-DOS with Unix, is also supported for character-based applications. The Model 100 comes with 2Mb to 12Mb memory, four to 28 ports, and from 40Mb to 400Mb of disk. A new release of the Server PC operating system, CTIX/386 Version 2.0, extends communications to TCP/IP, IBM SNA and BiSync, and Convergent's PC Exchange. It is being supported by Unify Corp and Data Access. Model 100 shipments begin in the third quarter and the CTIX/386 Version 2.0 release is available now.

Formation of Convergent Supplies

Convergent Inc has created another new business, Convergent Supplies Co as an operation within its Convergent Business Systems Inc unit. Headquartered in San Jose with a forms design centre in Hunt Valley, Maryland, Convergent Supplies began operations on March 1 by mailing 12,000 marketplace-customised supplies and forms catalogues to users of the companies within the Business Systems camp. "The new company was profitable in its first month," said general manager Ken Frost. "More supplies products will be offered as our operation expands. We also are developing reseller programmes for Convergent Technologies Inc distributors, resellers and buying groups." The new unit joins Convergent Service Co, offering round-the-clock customer service and Convergent Leasing Co.

General Electric Credit leasing deal

Looking to offer more comprehensive lease finance services to its customers, Convergent has gone to General Electric Credit Corp, Stamford, Connecticut for a "full-featured leasing programme tailored for Convergent Business Systems companies. Although the programme will initially be confined to the in-house companies, it is expected to evolve, over time, into a service for all Convergent value-added-resellers. "This is the first of a series of financial service programmes to be offered by Convergent," the company said. "When the series is complete, we will provide all of our resellers the opportunity to offer specialised financing at competitive prices."

Electronique Marcel Dassault signs up

And Convergent Technologies Inc has found another blue chip OEM customer in France in the shape of Electronique Serge Dassault SA of Saint-Cloud Cedex, which has signed for the Server-PC Intel-based Unix product line. Dassault, which reckons that Unix is now a strong factor in the French market, looks to the relationship to take it into the Unix market, and plans to add value to the PC Server with communications software and specialised applications development. Electronique Serge Dassault is a \$900m company founded by Marcel Dassault, the French aircraft manufacturer, and is itself best known as a manufacturer of automatic banking terminal and cash-handling equipment, but also makes products for the postal services, telecommunications, trade, government administration and transport sectors. The companies did not reveal the dollar amount nor the length of the new agreement, and Convergent Technologies did not put prices on any of the new products it announced yesterday.

High C, Professional Pascal

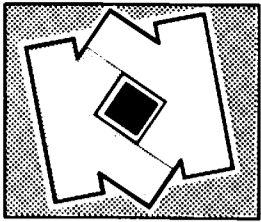
Convergent has gone to MetaWare Inc, Santa Cruz for High C and Professional Pascal compilers for its CTOS-based systems, enabling applications written in C or Pascal on MS-DOS and Unix machines to be transferred to the CTOSes.

ENCORE ADDS ANNEX II

Adding to its Ethernet and TCP/IP terminal server product line Encore Computer Corp has introduced Annex II. Available as either a 32- or 16-port unit, the Annex II incorporates added performance and installation ease for Unix and non-Unix applications - at a lower cost per port than ever before, claims Encore. The Annex II was originally designed to front-end Encore's Unix-based parallel processing computer system. The Annex II incorporates a National Semiconductor 32016 processor and an Intel 82586 Ethernet controller and a larger memory space than the Annex I, providing as many as 256 sessions; a new rack-mountable chassis design for ease of installation; and the use of 50-pin "telco" electrical connectors for port connection, providing a standard way to interface to a variety of systems. Priced at \$8,500, the Annex II terminal server yields a per-port price of \$265 for the 32-port version, and is available for customer shipment immediately. Already Annex II units have shipped in volume to several major customers.

GIGALOGICIAN FROM DAISY SIMULATES 96,000 TO 256,000 PRIMITIVES

GigaLogician, a new high-performance hardware accelerator for the mixed-level simulation of large electronic system designs, has been introduced by Daisy Systems Corp reportedly capable of simulating designs of 96,000 to 256,000 primitives. The company claims, however, that the GigaLogician architecture is designed to accommodate designs of 1 million to 3 million primitives. The GigaLogician uses a multiprocessor parallel architecture that uses two distinct types of processors for simulation. Hardwired processors accelerate switch- and gate-level simulation tasks. Microcoded (software) processors accelerate both behavioral simulation tasks and input from Daisy's physical modeler, PMX, which fits directly into the GigaLogician chassis. The base configuration of the GigaLogician comes with one hardwired processor and two microcoded processors. Each hardwired processor can simulate 64,000 switch- and gate-level primitives at up to 1.75 million evaluations per second. Each microcoded processor can simulate 16,000 behavioral and physical modeler primitives at 100,000 evaluations per second. The GigaLogician is a network resource in Daisy's computer-aided engineering environment. The base configuration of the GigaLogician is priced at \$180,000. Each additional hardwired processor is priced at \$45,000 and each additional microcoded processor is priced at \$20,000. The GigaLogician will be available in August.

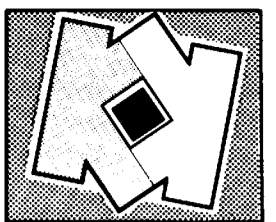


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NCR Corp accompanied launch of a new 9800XP application processor for its 9800 family of fault-tolerant mainframes - offering threefold better performance - with a C compiler and C Runtime System for the 9800: the latter has over 100 Unix routines in it, facilitating the transfer of Unix applications to the VRX or VRX/E operating systems.

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Terry Booth, managing director of Cincom, said that there will be announcements regarding Unix and support for SQL within Supra later this year.

- 0 -

Continuing budget constraints mean that US government spending on computer and communications equipment and services in the fiscal year to September 1989 will grow only 4.3% to \$17,500m according to consultants Federal Sources Inc of Vienna, Virginia - but that will be an improvement on the current year, when the outturn is expected to be a rise of only 1.2% - a far cry from the double-digit growth of the early years of the Reagan Administration.

- 0 -

Sanyo Electric Co's interest in the Acorn RISC Machine microprocessor, on which it has signed a second source and design agreement with primary supplier VLSI Technology Inc, San Jose, is very specifically for the 32-bit microcontroller market: it sees the low-cost ARM as an ideal embedded processor for use in the automotive industry, for which Sanyo can now offer only 4- and 8-bit microcontrollers.

- 0 -

Seems Sony Corp the News-NWS1800 versions of its workstations using the 68030 microprocessor internationally before they were announced in Japan: the line includes the NWS1830 with 158Mb disk, available October at \$30,500; and the NWS1850 with 286Mb disk, and a 225Mb tape streamer, from July 21 at \$37,600: Sony hopes to sell 8,000 of its workstations this year, about 30% being the new models; the NEWS-OS 3.2 operating system incorporates Unix 4.3 BSD, X-Window 11 and Sun's NFS.

The receiver from Peat Marwick McLintock installed at Whitechapel Workstations Ltd last week says that he still hopes to sell the bankrupt East Ender as a going concern, the receivership comes just under two years after the company was reorganised after a receiver was installed at its predecessor, Whitechapel Computer Works - six employees now remain holding the fort at the stricken company, which did not succeed in getting its new MIPS RISC-based workstation off the ground and has been overwhelmed in the price-cutting war between the US players.

- 0 -

Grid Systems Corp has already announced Xenix for some of its laptop computers, but now reports its OEM contract for the Xenix System V software with Santa Cruz Operation Inc: the specially configured two-user versions are \$435 for the 286 machine, \$535 for the 386; development systems are \$595 and \$795 respectively and the MultiView multi tasking windowing environment \$495.

- 0 -

Cray Research Inc this week unveiled what it described as an Extended Architecture series of supercomputers to replace the X-MP line - the new models use new 2,500 macrocell array technology and offer four times the memory of existing X-MP systems at about the same price: the company says a four-processor X-MP EA model has been running at its Mendota Heights base since January - ships of the \$2.5m to \$14m boxes start next quarter.

- 0 -

Mountain Computer Inc last week announced that its FileSafe line of 60, 150, 300 and 600 megabyte tape backup systems for IBM PS/2 computers are now compatible with SCO (The Santa Cruz Operation), Xenix 286 PS/2 and SCO Xenix 386 PS/2 operating systems: nearly every FileSafe model is available in both internal and external configurations, with prices starting at \$1,395.

Symbolics Inc this week accompanied news of its pact with Sony Corp with the announcement that it plans to divide its current operations into two divisions: systems and software, doing the rearrangement over several months - the systems division will provide symbolic processing hardware, the Sony News workstations, and personal computers, and will also provide systems integration and consulting services, and will be based in Chatsworth, California - the software division in Cambridge will inter alia focus on expanding the range of hardware that can use the Ivory symbolic co-processors.

- 0 -

Intel Scientific Computers is forming a European Development Centre for Parallel Supercomputing at its European headquarters in Swindon, Wiltshire: a 320MFLOPS iPSC/2-VX Hypercube at the centre will support Sun-3 workstations, and will be available to software developers.

- 0 -

Further endorsement for the Motorola 88000 RISC comes from Informix Software Inc which has announced that the availability of its range of relational DBMS software ported to this architecture will coincide with the availability of the RISC 88000.

- 0 -

Scientific Computer Systems Corp and Computer Associates International Inc, have signed a joint marketing agreement that will make CADISSPLA and CA-TELLAGRAF programmable and end-user graphics systems available on SCS supercomputers - under the terms of the agreement, SCS has non-exclusive, worldwide marketing rights to the Computer Associates products on the SCS family of 64-bit, Cray X-MP/416-compatible supercomputers.

- 0 -

Sun Microsystems Inc has formed a wholly owned subsidiary responsible for providing sales, service and marketing support to its customers in the People's Republic of China, Hong Kong, South Korea, Taiwan and Southeast Asia, named Sun Asia Group.

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MIPS CUTS SOFTWARE COSTS IN BID FOR RISC BUSINESS

Well aware that its current position as one of the few RISC vendors with an established product line available is fast slipping away, Sunnyvale, California-based MIPS Computer Systems is doing all it can to strengthen its market foothold before rivals Motorola and Sun come fully on stream. Last month (UX No 173) the company launched its software buying consortium, Synthesis Software Solutions, to encourage a faster transfer of third party software products onto the MIPS hardware base. Now Synthesis has announced price cuts of between 40% and 90% on products from Applix, Network Innovations Corp, Relational Technology, and Unify Corp, and says more announcements are to follow: price cuts have been matched to typical prices of minicomputer software installations, and have been cut to a level more comparable to microcomputer level, according to MIPS: the prices are for any MIPS-based hardware product (although there may be a few exceptions) and are not tied to a set number of users. Jamie Muir, Managing Director of MIPS Computer Systems Europe said that the aim was to reduce software prices in line with falling hardware costs. "We have to match the price of the product with the price of the software. According to Muir, price reductions were possible due to the increased volume commitments Synthesis was able to make with software vendors. Meanwhile, software vendors were distancing themselves from the move. "As an OEM, Synthesis is free to price the products as it likes", said Steve Nilan, Marketing Communications Manager of Unify Corp. And John Butler, Marketing Manager at Applix Inc said he had been unaware of the move, and thought it unlikely that the increased interest in binary compatibility across chip families would have a long term effect on software pricing. "Despite the general trend, I don't see the price falling far for leading edge software", he said.

AND LAUNCHES 12 MIPS OEM BOX WITH ORDERS WORTH \$8 MILLION

MIPS has expanded its systems product line with a new 12 mips multi-user system aimed at oems, said to reduce the price per mip to \$2,500 in typical configurations. The M/120 users the MIPS R2000 chip set running at 16.7 MHz, and base configurations include 128 Kb instruction and data caches, R2010 floating point co-processor, 8 Mb main memory, four serial ports, SCSI controller, 328 Mb disk, cartridge tape, Ethernet controller and four PC AT bus slots. Price is \$30,000, but a 9 mips model using the 12 MHz version of the cpu is also available at \$26,500. For its OEMS, MIPS has added a variety of configuration options to the box, including main memory expandable from 8 Mb to 48 Mb in 8 Mb increments, and storage options up to 1.95 Gb. An Ethernet controller is included. Typical 12 mips configurations with additional 16 Mb memory cost \$43,000; with 32 Mb and 1 Gb disk the cost is \$66,000. Software includes the MIPS RISC/os Unix operating system, a suite of optimising RISC compilers, development tools, communications software and support for Ethernet, TCP/IP and NFS. Initial customers include Ardent Computer, Comperex in Australia, High Tech Systems of Denmark, Kubota Ltd and Marubeni in Japan, and Computer FX, Racal Redac, Silicon Graphics and TIS Ltd in the UK. The machines are available 60 days from placing the order. Further hardware announcements, including a 20 MIPS R2000, are expected in June.

IBM, DEC ALTERNATIVE UNIX STRATEGY "OUT IN TWO WEEKS"

As briefly reported last week (UX No 178), rumours are growing that the remains of the Hamilton Group, including Apollo, DEC, Hewlett Packard, and now it seems IBM, are planning an alternative Unix standards strategy, opposed to the AT&T/ Sun bid to tie all Unix variants together with System V.4. No conformation can be obtained from any of the parties involved, but industry watchers report numerous East Coast meetings planning the move. Reports appeared on Monday in the Boston Globe, and were followed up by the Wall Street Journal, slating the launch for next week. But analyst John McCarthy from Forester Research said that the event had now been put back a week "in order to drum up some international support".

NEW MINI FROM AT&T

AT&T's Comdex announcements included a 10Mbit version of the StarLAN network and a new top end processor for the 3B2 range, the 3B2/700, that is said to handle 80 users and to take performance up to a potential 9MIPS. The machine provides 5MIPS in its basic configuration with one 22MHz WE32200 processor: adding one, two or three WE32100 processors takes performance to 7.5, 8.5 and 9MIPS respectively. The boards are also available as field upgrades for the 3B2/500 and 3B2/600. Prices for the 3B2/700 range from \$69,000. AT&T also announced several SCSI peripherals for 3B2s, and a "maintenance" release of System V for the processors, System V.3.2 - which does not include the Xenix compatibility expected with System V/386, Release 3.2 - whose features include a menu-driven, multi-window file and directory management system, Framed Access and Command Management, and file system enhancements. The new features are available as V.3.2 for the 3B2/300 and /310 in June, as V.3.2.1 for the 3B2/500, /600, and /700 in July. AT&T also announced the expected 10Mbit version of the StarLAN local area network for twisted pair, coax and fibre connections: in addition release 3.0 of the StarLAN software is said to halve network response times and to utilise OSI protocols up to the transport layer. Other new products included a low-end 80286-based PC, the 6286, which is \$3696 with 40Mb disk and \$2796 with 20Mb, and a faster version of the 6386 with 20MHz processor.

QUEST GROUP TAKES WHITECHAPEL STAKE

Quest Group Plc, primarily an integrator of peripherals for personal and home computers these days, has bought some of the assets of Whitechapel Workstations Ltd from the receiver. Nobody was available at Quest for comment as we went to press, but the company has reportedly committed to provide support to the existing users of Whitechapel's NS32016 and MIPS RISC-based kit for five years.

RISC VERSUS CISC - THE DEBATE CONTINUES

Last month, figures from Chicago-based performance analysts Neal Nelson & Associates appeared to show that reduced instruction set processors, specifically the SPARC from Sun Microsystems, could sometimes run commercial applications more slowly than established complex instruction set chips like the Motorola 68020. Geoff Conrad looks behind the methodology.

Everyone now recognises that comparing machines by MIPS ratings can be misleading, but the way they are compared can be even more misleading. The comparisons by independent performance analysis Neal Nelson and Associates (UX 173), from Chicago, Illinois, illustrate this perfectly. Nelson compared the Motorola 68020-based Sun 3-260 workstation with the SPARC-based Sun 4-260 and, by carefully choosing his tests, made the 4 MIPS Sun 3 run 50% faster than the 10 MIPS Sun 4, and concluded that all RISC machines are unsuitable for multi-user business applications. An example of the Nelson technique is the test where "all calculations operate on two main fields in the memory, and place the result back in main memory. It is significant that this memory to memory math is very common in commercial applications, and yet Sun has been aggressively promoting the SPARC chip to manufacturers who have a predominantly commercial customer base."

The result of this test was that the SPARC (Sun's Scalable Processor Architecture Reduced Instruction Set Computer chip) machine performed 32-bit integer math one third slower than the Motorola 68020 CISC (Complex Instruction Set Computer) workstation.

This certainly appears to be an unfortunate result for the SPARC. But is it a fair comparison? The SPARC, like other RISC chips, does not do calculations this way, while the CISC Motorola 68020 does. It is like racing a supersonic jet plane against a sports car on the ground, and then claiming that the car is the faster machine.

When the SPARC does a calculation, the compiler has already placed the operands into its registers, and in a single cycle the chip performs the calculation and places the result in another register, and the compiler then writes it back to memory while chip carries on calculating.

load and store

With 120 registers, the cpu has to wait for the register to be loaded from memory less than 1 per cent of the time. Each load and store takes 10 cycles, and a typical instruction mix (allowing for branch misses as well as loads and stores, and a one-cycle execution) means the average number of cycles per instruction is around 1.4. The Nelson test forces two loads and a store for each calculation, giving 31 cycles per instruction instead of 1.4, making the machine 22 times slower than it would be operating normally. Presumably he used similar sorts of tests to produce the figures that have several basic disk I/O functions operate more slowly on the Sun 4, despite its larger disk and faster access time.

typical mix

Nelson also gives some doubletalk about RISC and CISC machines in general. He notes that in a CISC machine simple instructions execute ten times faster than complex instructions and from this draws the conclusion that it could be described as either all simple or all complex instructions. Only an "independent performance analyst" could make this

statement, as everyone else uses a "typical" instruction mix. This still allows some massaging of the figures with the definition of "typical", but nothing as blatantly unreal as Nelson's figures.

He does note that "before the advent of RISC" most people used an instruction mix. He then implies that RISC MIPS are false because they measure register-to-register instructions that execute much faster than CISC instructions, a fact he seems to regard as cheating. But that is precisely why RISC machines were designed to operate on registers, ideally in a single cycle. While complex mathematical functions may take several RISC instructions to execute, and the occasional unavoidable loads and stores take a large number of cycles (10 on the Sun 4 SPARC), he maintains, incorrectly, that this is not taken into account in their MIPS rating. The SPARC performs register-to-register operations in one cycle, but a "typical" instruction mix brings the average number of cycles per instructions up to 1.42. With a cycle time of 62 ns, this translates into 11.36 MIPS, making the Sun 4-280's rating of 10 MIPS on the conservative side.

As a final non-sequitur, Nelson claims that the only applications that could benefit switching from CISC to RISC are those that explicitly use registers extensively, while those that do not may actually slow down on a RISC machine. This is nonsense, as the RISC's use of registers is totally transparent to the user and program - they are allocated by the compiler and are not available explicitly to the application. Every program compiled to run on a RISC machine must use the registers because most of the RISC instructions will only act on operands placed in the registers.

So, although Nelson's figures have been used by competitors of Sun in both the RISC and non-RISC fields, it may be that performance evaluations of RISC and non-RISC architectures can become every bit as confusing and doubtful as the MIPS game.

FIRST SUN SHARE SALE TO AT&T WILL NET IT \$40m

Sun Microsystems Inc has activated the agreement under which it can ask AT&T to buy up to 15% of equity in new shares, asking the telephone giant to buy 879,947 shares for a net total of \$40.6m. The sale will give AT&T 2.45% of Sun's equity and is at a 25% premium to the market price. AT&T is free to top up its holding by buying up to 5% of Sun in the open market for a maximum of 20%. Sun says it wants AT&T's cash this time to bolster working capital and increase its capital base. Showing the flag for Open Systems - and, more to the point, trying to drum up interest for Enterprise Networking Event '88 International show in Baltimore, Maryland, June 5 to 9, executives from 12 major computer and communications vendors - AT&T, CDC, Data General, DEC, Hewlett-Packard, Honeywell Bull, IBM, Sun Microsystems, Telenet, Unisys, Wang Labs and Xerox - shared a platform in New York this week to announce that they will support the Open Systems Interconnection standard as the way they will manage multivendor networking today and in the future: the 12 represent more than 80% of computer and communications products and services sold in the US - and all have previously said they back the OSI standards.

TEXAS INSTRUMENTS ADDS LOW-END 80386 UNIX BOXES

The Texas Instruments' Data Systems Group added two more 80386-based systems to its low-end Unix range on Friday. Joining the existing System 1300, introduced last May, is the 16MHz SP1000 and 1200 syst ems: the SP1000 is a desktop machine for up to 16 users, with interleaved memory expandable from 1Mb to 9Mb, and 48Mb or 87Mb disk options, priced from £6,600; the System 1200 is for eight to 24 users and has 8Kb cache, 2Mb RAM and 48Mb, 87Mb, and 140Mb disk options with prices starting from £11,600. The machines are priced at the same levels as the current 80286-based Series 1000 and 1100 systems, and use TI's System V-compatible operating system based on Xenix 386 from the Santa Cruz Operation: the company says it will continue to offer the 286 systems for users not ready to move to full 32-bit architecture. Both are available immediately. Also announced was a new operating system, System V release 2.2, for the Motorola-based System 1500 multi-processor, which supports extended symmetric processing, and according to Texas eliminates the bottlenecks that occur under the systems master-slave architecture. Further additions to the top end of the range are also in the pipeline.

FLOATING POINT-CELERITY ACQUISITION DEFINITIVE

Floating Point Systems Inc, Beaverton, Oregon now has a definitive pact for its proposed acquisition of the assets of multiprocessor Unix systems builder Celerity Computing Inc, San Diego for about \$3m in cash and shares (CI No 910). Celerity's key asset is a new 64-bit CPU development - but it ran out of cash before it could launch.

SILVAR-LISCO HAS VERSIONS OF AVANT GARDS

FOR APOLLO, SUN, DEC WORKSTATIONS

Integrated circuit layout software developer Silvar-Lisco Inc has introduced a "vendor-independent" layout systems for the design of large gate arrays and dubbed it Avant Gards - Advanced Gate Array Design System. Silvar-Lisco claims that the software can design arrays of over 150,000 used gates, at densities never before achievable and it can use sea-of-gates and three-layer design styles. By vendor- and technology-independent Silvar-Lisco means that buyers are no longer captive to a single foundry. It is fully integrated with Silvar's integrated circuit layout computer-aided engineering software products and can be customised to for special technology or foundry requirements. Avant Gards will operate on DEC, Sun and Apollo equipment and is integrated with Silvar-Lisco's other chip design software which include design capture, logic design verification, design layout and design verification. Avant Gards will be out in 60 days.

LOTUS JOINS X/OPEN SOFTWARE COUNCIL - JAPANESE LINKS GROW

X/Open has announced that two more software vendors have joined its independent software vendors advisory council; they are Lotus Corporation and ASCII Corporation. Lotus, which revealed the development of a Unix version of its 123 spreadsheet at AT&T's Open Look launch last month (UX No 175) joined the council because it considers the X/Open Common Applications Environment "the most cost effective way to tap into the open systems market", according to Lotus president and CEO Jim Manzi. The firm's involvement alongside existing member Microsoft Corp means that X/Open can now boast the support of the two largest worldwide software vendors. ASCII Corp is the first Japanese X/Open partner, and its involvement follows a recent fact finding visit to Japan by X/Open executives Geoff Morris and Mike Lambert. According to Lambert, the purpose of the visit was "to establish significant information exchange agreements in advance of the setting up of more formal relationships". An application for full X/Open membership from a Japanese hardware manufacturer is apparently still under consideration, according to Morris.

NEW MICRO, SECURE UNIX FROM HONEYWELL BULL

Honeywell Bull is to show a new low-end microcomputer at the European Unix Show in June; the X-15 is a 68020-based system, upgradeable through the range to the X-40 top-end system, and priced at around £6,500, with 2 Mb memory, 72 Mb hard disk and eight user ports. A typical four user hardware configuration for wordprocessing, says the company, would cost under £10,000, with the option to add four more terminals for an upgrade. Also at the show, Honeywell Bull will be previewing the C2 classified version of its ongoing secure Unix development, which is aiming for an eventual B1 classification.

HIGH LEVEL HARDWARE LAUNCHES TOP-END ORIONS

Oxford manufacturer High Level Hardware has wheeled out larger multi-user configurations of its Intergraph Clipper-based Orion 1/05 mini. A configured 32-user System 32 starts at around £30,000, a 64-user System 64 starts at £50,000-£60,000. System 32 comes in four models, starting with the System 32A with Clipper CPU rated at 5.2 MIPS, 1MFLOPS floating point unit, 8Mb memory, 4MB memory used as i/o buffers, 335Mb disk, 43Mb cartridge tape, three 12-line multiplexors and licence for the Berkeley 4.2-based OTS operating system. The two System 64 models include 0.5" tape drive; System 64A has 24Mb memory, 8Mb i/o memory, two 355Mb disks, 64 ports and tri-density tape drive.

CUBIX CORP ADDS 80386 -BASED SYSTEMS - ACQUIRES IMS

Nevada-based Cubix Corporation, which under the name LS Technologies claimed sales of around 25,000 TurboDOS systems, has now released the 80386-based version of its Cubix system, available immediately. The Cubix 3 comes with from 4-16 Mb memory, up to 2200 Mb disk storage and 125 Mb tape, and floppy disk in two sizes. It runs Unix System V.3 and supports up to 32 users, offloading the main cpu with direct memory controllers for serial I/O. An external SCSI port allows connection of optical disk and magnetic tape drives. Entry level price in the UK is 12,000. Cubix is bundling JSB's Multiview windowing software onto each system; other software includes Informix, Oracle and Dataflex, plus office automation software from Quadratron and Uniplex. Cubix also offers C, Cobol and BASIC languages and 3270 SNA, X.25 and Ethernet communications facilities. CubixNet, based on Intel Corp's ISO/OSI Open-Net product, allows the connection of PCs running MS-DOS to the host computer. Cubix Corp recently acquired Los Angeles-based Intercontinental Micro Systems and has taken on its range of Quicklink add-on boards: these currently provide network slots on a PC to link other PCs or low-cost terminals to the host, running Novell NetWare, but a spokesman said the company was "working to integrate the products more closely with our existing systems".

NCUBE AIMS HYPERCUBE AT TRANSACTION PROCESSING

Beaverton, Oregon based NCube Corporation is to introduce a Unix front end to its concurrent processing hypercube systems by June, and is working on a database management software system in order to push its high performance systems into the commercial transaction processing market. According to NCube's John Palmer, the company will add the facility to front-end NCube systems either with a Sun workstation or DEC MicroVAX: "we think Sun will represent the standard Unix", said Palmer. The NCube system is based on proprietary 32-bit "VAX-style" complex instruction set processors, which are linked together to form the hypercube. NCube's maximum configuration, the Ncube/ten is described as a ten dimensional hypercube: each processor is directly connected to ten of its neighbours, which results in a maximum of 1024 processors in a tightly integrate topology. ~~Each processor has its own local memory and direct memory addressing link to ten other processors.~~ The result is a stand-alone system running the Axis Unix-like operating system. Palmer claims the Ncube is more powerful than bus-based parallel processors from Sequent and Concurrent, with maximum configurations rated at 500 MFLOPS or 2000 MIPS. The smallest NCube system is a four node board to fit inside a PC AT: up to four boards can be added at a cost of from \$20,000 to \$60,000. Then comes the Ncube 7 with from 10-128 nodes (\$100,000 - \$400,000), and the NCube 10 with from 64-1024 nodes, costing from \$200,000 to \$2 million. NCube employs 30 staff and was established back in June 1983: and says it has been profitable since it sold the first NCube system at the end of 1985. There are now around 100 systems installed, and the company is beginning to set up European distributors, including Arrow Computer Systems Ltd of Epsom, Surrey in the UK. Although most systems have so far been sold into the scientific and technical markets, Palmer says it is the company's aim to have produced "the highest performance database transaction processing system within a year".

ENCORE DEVELOPS RISC PRODUCTS FOR LATE '89

Encore Computer, of Marlboro, Massachusetts, which to date has built its Multimax systems round the National Semiconductor 32000 microprocessor family, is looking to introduce its first products based on the Motorola 88000 processor in late 1989, and will target them at customers in scientific and technical markets such as simulation and image processing. Encore has also signed Berita Information Systems as exclusive Malaysian distributor for its Multimax range under a three-year agreement valued at \$5m. BIS, based in Kuala Lumpur, will also sell Encore's Annex terminal servers and has already installed a Multimax at the New Straits-Times press of Malaysia.

68030-BASED SYSTEM FROM BLEASDALE

UK computer manufacturer Bleasdale Computer Systems - most recently in the news when Optim took a 10% stake in the company last March (UX No 170), has launched a new 68030-based system running Unix System V.3. The Sentinel 030 uses a 20 Mhz 68030 rated at 7 MIPS, 6882 floating point co-processor, and supports 32 users. Memory is expandable from 8 Mb to 24 Mb. The system is intended for networked applications and supports Ethernet driven by TCP/IP. X.25 is also supported.

NETWORK SYSTEMS CORP UNVEILS VERSATILE HYPERCHANNEL-DX

Network Systems Corp, Minneapolis has extended its Hyperchannel family of high-speed intercomputer buses or local area network systems with the Hyperchannel-DX, which is designed to enable users to develop "networks of networks" connecting heterogeneous computers that support different standards, and using multiple protocols concurrently. The Hyperchannel-DX controllers are built around ~~16MHz Motorola 68020s with 1Mb to 16Mb, supporting a 400Mbps bus for a maximum data transmission rate of 100Mbps and up to eight concurrent sessions, which can be between different net works using different transmission standards and protocols.~~ The system supports coaxial, fibre optic, twisted pair or telephone lines, and transmission modes and protocols supported include Ethernet, TCP/IP and the company's own Hyperchannel, with Open Systems Interconnection and Fibre Distributed Data Interchange, FDDI. First versions of Hyperchannel-DX on offer are the N130 for use with Cray Research machines, N220 for IBM and other mainframes using the FIPS channel standard; N400 for minis, micros and workstations with Direct Memory Access channel; and the N700 for connecting a computer or up to four networks to one or two telecommunications links. Prices range from \$60,000 to \$200,000 and first ships of the new products is set for the fourth quarter of 1988.

HUNTER SYSTEMS TO DO XDOS MS-DOS-UNDER-UNIX FOR CLIPPER

Hunter Systems - presumably the other part of the Hunter & Ready parting of the ways - has been commissioned by Intergraph Corp, Huntsville, Alabama to do a version of its XDOS product for the Clipper 32-bit chip set. There are several solutions to running MS-DOS programs under Unix on machines built around Intel iAPX-86 series microprocessors, but XDOS is designed to enable MS-DOS applications to execute fast on non-Intel processors - initially the 68000 family. Intergraph reckons that Clipper/ XDOS will offer MS-DOS performance significantly better than that on an AT. The key feature of XDOS is that it uses a binary compilation technique rather than software emulation. Binary compilation uses advanced optimising compiler techniques so that instead of using a source file written in C, Pascal or Fortran, a binary compiler operates on an executable binary file as its source. The output of the binary compiler is an executable binary that can be run on a variety of different computer architecture. XDOS consists of two parts - the binary compiler, which uses as its source 8086 binary code and generates executable binary code to run on the target microprocessor - compilation needs to be done only once; and the XDOS PC interface library, which provides the connection between the MS-DOS environment and the target machine's operating system. It is a complete emulation of the interface that an MS-DOS program sees while it executes - MS-DOS, ROM BIOS and addressable hardware.

BECHTEL DOES SOFTWARE FOR CLIPPER AND SIGNS WITH SILICON GRAPHICS

At the recent National Computer Graphics Association conference, Bechtel Software Inc introduced 3DMX, a three-dimensional plant and facility design software package that runs in a stand-alone mode on Intergraph Clipper-based workstations with MicroStation software. In addition, the company introduced Shade, a colour shading package that runs on personal computers, for three-dimensional computer models. 3DMX prices start at \$5,000 and Shade is priced at \$2,500. Separately, Bechtel announced a value-added reseller agreement with Silicon Graphics Inc, under which Bechtel will offer Silicon Graphics' Iris 3100 and 4D series of workstations with its Walkthru three-dimensional animation and visualisation system: Walkthru allows users to "walk through" realistic computer models of large industrial plants, buildings, ships, power plants and other facilities.

HEWLETT TO ESTABLISH OPEN SYSTEMS LAB IN ITALY

Hewlett-Packard Co is establishing a research facility in Milan, Italy to serve as one of its international development centres for network technologies based on the Open Systems Interconnection standard. The European Network Technology Centre, Hewlett's first non-sales operation in Italy, will conduct proprietary research and will co-operate with European research bodies and industries working on OSI network technologies and data communications. The company says that creation of the centre is part of its overall HP Advancenet networking strategy which embraces the OSI model and that it will come under its Information Networks Group. It will have strong links with the European manufacturing facility for networking kit in Grenoble, France.

ROCC COMPUTERS IS ALIVE AND WELL AND LIVING IN HOPES OF OPEN SYSTEMS

ROCC Computers Ltd yesterday broke what seems to have been a three-and-a-half-year silence by revealing bold plans that the company hopes will take it successfully into the 1990s. The company, formerly Rediffusion Computers, was formed back in November 1984 through a Charterhouse Development Capital-backed management buy-out, headed by managing director Mike Aldrich, from its parent company British Electric Traction Plc. Prospects for ROCC did not look too good at the time as BET took a £14.0m write-off in the transaction and it was labouring under an £884,000 first half loss. However the company now employs 450 people, mostly at its head-office in Crawley, West Sussex and has announced profits of £1.8m and a turnover of £16.0m for the financial year just ended - and is now 94% owned by its employees. It has concentrated on the business it knew best, data capture and viewdata systems in the local authority, sales/marketing and financial applications markets. Mike Aldrich said that the company's business plans call for an expansion from its present 450-person, £16.0m sales level to an 800-person, £50.0m sales level in the 1990s. The proposed expansion will be based around three processor ranges called the Tripos Workstation Management Systems - WMS - implementing Open Systems Interconnection standards. The basic WMS software system supports a variety of workstation terminals for multiuser real-time processing and can handle up to 96 concurrent users on ROCC's 28X5 series 32-bit processors, which take a RISC approach in what is believed to be a bit-slice processors that the company rates at 15 to 17 MIPs. The WMS/Videotex system is specifically designed to handle up to 1,000 viewdata terminals in typical usage. Running on the ROCC 28X6 processor, the system also includes an integrated database management system. Finally ROCC has introduced the WMS/Unix which provides an overall system interface manager for Unix, relational databases and the ROCC C-Check 11 fourth generation language. The system runs on the ROCC 28X8 VMEbus range of computers, based on Motorola 68000 family processors, which are due to be replaced by a RISC chip shortly.

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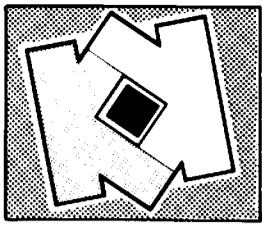
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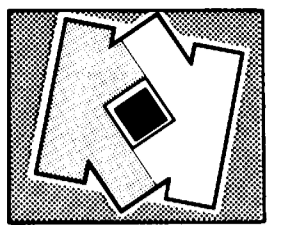


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IBM has joined the Network Computing Forum set up by Apollo Computer to "exchange ideas and agree on common technical approaches for multi-vendor networking": membership now includes users, hardware and software vendors and academic centres to the number of 130, and NCF is an affiliate associate of the Corporation for Open Systems.

- 0 -

Showing the flag for Open Systems and, more to the point, trying to drum up interest for Enterprise Networking Event '88 International show in Baltimore, Maryland, June 5 to 9, executives from 12 major computer and communications vendors - AT&T, CDC, Data General, DEC Hewlett-Packard, Honeywell Bull, IBM, Sun Microsystems, Telenet, Unisys, Wang Labs and Xerox - shared a platform in New York this week to announce that they will support the Open Systems Interconnection standard as the way they will manage multivendor networking today and in the future: the 12 represent more than 80% of computer and communications products and services sold in the US - and all have previously said they back the OSI standards.

- 0 -

The name change appears to have done Arix Inc good - ABS Computers of Brighton has now joined Fortune Systems in becoming an OEM customer of Arix since the name change occurred and has orders for five of the systems already: ABS's parent Trafalgar House produced its half year results this week but the group firmly forbids the various divisions to comment on their performance; ABS does say, however, that its figures were ahead of its plan.

- 0 -

Control Data Corp could soon find itself under siege - but then again it may not. Corporate raiders the Belzberg family of Canada are believed to have built up a 4% to 5% stake in the Minneapolis mainframer and reportedly have talked to Wall Street investment banks about the possibility of a break-up of the company. But the Belzbergs have also more than once accumulated stakes in companies and then sold them back to the target or disposed of them without any bid being made.

Trying to make most of us feel depressingly ancient, DEC PDP and VAX designer Dr Gordon Bell launched the Ardent Computer Titan in the UK with the chilling warning that mainframes and minicomputers are today "the code museums for yesterday's captive applications" - but help is at hand: "Titan, through Unix and other public standards, will allow users to exit from the code museums" - that's a relief.

- 0 -

The new Cray X-MP Extended Architecture scientific supercomputers from Cray Research Inc implement the architecture of the new Y-MPs, and include both the X and the Y instruction sets so that users can switch between the two environments and migrate their workloads: built in 2,500-macrocell arrays, they replace the existing X-MPs, offering higher performance and more memory at about the same price, and Cray is promising a new release of its CFT77 Fortran compiler that will automatically recognise parallel aspects of Fortran programs and allocate them for concurrent execution in different processors in any multiprocessor configuration; Cray also announced a new SSD-5I model of its solid state storage device with 128M 64-bit words that goes into the input-output subsystem and costs \$1.5m; the 512M-word SSD-7 is also reduced by 16.7% and now costs \$5m, while the 64M-word model is discontinued.

- 0 -

Valid Logic Systems, San Jose, says Sun Microsystems Inc has signed a contract to purchase Valid's end-to-end electronic design automation systems for printed circuit board and systems design: the contract is estimated to exceed \$1m, and with the Access software configuration program, Sun will do a design environment in which each application software package becomes a network resource available to each user.

- 0 -

Unipalm of Cambridge has been appointed the UK's first OEM for Sun Microsystems' PC-NFS, which allows PC users to gain transparent access to files on other NFS machines.

Arix Inc, which now claims to be the world's third largest manufacturer of Unix-based minicomputers, has signed a worldwide agreement with the UK's Datavision Ltd for its Universe Basic migration tool for DEC PDP-11 Basic: Arix has initially paid for £85,000 worth of licences in an open ended agreement.

- 0 -

Ardent Computer is to make the bus architecture of its Titan graphics supercomputer available under licence to other vendors, expected to be "makers of devices that demand extremely high I/O bandwidth, such as signal processing, image processing, high speed networking, and mass storage products": the intention is to provide the first "open" bus for supercomputers, which require around ten times the power of the standard VME bus, according to Ardent.

- 0 -

iXOS Software of Munich is a new company set up by Eberhard Farber and Hans Strack-Zimmerman; Farber was founder and manager of PCS (Cadmus) a Unix systems manufacturer with 300 employees, and Zimmerman was head of Unix development at Siemens AG, where he was responsible for the Sinix line, including the MX2: the company will develop and market user friendly applications software, with a product strategy based around "a standardised user interface and a consistent database oriented data management procedure", and products will be adapted to national requirements.

- 0 -

Advanced Micro Devices Corp, Sunnyvale has announced beta site sampling of 30MHz version of the Am29000 32-bit RISC microprocessor, which it rates at 20 MIPS on the Dhrystone benchmark: it also announced volume availability of the 16MHz 11 MIPS, 20MHz 14 MIPS and 25MHz 17 MIPS versions of the part - the company says it will be sampling the Am29027 Floating Point Processor in the third quarter and has added two optional support chips, the Am29041 Data Transfer controller, and the Am29062 Integrated Cache Unit.

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And AMD says we can expect to see a 35 MIPS version of the 29000 for next year and a 50 MIPS version by 1991.

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EUROPEAN BACKING FOR HAMILTON GROUP

-IBM LEADS CONSORTIUM TOWARDS INDEPENDENT UNIX

Seven major companies led by IBM this week announced their plan to unveil a "vendor-independent" Unix standards strategy to counter the AT&T-Sun Microsystems alliance, confirming persistent rumours over the last few weeks (UX No 179). And as we forecast last week IBM, DEC, Apollo and Hewlett-Packard have gained some European backing, from Nixdorf, Siemens and Bull. The Open Software Foundation will be established in northern California and will have an initial funding of \$90m, member companies (sponsors) will each contribute fees of \$13.5m. 200 invitations for memberships will be sent out, membership will cost \$25,000, or \$5,000 for a non profit making organisation. The first response for membership has come from Philips. Memberships allows a vote on the board. The starting point will be a system that will use core technology from a future version of IBM's AIX software as a development base- but there are no compatibility commitments to AIX. The companies said specifications supported by the foundation will be publicly available, and a set of verification tests for all appropriate facilities will be identified or created, the foundation's open systems software will be licensed internationally. The Foundation is to begin immediate operations. Also announced today was the initial Level Zero application environment specification including 18 defacto standards to be used in future releases. Level One, due sometime within the next 18 months will include technologies licensed from member offerings such as Apollo's NCS, Bull's Unix system based Multi Processor Architecture, DEC's X Window based interfaced toolkit, HP's NLS, Nixdorf's Relational Database Technology, and Siemens OSI protocol support. Tuesday's worldwide conference, with a satellite link-up between New York, Atlanta and Geneva, revealed that future Unix implementations from the group will maintain compatibility with both the IEEE Posix portable Unix standard and X/Open's Common Applications Environment, but will veer away from AT&T-Sun developments on "official" Unix. If AT&T is displaced as the centrepiece of Unix standards efforts, X/Open could begin to play a more important role in future developments - and IBM is understood to have now sent in its application to become an X/Open member. X/Open Chairman Geoff Morris said he saw the Unix breakaway group as a positive move. "The standards focus has moved from the operating system to a higher level: the Common Applications Environment and Posix create a very stabilising base plate, and below that suppliers can innovate like hell". The move, he suggested, had been made as a "direct response to market demand for vendor independence, strong enough for people to stop trying to be technically different and collaborate".

ALLIANT BOOSTS FX TOP-END WITH CLUSTER ARCHITECTURE

Alliant Computer Systems has introduced a new local area clustering architecture for its FX minisupercomputers, allowing easier combination and management of multiple co-operating systems. Along with the new architecture, called ANSR/LSX (Alliant Network Supercomputing Resources), the Acton, Massachusetts-based company has launched a new configuration of the FX Series; the FX/82. Alliant claims that the FX/82 "computational centre", which supports 16 high-performance vector processors called Advanced Computing Elements (ACEs) arranged in a network cluster of dual-eight FX/80 systems, will offer eight times the computational throughput of DEC's four processor VAX 8840, the most powerful VAX system available. Priced at £722,000, the FX/82 provides 377.6 peak MFlops and 235 Whetstone MIPS of computational throughput. ANSR/LSX uses Ethernet, and provides cluster-wide services, including job distribution, transparent file sharing and centralised system management: faster media will be used as they become more standardised and cost effective, says Alliant. Systems can be configured for a given mix of applications, and can be integrated into an existing VAX installation via Alliant's DNX DECnet compatible networking system and VAX emulation tools from Boston Business Computing. NFS, NeWS, and the X-Window system are also supported. The systems were demonstrated this week at the Third International Conference on Supercomputing, held in Boston. Alliant claims worldwide installations number more than 235.

NCC HEADS EURO POSIX TESTING CONSORTIUM

Next year, EEC-sponsored testing for POSIX conformance should become a reality following the award to a consortium led by the National Computing Centre of a contract for setting up a testing service. Other members of the consortium are X/Open Ltd - whose VSX test suite is a contender for the software to be used for testing POSIX conformance - British Telecom, Ireland's National Software Centre and Computer Resources International of Denmark. The project is part of the EEC's Conformance Testing Services programme, which already covers OSI communications software and programming languages. As a result, NCC, NSC and CRI plan to set up POSIX testing centres which will operate the test suite. The UK's CCTA has already come out heavily in favour of specifying POSIX compatibility in procurements; however there appears to be little indication as yet of any EEC-wide insistence on POSIX conformance, such as the stipulation on OSI conformance for government procurements that came into force earlier this year. The NCC, which already operates OSI and programming language testing, is responsible for the overall management of the POSIX CTS project; aims include eventual coordination with the work of the US National Bureau of Standards, although the issue is clouded at present by the recent NBS decision to remove some of the optional features of POSIX before adopting it as a US Government procurement standard. Initial project work will include establishment of testing procedures and investigation of existing software for a potential test suite. The consortium wants the suite to cover fully POSIX 1003.1, comply with 1003.3, and be expandable to cover future extensions including 1003.2.

NBS ISSUES INTERIM POSIX FIPS

The National Bureau of Standards issued a Federal Information Processing Standard (FIPS) based on POSIX earlier this month, despite the fact that the POSIX specification has yet to be finally ratified by the IEEE 1003.1 committee. Based on draft 12 of the POSIX specification, which was narrowly approved by the committee back in February, the interim FIPS has begun a 30 day comment period, after which it can be used in procurement contract request for proposals (RFPs) from the Federal Government. Other government bodies are expected to commit to POSIX conformance, if not to the FIPS itself. The NBS already has a test suite waiting in the wings (UX No 169) which is expected to be released after the comment period. A final version of the FIPS is expected later this year, following the expected final approval of the POSIX standard in June.

TOP AMD STAFFERS WAVE FLAG FOR Am29000 RISC CHIP IN LONDON

George Rigg and Mike Wodopian from Advanced Micro Devices were in London last week to announce that the Am29000 32-bit RISC micro processor family is now available in the UK (UX No 179) - a bit superfluously since chipmakers these days generally make their new parts available simultaneously on a worldwide basis. The company also said that the recently announced 30MHz version, now available for beta site sampling, would be available here in the third quarter. The microprocessor boasts an on-chip 64 entry memory management unit which performs single-cycle address translation. A 512-byte branch target cache performs on-chip single cycle branching. It also features 192 general purpose register files, an input-output channel with peak channel bandwidth of 200 Mbytes-per-second plus a four-stage pipeline providing single-cycle instruction execution at 25MHz. AMD claims that for embedded control applications the 16MHz and 20MHz devices can offer more than two times the performance of the new Intel 80960KA system at an equal or lower systems cost. The company also claims success in embedded control applications against the Motorola 88000 - it says the 29000 system with a single chip is at least equivalent in performance but much lower in cost than the Motorola 88000 three chip solution. George Rigg, who is responsible for three of AMD's product groups including RISC processors, said that he believes the Unix market will expand enormously and consequently AMD has come up with Am29000 implementations of Unix System V.3 (in conjunction with Unisoft Corp), as well as Ready Systems' VRTX embedded real-time operating system. At the moment 80% of the 29000 sales are in the embedded controller market, 10% to 15% are for computer system designs, with another 5% to 10% going into evaluation sites where designers have not yet decided whether or not to use the chip. Mike Wodopian, who is responsible for co-ordinating all aspects of the AM29000 programme, said that he sees the embedded control market eventually accounting for approximately 65% of total sales, with the CPU market accounting for the remaining 35%. Prices range from \$174 for the 16MHz version, \$230 for the 20MHz and \$360 for the 25MHz.

Support tools

Meantime in the US, Advanced Micro announced that Embedded Performance Inc, San Jose, California had joined the team of third party vendors developing support tools for the Am29000. Embedded's support tools include an optimising C compiler, instruction simulator, source level debugger, macro assembler, linker/locator, librarian, assembly level symbolic debugger, and a System 29000 Development Station. The last-named is a modular Am29000 development system that can be configured to meet specific applications, including any combination of Software Execution Vehicle, Target System Debugger and Real-Time Histogrammer, plus a logic analyser with tracing for 192 channels, including all address, data, instruction and control busses of the Am29000. And SBE Inc, Concord, California will use the Am29000 in its next generation of data communications products. The \$12m-a-year company offers families of single-board computers and communications products for use in real-time, data acquisition and control applications.

...AS YARC OFFERS Am29000 BOARD FOR MAC

Yarc Systems Inc, established in Thousand Oaks, California to create RISC-based co-processors for Apple Macintosh II computers, has adopted the Advanced Micro Devices Am29000 and Am29027 mathematics co-processor as the basis of its McCray RISC co-processor board for the Macintosh II. Yarc reckons that the McCray, which uses a Harvard memory interface, provides users with performance above that of RISC workstations like the Sun-4 while retaining the icon-based Mac user interface. Yarc claims that with the co-processor, programs run 10 times faster than on the Mac II alone. The McCray conforms to the AMD Binary Interface Specification, making it easier to bring applications over to the Mac and enabling Am29000 compilers and development tools to be used to create applications for it on a DEC VAX or an MS-DOS micro.

...AND 88OPEN COMMITS MORE TO MOTOROLA RISC

In an announcement from Stratham, New Hampshire, the 88open Consortium not-for-profit organisation of companies and individuals planning to manufacture, develop, sell or use products based on the new Motorola 88000 reduced instruction set microprocessor said yesterday that 28 companies had now joined the consortium - but the big names are the ones that have already declared - the likes of Stratus Computer, Data General, Tektronix, Convergent Technologies, Encore Computer. Among the more obscure ones are Absoft Corp, Auburn Hills, Michigan; Altech, Sunnyvale, California; Bell Northern Research, Ottawa, Canada (neither small nor obscure, but outside the computing mainstream and planning to use the chip in telephone switching systems; Flashpoint Computer Corp, McLean, Virginia; Golden Triangle Computers, San Diego; Incremental Systems Corp, Pittsburgh; Language Processors Inc, Framington, Massachusetts; and Software Components Group, Santa Clara California. In the US, the UK's Integrated Micro Products, Comsett, Co Durham, and Tadpole Technology, Cambridge would be regarded as pretty obscure too. But there may still be other big names waiting in the wings, because only 21 have so far allowed their names to go out as members. Meanwhile, Motorola's own Systems Division, eager to establish its own identity as a systems level company, is expected to make some RISC announcements on Wednesday.

AT&T SYSTEM V/386 RELEASE 3.2 "READY BY JUNE"

The Unix release that finally merges the Unix and Xenix strands of the operating system for Intelbased hardware, System V/386 Release 3.2, will be available in early releases from June. According to AT&T Unix Europe, the product will be shown at London's European Unix User Show at the beginning of the month, but will not as a general sourcecode release until August. The release is distinct from the nonIntel version of V.3.2 launched with the 3B2/700 last week (UX No 179): Xenix compatibility will be combined with System V and Berkeley 4.2 Unix in all versions from System V.4, due out next year.

SCANVEST RING TO BUY SKRIVERVIK DATA

Just three weeks after agreeing to cede a 51% stake in itself to Ing C Olivetti SpA (UX No 176), Oslo, Norway-based Scanvest Ring A/S is sweetening the pie for the Italian by itself agreeing to acquire another Scandinavian player in the Unix systems market, Skrivervik Data A/S. Skrivervik, with a modest 10 employees, is looking for a startling \$5m turnover this year marketing Pyramid Technology RISC-based minis and Convex Computer minisupercomputers, plus sundry Unix workstations, configured into turnkey systems for the Norwegian scientific and technical markets, a new departure for Scanvest Ring. Skrivervik wants Scanvest's cash to diversify into on-line transaction processing and relational database system solutions. The acquisition is also a good fit because Scanvest Ring already markets Pyramid machines in Sweden. The company is also hinting that Scanvest's involvement with Pyramid has persuaded the Italian to take a closer look at collaboration with Pyramid in other European markets.

COMMODORE SHOWS OFF 68030 BOARD, UNIX FOR AMIGA 2000

It's usually many moons between the showing by Commodore International Ltd of a product idea at a show and the availability of the thing, so it is not clear when a 68030-based upgrade board and a version of Unix System V.3 for the Amiga 2000 will be available, but the things were at Comdex/Spring in Atlanta this week. According to Microbytes, the Unix uses a proprietary windowing system on the Amiga (UX No 174), and was shown displaying two windows with shaded, three-dimensional-style borders while scrolling a file rapidly underneath the windows. Unix will not be able to co-exist with native Amiga-DOS applications because it uses the machine's 68000 family CPU; MS-DOS can run concurrently because it uses a co-processor. The 68030 CPU and memory management board supports up to 20Mb of memory. A high-resolution mono monitor for Amigas has 1Mb of its own memory, putting up 1,008 by 800 pixels. Transputers are also in the Commodore plan.

WORDPERFECT SHOWS UNIX PORTS AT COMDEX

WordPerfect Corp used Comdex to announce that it would be shipping Unix versions of its bestselling wordprocessing package from June: the new ports include Intelbased machines running SCO Xenix or Microport Unix, as well as Unix System V on AT&T's 6386 workstation and Sun Microsystems' Sun 3 workstations running SunOS. Versions running on DEC, HP, Motorola and Pyramid hardware are expected by the third quarter of this year.

QUEST LOOKS TO WHITECHAPEL BASE TO EXPAND THIRD PARTY SUPPORT ...

Clearly committed to expanding its third party maintenance and support services arm, Chandler's Ford, Hampshire-based Quest Group Plc has announced the acquisition for an undisclosed sum of Whitechapel Workstation's support, service and repair operations, together with a proportion of Whitechapel's stocks (UX No 179). In the light of the Whitechapel acquisition, Quest is estimating a £4.5m turnover for services and support this year, within a projected UK turnover of some £20m. Quest's two other UK strands are distribution - notably Novell local area networking products - and end-user selling, targeted at the IBM 6150 - RT Personal Computer - market and strengthened by the acquisition of Grist, a Southampton-based IBM Systems Centre, earlier this year. 50% of Quest's business - also valued for this year at £20m - is still export-based: the company is currently involved in a perestroika-generated joint venture with the Soviet Ministry of Instrumentation to develop a Moscow-based systems house, and continues to export its printed circuit board design products and large photo plotters to the Eastern bloc. Big sellers in Japan and the US are the Micropad and Dynamic Pad, which have evolved from the former Quest Automation's original Datapad hand-print data entry device.

...AS SIX BID FOR RIGHTS TO WHITECHAPEL'S HITECH-10 WORKSTATION

Meanwhile, Whitechapel's remaining fortunes - essentially the MG and Hitech-10 series of Unix workstation products - rest in the receivership hands of Peat, Marwick, McLintock: little interest has been shown in the MG series, now felt to be out of date, but negotiations are currently afoot with six interested parties - two each from the US and West Germany, and one each in France and the Netherlands - for the design and manufacturing rights to the Hitech-10, based on the MIPS Computer RISC. White chapel had an association with Thomson in France, and Computer Technik Muller, Konstanz, West Germany, was to have built the Hitech-10 for the company. A decision between the six is expected next week.

JOB CUTS AS PRIME JOINS WITH COMPUTERVISION

Prime Computer Inc, Natick has concluded the first phase of digestion of ComputerVision Corp, and finds that some 700 people, mainly in manufacturing and operations, are surplus to requirements. The number amounts to about 5% of the minimaker's 13,500 workforce. The jobs will go over the rest of this year and it hopes to be able to achieve many of the cuts by attrition and by redeployment of people into expanding parts of the business. No cuts will be made in the direct sales force, and its "sizable" investment in research and development will be maintained. Those it cannot redeploy will get redundancy payments and outplacement services will also be provided by the firm. Prime's president and CEO, Joe Henson, said that the company was seeing strong demand for its 4000 Series midrange products, and Computervision's CADDs product line, but said that overall, US order rates had "remained sluggish".

ICL COLLABORATIONS WILL HELP IT GROW

There was a record number of delegates and visitors at the ICL Computer Users Association annual conference in Birmingham last week, which culminated in a speech by Bob Downey, Marketing Director of ICL (UK), in which he outlined ICL's plans for the future. He said that ICL's UK turnover grew by more than 16% in 1987 to over £850m; the reasons for that growth being, he claimed, ICL's decision to get involved in collaborative activities with other computer companies. Last year saw ICL's relationship with Fujitsu enabling the company to bring the Series 39 to market two years ahead of schedule. The company also collaborated on the integration of Northern Telecom Data Systems in the UK and with Sun Microsystems on specialist graphics workstations - its earlier relationship with Perq Systems having died with Perq. He emphasised that if the company was to grow at a faster rate than the market as a whole, it must embark on further collaborations and adhere to Open Systems standards. ICL's plans include expansion in each of the major areas of application: personal, departmental and corporate systems. At the personal level ICL will be announcing further developments, focussing primarily on professional users, and at the departmental level there are plans to enhance the DRS NX range using the 80386 processor. There were no new announcements at the corporate level, although 1987 saw the company hit the one thousand sale target with Series 39, and the VME population grew by 30% in the UK. ICL says it also plans to introduce the Ingres relational database system, which is available across ICL's departmental and office systems, on current and future mainframe ranges though this could be hampered by implementation problems. In an effort to improve service, Downey said, ICL intends to expand the number of third parties with which it operates through new agency and reseller agreements. The company feels that it is not getting enough business from that particular channel - and Downey foresees ICL's third party business, which saw 40% growth last year, to expand at three times the rate of the UK computer market as a whole.

NEWCASTLE'S MARI EMBARKS ON MAJOR EXPANSION,

One of the more firmly-established success stories from the ravaged North-East of England is embarking on a major expansion programme and looks to create substantial opportunities for new employment, starting right now. The Microelectronics Applications Research Institute spin-out from Newcastle University, wellknown for its Newcastle Connection networking system, is recruiting 250 staff over the next three years as part of an expansion drive sparked by 12 contracts worth over £10m - including a single £3.6m deal under the European Commission's Race telecommunications initiative. MARI was set up as a research institute in 1979 with £300,000 of funds provided over three years by Tyne and Wear County Council. Members include CAP Group Plc, and assorted northern universities and polytechnics. The group currently employs 130 staff and about 75 extra jobs are on offer now. This year MARI expects turnover to reach £7.5m with the training operation contribution 40%; research and systems development 26.6% and micro assembly and sales 33.4%. MARI sells systems development services to the EC, European and US-based companies and is involved in new technology projects such as Esprit and Alvey, focusing on telecommunications research. No plans are afoot to change MARI's status as an institute - which means it does not pay dividends - but managing director Bob Cooper says this makes it difficult for the group to raise funds and will be reviewed at some future date.

tactile

The group comprises four main companies. MARI Advanced Microelectronics Ltd, whose systems and software consultancy division struck the EC deal, has 20 immediate vacancies. The company is injecting more funds into its new division, advanced sensors, which will manufacture tactile sensors. The microelectronics arm is also setting up a centre to develop computer-based training and interactive video techniques in Stockton. The Advanced Training arm undertakes youth and adult training programmes funded by the government and European Commission, and is the group's fastest growing operation. MARI Advanced Systems Ltd, the manufacturing arm which claimed a turnover of £500,000 from sales of its Tyneware range of Unix-based and IBM compatibles micros last year, is recruiting 11 more staff. This company also assembles personal computers for Victor Technologies using components supplied by the latter. And Hitech Applications Ltd - a joint venture with a shipping design company, MDC, Sutherland, expects to do £500,000 worth of business in its first year.

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AT&T AND OLIVETTI DIVORCE PROCEEDINGS LOOM?

There was a lot more chit-chat on the Comdex floor about the brouhaha between Olivetti and AT&T than about any new product announcements made. The stories retailed by AT&T and Sun staff and their sundry hangers-on consistently pointed to Vittorio Cassoni as the author of the whole idea of AT&T upping its stake in Olivetti, the guy who wanted it to happen long before the opportunity arose. The gossips say Cassoni sold Carlo de Benedetti on the idea when he began needing cash for the Societe Generale de Belgique bid, and they in turn went to AT&T and sold them on the idea, walking away with a handshake deal. AT&T is blamed for renegeing on the deal after heated words about its involvement with Sun Microsystems, and about how many 3Bs have been sold in Europe and how many Olivetti PCs have been sold in America. But these are classified more as recriminations than the real reason the deal went sour and that's what they all want to know. Hence the gossip. Reporters complain Cassoni wasn't straight with them and denied he was leaving AT&T up to the time the announcement was made. AT&T insiders say his departure was unexpected and interpret it as one of de Benedetti's little ways of punishing AT&T for its backsliding. Despite his imminent departure, Cassoni gave the Comdex keynote speech in which he reiterated for the last time the AT&T party line about Unix and Open Systems. But giving the last word to AT&T's Robert Kavner, he was bravely asserting at a Comdex conference that AT&T's relationship with Olivetti would be strengthened by Cassoni's return to Olivetti (sounds like a back-handed compliment) and that there is no substance to all those rumours that divorce lawyers are being briefed to put an end to the marriage.

...AS DE BENEDETTI TIGHTENS CONTROL OVER OLIVETTI

Carlo de Benedetti's Compagni Industriali Riunite SpA holding company has increased its holding in Ing C Olivetti SpA to 20% from the previous 14% by buying shares in the open market, in a move the de Benedetti says is intended to make clear his longterm commitment to Olivetti. Half the Riunite shares are voted in a shareholder syndicate that has 19% of the total Olivetti shares outstanding and is in alliance with de Benedetti, so that he effectively now controls 30% of the equity where previously his direct and indirect stakes were about matched by the 22% held by AT&T Co. The additional shares bought by de Benedetti have an indicated value of about \$210m; with regard to AT&T he reportedly told L'Espresso newspaper that while he hoped AT&T would remain a shareholder, Olivetti "no longer needs a big partner".

28 COMPANIES HAVE JOINED CONSORTIUM

In an announcement from Stratham, New Hampshire, the 88open Consortium Ltd not-for-profit organisation of companies and individuals planning to manufacture, develop, sell or use products based on the new Motorola 88000 reduced instruction set microprocessor said yesterday that 28 companies had now joined the consortium - but the big names are the ones that have already declared - the likes of Stratus Computer, Data General, Tektronix, Convergent Technologies, Encore Computer; among the more obscure ones are Absoft Corp, Auburn Hills, Michigan; Altech, Sunnyvale, California Bell Northern Research, Ottawa, Canada (neither small nor obscure but outside the computing mainstream and planning to use the 88000 in telephone switching systems); Flashpoint Computer Corp, McLean, Virginia; Golden Triangle Computers, San Diego; Incremental Systems Corp, Pittsburgh; Language Processors Inc, Framingham, Massachusetts Oasys Inc, Waltham, Massachusetts; and Software Components Group, Santa Clara, California; in the US, our Integrated Micro Products in Consett, County Durham, UK, and Tadpole Technology Plc, Cambridge, UK, would be regarded as pretty obscure too, but there may still be other big names waiting in the wings, because only 21 have so far allowed their names to go out as members.

NCR ADDS INTERACTIVE UNIX ON ITS MICROS

With enormous investment in automated manufacturing and surface mount technology for its personal computers, NCR Corp needs to drive the machines as hard as possible, and has now introduced a series of 80386based Unix workstation versions, going to Interactive Systems Corp to provide the software. The company will take Interactive's 386/xi version of Unix V.3 for use on the PCs including the PC916. Priced at \$645 in the US, the operating system will be sold in conjunction with two other Interactive products: the software development system (containing Unix utilities) at \$595; and VP/ix, for running DOS programs under Unix, priced at \$395. All products will be available in June, said the company. NCR intends to continue selling Microsoft's Xenix operating system for its 80286-based PCs.

COROLLARY SUPPORTS DOS UNDER UNIX

Another Interactive customer is Corollary Inc, which has released a new version of its 8x4 mux device driver that supports VP/ix, allowing the 32port halfcard to connect up to 32 terminals to a 386 Xenix/DOS system using a single halfslot.

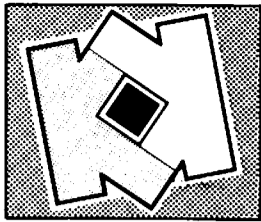
STELLAR WINS JAPANESE OEM

Stellar Computer Inc, Newton, Massachusetts, has followed up recent distributor and reseller agreements in Japan with a major OEM deal from Argo Graphics Inc, Tokyo. Argo is to package Stellar's GS1000 graphics supercomputer with its own numerical control system software, marketing it under the name Surge1. Daniel Murray, Stellar's VP International, said the deal was worth "multimillions", and he anticipated around 30 sales in the first year. Murray claimed that Stellar had also won OEM deals in the US, but said that the customers were not yet ready to reveal themselves. Stellar is setting up offices in the UK (Guildford, Surrey) and Germany (Frankfurt), and both will be open by July. A Japanese subsidiary, based in Tokyo, is also planned by yearend: the company has existing agreements with Asahi Chemical Industry Co (which acts as an industrial distributor) and Mitsui and Co, as a trading company. Murray said the company was looking to sell around 180 Stellar systems in its first year with three quarters going direct to endusers.

THE TRAIN NOW STANDING AT PLATFORM 3 IS FOR MANUFACTURING..."

- HONEYWELL BULL

Honeywell Bull Ltd has taken to the open railway track to show off the latest additions to its range of computer-based solutions for the manufacturing industry. The Manufacturing Express, an elegant purple and green striped affair, complete with buffet car, was scheduled to leave Euston's platform 11 this week, and will make day-long stops - excluding the weekend - at carefully selected ports of call - Birmingham Snow Hill, Manchester Victoria, Leeds City, Glasgow Central, Newcastle-upon-Tyne, Cambridge Coalfield, Bristol Temple Meads - before completing its round trip by arriving at London Victoria on May 26. According to the company, it was able to choose both the itinerary and the dates, and British Rail met all its requirements. Honeywell anticipates some 1,500 "passengers", and claims that the scheme has considerable time and cost advantages over the traditional hotel-based demonstration - although it wasn't prepared to reveal how much it costs to hire your own train for 10 days. Once aboard, visitors can roam between the manufacturing carriages, where demonstrations include the MRP II Unix-based Management Resource Planning System - well that's what Honeywell Bull likes MRP to stand for, although Manufacturing Requirements Planning, and the office automation and desk-top publishing wagons, and alight with a handful of brochures gleaned from a well stocked information centre. Honeywell pronounces the scheme first class - UK Trade Minister Michael Grylls, certainly appeared to agree, but that was before he was forced to don peaked cap and whistle, and wave the green flag of inauguration.



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Independent versions of Unix are not unique to the Open Systems Foundation (see front page): Brian Boyle of Novon Research pointed out that there have been at least four previous efforts, including Idris from Whitesmiths Inc, Unos from Charles River Data Systems (presided over by Jim Isaac, now of DEC), Regulus from Aicyon, and Mark Williams' Coherent.

- 0 -

And rumour suggests that two semiconductor companies are amongst those still considering joining the new consortium.

- 0 -

Harris Corp has quietly cut another 100 jobs at its Computer Systems Division in Fort Lauderdale, Florida, but declined to say how many positions remained at the unit, which has been steadily shedding staff for several years: the cuts were spread throughout the division, which has an estimated annual sales of \$300m.

- 0 -

At Comdex last week, Video Seven Inc, Fremont California, announced a two year "multi-million" OEM agreement with Sun Microsystems to provide Sun with advanced Video Graphics Array (VGA) technology for its Sun 386i workstation family: the VGA controller board works in conjunction with the Sun 386i video controller, and allows the SunOS operating system to provide up to four full VGA environments, each claimed to be 100% register-level compatible with IBM's VGA.

- 0 -

Also at Comdex, Micro Design International Inc, Florida, launched a range of storage devices for Unix systems, including optical Winchester disks combining conventional fixed disk drives with WORM (write once read many) laser disks, and the 2 Gb DataBank magnetic storage systems, claimed to have an average seek time below 20 milliseconds.

- 0 -

Relational Technology says that customer validation shipments of Release 6 of Ingres will begin in the UK from July: Release 6 incorporates a multi-server data manager designed to optimise performance on multi-processor architectures such as Sequent's Symmetry and DEC VAX-Cluster and Polar Star systems.

unigram·x

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You can erase Compec exhibition at Olympia in November from your 1988 diary entries; Cahners Exhibitions Ltd has cancelled the show after finding that the number and range of exhibitors contracted to appear failed to add up to a "comprehensive show".

- 0 -

Intergraph has appointed a European sales force for its advanced processor division responsible for the Clipper RISC processor; three sales persons based in the UK, West Germany and France, under the control of the Swindon-based European operation.

- 0 -

Walters International, known for its cut-priced PCs, will be launching a 9 user 80386-based multi-user system running Xenix at the PC User Show at the end of June - the system will be based around the current Walters 20MHz 386 computer, and includes 2 Mb RAM and a 20 Mb hard disk.

- 0 -

Although DEC may be lining up in the opposing camp to Sun Microsystems, look for it to add support to Sun's Network File System to VMS on the VAX by autumn.

- 0 -

Hewlett-Packard Ltd, Bracknell, Berkshire, has clinched a £1m order to supply Mecca Leisure Group with an HP3000/950 RISC machine at the company's head office, with 150 Vectra PCs running a club management system in each of Mecca's nightclubs and social clubs.

- 0 -

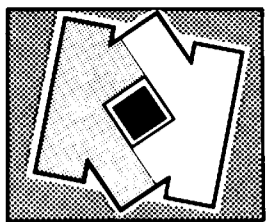
Cobol compiler specialist Austec International has developed a version of RM/Cobol for Unix systems and signed agreements for it with Hewlett-Packard Co and NEC Corp.

- 0 -

International Computer Systems Ltd, London, which builds systems around DEC hardware, has won a £1m contract to supply the Jordanian government with 800 packages of the Lex word processing and database management software from Ace Microsystems, Brentford, Middlesex: the contract was awarded by the UK Government's Crown Agents on behalf of the Jordanian government and will be funded by the UK Overseas Development Administration aid agency.

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Concurrent Computer Corp has reported third quarter net profit up 48.5% at \$3.6m, on turnover up 8.0% at \$69.2m; net profit for the nine months was up 132.6% at \$10.9m, on turnover that was up 12.7% at \$201.8m. Net earnings per share rose 48% to \$0.31 in the quarter, 132% to \$0.95 in the nine months.

- 0 -

Low and Bonar Plc - itself now the subject of bid gossip - is expected to complete the sale of its electronics division in two weeks time which should mean that Bonar August Systems of Crawley, Sussex, will find it easier to market its new 68020-based fault tolerant general purpose computer system, the CS3000 (UX No 177); the company, which has been up for sale since the beginning of March, admitted that "the present situation doesn't help."

- 0 -

Microsoft Corp says that sales of its Excel spreadsheet for computers based on the 80286 and 80386 are still growing month on month, suggesting that the product is beginning to eat into Lotus Development Corp's share of the market: Lotus is hamstrung by the delay in completing release 3 of its 1-2-3, and has a Unix version being developed alongside (UX No 175).

- 0 -

Apricot Financial Systems, Edgbaston, Birmingham, has entered into a distribution agreement with Toppan Moore, a Hong-Kong-based computer supplier, as its first OEM specialising in the financial services market in the Far East: Apricot's Quasar software runs both on the DEC VAX range and Apricot's Sequent-based VX 9000 multiprocessors.

- 0 -

Rapid Development Systems Ltd is to take on the exclusive UK rights of the System Builder 4GL for Unix environments - the Bracknell-based company will also sell Pick versions to end-users, and transfer existing Pick applications over to Unix: last year System Builder won the UK's first 4GL "grand prix" (UX No 119), and the Pick version is distributed by MajorGreen.

- 0 -

Cromemco is to show its new CS-4000 PolyProcessor for the first time at the European Unix User Show at Alexandra Palace, London in June: the machine features a VME-bus with multiple 68030 processors running Unix V.3.

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DEC "TO LAUNCH RISC-BASED ULTRIX WORKSTATION THIS YEAR"

Digital Equipment Corp is likely to end its isolation as one of the few major computer companies not involved in reduced instruction set (RISC) computing with the launch of a RISC workstation sometime this year, say a growing number of US sources. The new product, tipped to be available only in an Ultrix version, could be available by the third quarter of the year, say DEC analysts. DEC reportedly has a number of prototype RISC machines, running mostly as workstations, but faces a major re-write of its VMS operating system if it wishes to offer both operating systems. Efforts in this direction are unlikely to be ready for an autumn launch. DEC products have recently been under increasing pressure from proponents of RISC technology such as Hewlett Packard, and most recently arch-competitor Data General announced plans for a new generation of RISC-based systems using the Motorola 88000 chipset. DEC would not confirm its RISC plans, and President Ken Olsen, quoted in Computer Systems News, played down the significance of the technology by saying it is used by niche market players. "It's not an architecture, it's just an idea of how you manipulate the instructions", said Olsen.

AT&T CONCESSIONS COME TOO LATE FOR DISSIDENTS

AT&T Data Systems Group president Robert Kavner made what sounded rather like belated concessions last week in reaction to the setting up of the Open Software Foundation by seven Unix dissidents (UX 180). Speaking at a previously arranged three day meeting for customers and analysts, Kavner commented on the move in a hastily re-arranged schedule - and hinted that AT&T was considering spinning off its Unix activities to an independent body that would handle further development and licencing. "AT&T is willing to consider evolutionary steps towards transferring the ownership of Unix to an independent body", said Kavner, "but I do not think Unix is strong enough: it needs a couple more years of market acceptance". Kavner also stated that AT&T would be willing to allow at least some involvement by outside vendors in future Unix development work, currently being carried out by Sun and AT&T on the West Coast. He said that private offers being made to key companies would go beyond the scope of existing deals with firms such as Motorola and Unisys, which are restricted to beta test versions, but drew the line at a team effort. Quoted in Electronics News, Kavner said "History shows that's a very difficult thing to do". Certainly, one of the toughest problems facing the OSF development team will be just how it copes with melding the mass of incompatible code offerings from the various member companies into a single, coherent system. And another, apparently unresolved question concerns the terms under which companies such as IBM will licence their software to the independent Foundation - a potential minefield of problems. AT&T's Kavner was not impressed by the \$90 million initial funding of the group, saying that AT&T's investment in UNIX was now approaching the \$1 billion mark. He ruled out the possibility of AT&T joining the foundation, saying that by joining the company would "be putting Unix and the future of open systems in the hands of a foundation whose leading members are still consumed with their proprietary operating systems". But Kavner added "we will continue to work with the industry, including members of this group, to maintain a single Unix standard, and if they come up with something that the industry considers valuable we will applaud their efforts and incorporate it into the Unix System V standard".

PIXAR'S 3D RENDERING SOFTWARE ENDORSED BY GRAPHICS LEADERS

Leading lights in the workstation and graphics software markets including Autodesk, Sun Microsystems and Apollo Computer have backed Pixar Corp's RenderMan 3D rendering interface, with the implication that workstations could be standardised round the interface in the way that laser printers have standardised round PostScript. RenderMan is an interface between 3D modelling packages and the rendering facilities that turn the 3D wireframe models into shaded and coloured graphics images. Other companies backing the standard are Alias Research, Ardent Computer, Digital Arts, Intelligent Light, MIPS Computer Systems, NeXT, Prime Computer, Stellar Computer. As a result of the agreement, developers expect the work involved in adapting modelling software for different hardware to be cut.

NEC ADDS UNIX TO ITS INTEL-COMPATIBLE PROCESSORS

In what has turned out to be a rather longer wait than expected, NEC Electronics says it will at last be providing a Unix operating system for its 32-bit V60 and V70 microprocessors. The chips offer 8088 and 8086 compatibility at a far cheaper rate than Intel's own 80386, and at the same time avoid problems over availability. NEC first promised a Unix operating system back in October 1986 (UX No 96), but it is only now becoming available due to "pressure from users". The new operating system will have a real time kernel based on the Japanese Tron system: real time control applications have been a particular area of success for the chips, said the company. NEC remains in dispute with Intel over copyright issues on the V20 and V30 microprocessors.

POSIX COMPATIBLE ULTRIX DUE IN THE FALL

Posix committee chairman Jim Isaak, who is also DEC's Posix Strategy Manager, has revealed that Ultrix 2.4 is now out on field tests and will be available in the Fall. Ultrix 2.4 will be fully compatible with POSIX and X/Open interface standard.

THE GREAT UNIX SCHISM - WHY IT HAD TO HAPPEN

by Maureen O'Gara

Perhaps the most baffling aspect of the events that led up to the creation of the Open Software Foundation on last week was how AT&T ever allowed itself to get into a position where three of the biggest computer industry heavyweights were prepared to sink their differences and share a platform to denounce it. And the answer seems to relate directly to the personalities involved, most notably Vittorio Cassoni, the former head of AT&T Data Systems, now back at Olivetti.

Until the start of this year, AT&T made new releases of Unix available to every manufacturer that wanted them at the same time. True they were installed first on AT&T's 3B line first, but AT&T was seen as such a pussycat in the market, and the 3B as such a dog of a product that nobody minded that very much. But in October last year, Cassoni had come to the conclusion that AT&T's computer strategy needed a complete rethink if the company was survive as a serious player.

Pussycat

The parent's research arm, Bell Laboratories, had its own RISC microprocessor under development, but Sun Microsystems had already announced the Sparc, got a string of chipmakers to produce it in a range of performances, and was offering it in a product, the Sun-4. Cassoni decided that the time it would take for Bell Labs and AT&T Data to reinvent the wheel was simply too long, and cut his deal with Sun, committing to build the successor machines to the 3B line around the Sparc. And, with what at first sight might have been a logical move, if naive, that meant that - as it had done with the 3B - AT&T would in future be putting new releases of Unix first on the Sparc - after all, Sun was doing most of the Unix development work anyway. But if competitors complaisantly saw AT&T and the 3B as a pussycat, they saw Sun, and with good reason, as a tiger. At a stroke, Sun would be in an intolerably privileged position vis-a-vis its rivals, and the other four biggest players in the workstation market, Apollo Computer, Hewlett-Packard Co, DEC and IBM, not surprisingly exploded. Because Sun Microsystems was not reticent about its good fortune: on the contrary, say competitors, in February, after AT&T had agreed to cement their relationship with phased cash injections, the company's representatives started telling them that if they wanted to get the latest releases of Unix, they would have to sign to use the Sparc in future products. Xerox Corp had already signed for the Sparc and Unisys Corp and ICL agreed to do so as well. But that was as far as Sun got, and at the Uniforum trade show in February, AT&T luminary Jack Scanlon was confronted by a furious mob of the great and the good in the commercial Unix world, all demanding to see Cassoni for a showdown. They confronted Scanlon with the demands they had received from Sun, and Scanlon flatly denied that any such policy with regard to the Sparc was in force - and was handed copies of Sun promotional material containing the offending demand. They went away thoroughly dissatisfied, and the seeds of the Open Software Foundation were sown. The scene shifts to Bell Labs. The chip designers there, well down the track with development of their own RISC, the CRISP, were not surprisingly a little miffed to find that their efforts had been called into question and that the computer upstarts were instead betting the shop on a RISC bought in from outside the house. Miffed enough indeed that a report was commissioned from Dataquest for a detailed comparison of their part with the Sparc and the other then leading RISCs on the market: the Intergraph Clipper and the unnamed one developed by MIPS Computer Inc; one or two others may also have been included in the study, that is not clear, but at all

events, the lads and lasses at Bell Labs got what they wanted: compared feature by feature with the other parts, the Sparc on balance is understood to have come bottom of the tree. Far from being a monolithic whole, AT&T these days is a collection of now very disparate businesses, but whatever it may be seeking to become, it is still at bottom what it always has been - a telephone company, pure and simple. And the techies at Bell Labs weren't the only ones to be offended at the snub delivered to the company's own RISC development: it may be a little galling to have to get your personal computers from an upstart Italian, but personal computers are hardly leading edge technology, and for AT&T to have designed its own copy of the IBM machine would have simply been stubbornly reinventing the wheel. But AT&T justifiably prides itself on its own technology, and here was the computer division that was meant to be a key part of the future of the company saying that in future AT&T's leading edge computers were going to be based on an alien technology, a technology, moreover that an independent consultant seemed to be saying was inferior to its own. The AT&T telephone chiefs put their collective foot down: Cassoni and Data Systems could do what they liked, but where AT&T computers were needed in telephone systems and products - PABXs for example - they were damn well going to be true AT&T computers, not hybrids based on a design by some wet-behind-the-ears start-up firm that sounded like it was Japanese out on the coast.

Jetting

While all this was going on within the company, Carlo de Benedetti was jetting back and forth across the Atlantic trying to persuade AT&T to put more money into Olivetti, and then changing his mind when AT&T said fine, but more cash means management control, and as his need for cash became less pressing. And only a few days after the partners had declared that there were "significant differences" between them, Cassoni was on his way back to Ivrea to take over as managing director of Olivetti. There has been much public comment that the loss of Cassoni was a body blow to AT&T Data Systems, and the appointment of an accountant in his place only accentuated the perception that AT&T Data's days were numbered. And Cassoni was certainly responsible for giving a totally demoralised company a sense of direction and a new belief in itself, he did stem to a considerable extent the flood of red ink from Data Systems, and was able to get his own dedicated sales force where his predecessors had failed. But there is also a widespread feeling in the company that Cassoni's agreement with Sun has left AT&T in a well-nigh impossible position, and Robert Kavner's first task, before he can get to grips with running the business, has to be to try to repair the damage he has inherited. That the plotters went ahead with their plan for the Open Software Foundation is a very bad sign, but otherwise he has made an unexpectedly good first impression, and his statement late last week that AT&T would consider handing over Unix development and licensing to an independent body once it is strong enough to stand on its own - in a couple of years perhaps - is encouraging. But in the meantime, the battle he faces for the soul of Unix looks forbiddingly daunting.

HEWLETT-PACKARD EXTENDS X400, MAP FACTORY OFFERINGS

Hewlett-Packard Co has extended its commitment to the Open Systems Interconnection standard with the announcement of six new networking products in the message handling and factory automation arenas. HP OfficeConnect to X400 supports exchange of electronic mail on HP3000s with alien computer systems implementing X400, including DEC All-In-1 and Computer Consoles-ICL Officepower. It costs £30,000 from the fourth quarter. X400 for NetDelivery enables users of the NetDelivery Application Program Interface to write applications that can share information with systems based on ~~proprietary protocols such as TCP/IP~~. Available next year, it will cost from £2,300 on HP3000s. In the factory arena, HP MMS Manufacturing Message Service software enables HP9000 Unix machines to talk to both Manufacturing Automation Protocol-compatible devices and with other computers on the factory floor. HP FTAM File Transfer Access Method enables HP9000s access and transfer files on alien computers on the plant floor; it starts at £1,500. HP OSI Express MAP 3.0 is a board to interface Hewlett computers to the network with both broadband - £6,000, and carrierband - £7,000 cabling; prices include MMS software. And HP MAP 3.0 Protocol Analyser monitors IEEE 802.4 local net traffic on-line: it is integrated with the OpenView network manager. All the factory products are out in the fourth quarter, or the first half 1989.

LOGITEK TO DISTRIBUTE SONY WORKSTATIONS IN THE UK

Sony Corp has won a major distribution deal in the UK by appointing Logitek Computer Products, Manchester, as its sole distributor. Sony launched its NEWS family of workstations into Europe and America back in April after overtaking both Sun and Apollo in the Japanese market. Logitek, which currently distributes Altos supermicros, Wyse terminals and printers, and 3Com communications, says the product fits in well with its current strategy. "We have specialised in Unix and Ethernet", said Logitek Managing Director Jim Pickup "and are confident that the Sony workstations will find a wider marketplace than the traditional one of computer-aided software engineering". Other markets currently targeted are desktop publishing and financial dealer applications. Pickup estimated the workstation marketplace for this year would be worth some £250 million, and by 1991 would have increased to £550 million in the UK. "The timing of the Sony deal is ideal for us", claimed Pickup "and we are looking to establish a large relationship with the company". Sony says it has ambitions to become one of the top three workstation suppliers. Logitek, which claims to be the world's largest distributor of Wyse equipment, will the Motorola-based dual-processor 700, 800 and 9000 series workstations.

WILL THE REAL UNIX PLEASE STAND UP?

The setting up of the Open Software Foundation is something that everybody wants to express an opinion on: reactions have been flooding in since the announcement last Tuesday. Most come into the positive or non-committal categories. Unisys Corp, officially in the AT&T/Sun camp since its endorsement of the SPARC, issued a very careful statement from Chairman and CEO Michael Blumenthal. "The OSF initiative recognises that the real user demand for an open computer environment and for a standard Unix operating system in particular cannot be ignored. What is not clear is whether the initiative will genuinely contribute to the timely standardisation and expansion of the UNIX system. The answer to that question will ultimately determine the position we take in respect to OSF. ICL, also involved with the SPARC, still regarded OSF as an endorsement of its Unix policy due to the reliance on POSIX and X/Open. The more critical reactions tended to come from those nearer to the user. ABS, a major UK systems supplier based in Brighton, condemned AT&T for provoking the reaction, which it said would damage the market. "While there is a single Unix standard, manufacturers are forced to differentiate products through function and price/performance, which puts them under immense pressure but is ultimately good for the user", said ABS marketing manager David Favre. He said that rival manufacturers with artificial unique selling points would force up end user costs. Also critical was Robert Saunders of workstation software suppliers Precision Visuals International. "It will only muddy the waters of standardisation in the short term", said Sanders, "but in the long term, I believe it will accomplish its professed goals. It would be a big mistake for Sun to allow itself to be positioned by competitors as the vendor providing proprietary solutions". Sun itself said it had not ruled out joining OSF, although Barry Jones of Sun UK said he was sceptical of the practical workings of the group. But Peter Griffiths of Unix consultants The Instruction Set said the move would be of benefit to the industry. "Why should we suddenly become supporters of monopoly practices when it comes to UNIX? This monoism results from a purist misunderstanding which ignores the efforts of standards bodies to define in isolation from implementation and fervently declaims "there is only one real UNIX, one real UNIX...".

MIPS IN FERMILABS DESIGN WIN FOR ACP PARALLEL PROCESSOR

The Fermi National Accelerator Laboratory, Batavia, Illinois, has chosen MIPS Computer Systems RISC processors as the computing engine for its next generation Advanced Computing Program multiprocessor. Fermilab specialises in elementary particle physics research, and to cope with the processing of large volumes of data designed a series of ACP parallel processing computers using up to 100 Motorola 68020 or Western Electric WE32000 processors. Thomas Nash, head of the Advanced Computing Program, said that the greater power of the MIPS' R3000 chips, rated at 20 mips, were necessary to run projects that could require several hundred VAX years of computing time each. "Our next generation of the ACP computer will be primarily a MIPS-based machine", said Nash. ACP computers have been installed at research and educational institutions such as Yale University, Los Alamos National Laboratory, Montreal University, the Swiss National Laboratory, and Brookhaven National Laboratory.

TADPOLE BUYS US SUBSIDIARY - OPENS BOSTON OFFICES

As anticipated last month (UX 174), Cambridge UK-based Tadpole Technology is expanding its US operations with the acquisition of its American distributor and the opening of new offices in Boston. Tadpole, which designs and manufactures 32-bit processing systems for customers such as Ericsson, Plessey and British Telecom, opened a subsidiary operation in Dublin, California back in August last year (UX No 140) and took 35% of the company's equity. It has now acquired the outstanding equity in Tadpole Technology Inc, and is relocating the company from Dublin, California to San Jose. The new Boston location will be used by Tadpole as its international marketing headquarters as well as its Eastern region sales office. Chairman Bob Gilkes claimed that half of Tadpole's business was now coming from the US: "this has led us to develop our American activity earlier than originally anticipated". Tadpole recently announced products based on Motorola's 88000 RISC chipset.

POINT 4 MOVE MINIS TO RISC - ANTICIPATES UNIX DEVELOPMENTS

Point 4 Data Corporation has added two new minicomputers to its range, based on a proprietary RISC architecture derived from its previous CISC systems. The company has established a market for itself in the Data General Nova-like business, and runs the IRIS operating system designed for transaction-oriented applications on its minicomputers: Point 4 claims that IRIS has now been delivered to more than 28,000 installations worldwide. The Mark 12E deskside system supports up to 128 users and is rated at 15.6 MIPS, and the Mark 6E is a 6.25 MIPS system. Both will run software for the company's low-end CISC-based machines. Point 4 was rumoured last year to be involved with the now defunct Enmasse Corporation in a project to establish a range of Unix products at the low-end. This was decided at the time to be "against the company's interests" and was withdrawn. A Point 4 spokesman said that the Unix project had now been re-kindled, this time concentrating on the high-end, implementing a RISC chip from Motorola, Sun or MIPS. Results are expected in about a year.

SYMBOLICS TO REDUCE WORKFORCE BY 225 TO REDUCE ITS COSTS

Facing up to the need to reduce operating costs by over \$15m a year, Cambridge, Massachusetts-based Symbolics Inc has embarked on a programme to reduce its worldwide workforce by 225 people, and lay-offs have begun. The firm's new marketing strategy is to distribute its technology through software products, co-processor boards, systems integration services, and co-operative OEM and reseller channels, and until the new Ivory-based products are ready, it must reduce its overhead to bring it in line with the likely sales of its 3600 series of symbolic processing Lisp workstations.

INFO TECHNOLOGY USER ASSOCIATION GETS SET TO

TEST X400 MESSAGE HANDLING

The Information Technology Users Standards Association, ITUSA, is setting up a pilot to test the viability of X400 message handling products currently available. Chairman Ray Walker believes that only a tiny number of users are using the X400 messaging standard at present despite a great deal of interest being expressed. Two factors are to blame for the low usage, claims Walker: lack of available products and the high tariffs charged by British Telecom for its public message handling service. A government report released last month which reviewed the progress of suppliers in implementing the Open Systems Interconnection standard was also critical of manufacturers slow progress in the X400 arena. Now the ITUSA wants to raise the profile of X400 and has invited 40 members to take part in a two-phase trial which will first test simple X400 communication between MS-DOS micros, and second, test dedicated hub systems with store-and-forward facilities. Other, more demanding tests are to be introduced at a later date, which will introduce links with other systems and services, and investigate a variety of information types.

PHOENIX TECHNOLOGIES TO GO PUBLIC

Phoenix Technologies Ltd, Norwood, Massachusetts, the designers of the VP/ix for running DOS under Unix on Intel-based machines, plans to go public next month with an initial offer of 2.8m shares at between \$13.50 and \$15.50 apiece, and looks to use the \$27.3m estimated net proceeds to repay short-term debt, and possibly for acquisitions in fields related to its IBM-compatible ROM personal computer BIOS specialisation. Underwriters are Montgomery Securities and Paine Webber Inc.

HARRIS OFFERS MICROCONTROLLER VERSION OF ITS FORTH CHIP

Melbourne, Florida based Harris Corp has launched the first standard product to be built around the Forth-based RISC core processor originally developed by Novix Inc of Cupertino, California (CI No 698). Priced at \$190 in the US the Harris RTX 2000 is a 10MHz 16-bit programmable microcontroller rated by Harris at 10 MIPS for embedded real-time applications and is the founder member of what will be a standard product line of real time embedded controllers aimed at vision systems, robotics, digital signal processing and real-time artificial intelligence applications. On chip features include parameter and return stack memories, single cycle 16 by 16 hardware multiplier, an interrupt controller plus three general purpose timers. It also boasts an ASIC Bus which provides a parallel communications interface to ASIC peripherals for system enhancements such as hardware acceleration or design flexibility through application specific input-output. The company claims the RTX 2000 is the first microcontroller to execute Forth code directly, thereby eliminating the need to revert to assembly language when programming for real-time applications. It also plans to add cross compilers for C, Prolog and Ada languages. Samples of the RTX 2000 are available now and production quantities will be available in the third quarter, and there are plans to introduce a simplified version for lower complexity applications some time in the next quarter.

SYBASE RELEASE 3 BRINGS FAIL-SAFE DATABASE OPERATION TO VAX, PYRAMID, SUN

Sybase Inc claims that the recently announced Release 3 of its Sybase SQL-based relational database management system is 100% faster than its Release 2.1 precursor, and can offer the kind of performance previously available only with mainframe computers. Substantiation is provided in the form of reports which confirm that during TPI-based transaction processing performance trials with 600 simulated users, the Sybase Dataserver was measured at 29.3 transactions-per-second and a 0.68 second response rate on a VAX 8700, and 22.7 tps and a 0.88 response time on the Pyramid 9820; on a Sun-3/280 simulating 450 users, Sybase performance was 19.1 tps and a response time of 0.78 seconds. Sybase also claim that Release 3.1 of the product - due to be shipped in the current quarter - is the first of its kind to offer fault-tolerant features for VAXcluster, VAX, Sun and Pyramid machines. Essentially, it offers on-line recovery in the shape of a Companion Server, running on a separate CPU in a VAXcluster environment, and provides VAX, Sun and Pyramid mid users with software mirrored databases and transaction logs. Additional Release 3 performance enhancements include overlapped input-output, shared buffers and commits, locking and network organisation, while single-user performance levels have been upped by improved memory usage, buffering and optimisation of query processing paths. Initial licence prices for the Dataserver range from £14,550 to £21,850 for Sun-3 and Sun-4 respectively, £14,550 for the DEC MicroVAX through to £72,750 for the top-end VAX 8800, and from £7,300 for the Pyramid workcentre through to £72,750 for the 9840; Companion Server prices will be fixed at 10% of the original licence fee right across the VAX range.

STELLAR UPS FINANCE TO 48m

Stellar Computer Inc. Newton, Massachusetts, has raised \$18 million in its third round of venture financing, bringing the total raised by the company to \$48 million; the shares in the latest round were sold at \$6.75 a share, valuing the builder of the GS1000 graphics supercomputer at \$130 million. The company had intended to raise \$10 million - the cash its business plan projected it would need to see it through 1989 - in the latest round, but there was so much demand that it took advantage of the opportunity to raise another \$8 million. Goldman, Sachs & Co handled the placing and \$10 million came from 25 first time investors in the company while existing backers chipped in the \$8 million.

DEC OFFERS ORACLE AND INFORMIX WITH ULTRIX

Digital Equipment Corp. is opening up its database policy for Ultrix-based VAXes in the US, by signing up distribution agreements with Oracle Corp and Informix Software Inc. Both agreements grant Digital non-exclusive U.S. marketing rights to the products, which include Oracle's RDBMS, fourth generation language tools and decision-support software, and Informix Software Inc's Informix-4GL, Rapid Development System, SQL, ESQL/C, Turbo and C-ISAM. Software will be marketed on the full range of VAX processors running Ultrix from the MicroVAX II and MicroVAX 3000 series up to the newly announced VAX 6800 and 8800 series, and the deal includes joint promotions between DEC and the software vendors. So far the agreements are US only.

CYDROME ADDS WORKSTATION CONNECTIVITY TOOLS - INFORMIX FOR THE CYDRA 5

Supercomputer specialists Cydrome Inc has launched new software to aid the integration of engineering and scientific workstations with the Cydra 5 distributed dataflow supercomputer, marketed in Europe by Prime Computer. Teamware allows users of Sun Microsystems and Silicon Graphics design systems to access the simulation resources of the Cydra 5. The product range includes the Cydrix Cross-Environment, Cross-FORTRAN 77, and X.Windows. Working under the workstation's windowing system, Cydrix Cross-Environment provides transparent access to Cydra 5 execution resources, allowing users to compile a program locally (using Cross-FORTRAN), execute the program on the Cydra 5, and view the results at the workstation, with all network transfers managed automatically. In addition to Ethernet with TCP/IP protocols, Cydrome's networking support now includes DECnet, Network File System, Remote File System and MXLINK. The Cydrix 5.3 supports multiple user interfaces, including the VAX/VMS VCL interface, and PSHHELL from Prime's PRIMOS operating system. In a separate announcement, Cydrome has announced an agreement with Informix Software Inc to make its database products available on the Cydra 5 distributed dataflow supercomputer, marketed in Europe by Prime Computer. Primarily a Fortran engine, Cydrome is aiming to broaden the appeal of the Cydra 5 with a wider range of software tools and applications. "The data management, retrieval, and reporting capabilities of the package are well suited to engineering and scientific requirements", said Cydrome VP Robert Hesser.

OLIVETTI BOOSTS PC SALES TO AT&T

Despite the differences between the two companies, business is business and life must go on, and so sales by Ing C Olivetti & Co of personal computers to AT&T Co in the first four months of this year were 44,700, more than the 44,000 AT&T took in the whole of 1987, and the total for this year is expected to reach 120,000 to 140,000, Carlo de Benedetti told the Olivetti annual meeting in Ivrea last week: he also said that overall sales for the first four months were up 12% at the equivalent of \$1,730m; the Italian looks for its worldwide personal computer shipments to rise 35% in volume this year to 500,000.

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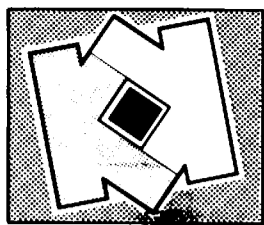
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Microsoft Corp has been granted a request to separate the suit filed against it by Apple Computer Inc into two separate parts - one relating to the 1985 licence agreement between the two, the other to the "look and feel" issue: Microsoft reckons that the licence issue is the key to the entire case, and that if it is settled in Microsoft's favour, the rest of the suit will lapse; the licence issue could be heard "as early as" October, but the look-and-feel issue will likely have to wait until late 1989, and might not come to trial until 1990.

- 0 -

Three French computer manufacturers - Matre Datasysteme, Bull MTS and Forum International - have all signed up to offer Micro Focus plc's Level II Cobol/AT toolkit as a set of Cobol development tools to their system users: the products were announced at the recent Sicob exhibition in Paris, where particular interest was reportedly generated from the availability of the company's latest Cobol/2 compiler for MS-DOS, OS/2 and Xenix/Unix environments.

- 0 -

Pyramid Technology has just pulled off its biggest single machine sale in the UK by supplying Oracle Corp here with one of its top-end 9840 Unix minicomputers: Oracle has bought the £750,000 machine to run part of its internal management systems, and will use it to carry its licence database, accounts, and customer support, training and education systems; the 9840 is rated at 25 MIPS and includes 128Mb of memory, and 8Gb of disk storage.

- 0 -

Thorn EMI Plc's Datasolve Business Services Ltd in Sunbury-on-Thames, Middlesex, has created a new Total Solutions division to offer accounting, distribution, payroll, and personnel systems on IBM micros and Altos Computer super-micros: the division will sell systems priced between £50,000 and £100,000 and reckons that it is looking at a market that accounted for sales worth £250m in the UK last year.

- 0 -

The shortage of memory chips is "getting to be intolerable", KayPro Corp chairman Andrew Kay told USA Today, adding that the \$616,000 KayPro lost in its most recent quarter could have been wiped out if chip supplies were increased and prices dropped: USA Today adds that Sun Microsystems Inc is having to send employees around the world to seek out scarce commodity memories, and the shortage is now expected to extend at least until early 1989.

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In fact, the acute memory chip shortage and consequent soaring prices has led Sun to impose a memory surcharge across much of its workstation product line, particularly affecting add-on memory: Sun has raised these by 50% to \$750 per megabyte for the Sun 3/60, 386i, and 3/100 product lines, and by 38% to \$780 per megabyte for the Sun 4/200 product line: Sun CXP graphics workstations and graphics accelerator board prices have also gone up.

- 0 -

Unisys Corp claims that revenues from sales of its Unix products, which it began shipping in volume in 1985, are expected to approach \$800 million in 1988, so its no surprise to hear the company's value-added-resellers are also benefitting: Ibis Business Services (it used to be called BLK) says it has now implemented its Ibis distribution software package at over 60 sites in the UK, and will be moving to expanded premises in Bromley, Kent, in order to cope with the upturn in business.

- 0 -

NCR Ltd has secured a \$10m order for its Unix-based Tower and Xenix micros systems from DHL, the international air express company: the deal is for eight Towers and 30 personal computers which will be used by 35 of the company's 145 African offices to access DHL's worldwide tracking and tracing system and to provide financial and office automation facilities.

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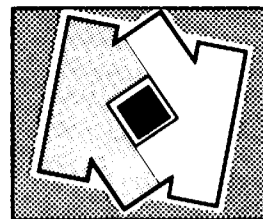
SMT Goupil Ltd in the UK now has the new top of the range G5 386/20 machine from its French parent: the G5 costs £5,995 and has a 60Mb hard disk and a processor running at 20MHz; operating systems supported include Xenix, OS/2 and MS-DOS, and that Gallic favourite, Prologue.

- 0 -

Valid Logic Systems, San Jose, says that Sun Microsystems Inc has signed to buy Valid's end-to-end electronic design automation systems for printed circuit board and systems design: the contract is estimated to exceed \$1m, and with the Access software configuration program, Sun will do a design environment in which each application software package becomes a network resource available to each user.

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Encore Computer Corp has signed Berita Information Systems Bhd as exclusive Malaysian distributor for its Multimax range of parallel Unix machines under a three-year agreement valued at \$5m: Berita, based in Kuala Lumpur, will also sell Encore's Annex terminal servers and says it has already installed a Multimax system at the New Straits-Times Malaysian newspaper offices.

- 0 -

Scientific Computer Systems Corp, San Diego, and Computer Associates International Inc, Garden City, New York, have signed a joint marketing agreement that will make CA-Disspla and CA-Tellgraf programmable and end-user graphics systems available on Scientific's minisupercomputers: Scientific gets non-exclusive, worldwide marketing rights to the products on its family of 64-bit, Cray X-MP/416-compatible machines.

- 0 -

Mountain Computer Inc says that its FileSafe line of 60Mb, 150Mb, 300Mb and 600Mb tape backup systems for IBM PS/2 computers are now compatible with Santa Cruz Operation's Xenix 286 PS/2 and SCO Xenix 386 PS/2 operating systems: most FileSafe models are available in both internal and external configurations, with prices starting at \$1,395 - the drivers for the FileSafe line will be included with the upcoming release of SCO Xenix version 2.3, drivers for version 2.2 are available now directly from Santa Cruz.

- 0 -

Further endorsement for the Motorola 88000 RISC comes from Informix Software Inc which has announced that its relational database software will be available for the 88000 as soon as the chip is ready.

- 0 -

Sun Microsystems Inc has formed a wholly-owned subsidiary, Sun Asia Group, to provide sales, service and marketing support to its users in the People's Republic of China, Hong Kong, South Korea, Taiwan and in other Southeast Asian nations.

- 0 -

Siemens Ltd, Sunbury-on-Thames, now has those 350Mb capacity versions of its MegaFile range of 5.25" Winchester drives available: the company claims the drives - Model 4410 with ESDI extended small disk interface and 4420 for SCSI small computer interface - offer a data transfer rate 50% faster than rivals - about 15Mbytes-per-second; no prices.

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CULLER RE-EMERGES WITH CUSTOMER BACKING AND EUROPEAN SUPPORT

Preparing for what he calls a "focused supercomputing" system due for beta testing by the end of the year, Glen Culler's Culler Associates Inc has bought back the assets, patents and software technology of Culler Scientific Systems Inc from the Saxpy Computer Corporation. Culler Scientific ran out of cash in July last year, and sold Saxpy the technology of its Culler 7 minisupercomputer and the recast PSC Personal Super Computer version. But after cutbacks of its own, Saxpy apparently decided against using the Culler technology for its own Matrix 1 supercomputer (UX No 140). Now Culler's 12-strong research team are completing development of the Culler 8 PSC, a VLSI ECL extension of the Culler 7 architecture claimed to have five times the scalar and ten times the vector performance of the old machine - that's 300 plus MFlops for a cost of around \$300,000. The system consists of a three card set; controller, memory board and x/y processor, on 6U VME boards that will slot inside a Sun 3 workstation - although in theory the front-end can be any Ethernet machine with PCP/IP and NFS, perhaps a DEC MicroVAX. A globally optimising back-end compiler optimises concurrency on both scalar and vector processing for front-end Fortran 77 and C compilers. Formed in April, Culler says funding is coming from sales of the Culler 7 PSC, which is offered as a development system for customers interested in upgrading next year. One customer, the Centre for Water Research, Perth, Australia has already taken up the offer, and three other possibilities in the US are near to signing, says Culler. No distribution deal has been struck in the US so far, but in Europe Compass Systems of Newbury, Berks has taken on the machine, and offered Culler "a proportion of good faith and cash" according to Marketing Manager Chris Arnold. The finished product is expected "within a year". A Culler 8 PSC is expected to be integrated into a Sun 3 for a cost of under £10,000.

AS NEWCOMER INTERNATIONAL PARALLEL LAUNCHES "CHEAPEST SUPERCOMPUTER"

A new player in the supercomputer market, New Bedford, Massachusetts start-up International Parallel Machines Inc, showed off its new IP-1 computer in Boston recently, claiming support for up to 33 RISC processors for a maximum performance of 264 MIPS and 528 MFLOPS - at a cost of under \$1,500 per MFLOPS in raw performance and under \$4,000 per MFLOPS on the 64-bit Linpack benchmark. The system uses AMD29332 micro-programmable processors from Advanced Micro Devices for integer processing, and Weitek's 2264/2265 chip-set to handle floating point. The system runs a real-time implementation of Unix, developed in-house. According to the company, the IP-1's key feature is that any number of processors can access up to 32Mb of shared memory at the same time without arbitration. Additionally, each processor has its own 8Mb memory and local bus for handling memory an I/O. A global bus oversees communications between multiple cpus, and both buses run at 80Mb/sec, according to International Parallel. Other features include Flash Data Transfer, an interconnection network that enables a processor to pass 1Mb of data to another processor in under one microsecond; and a database with 32-bit address range, which since the machine uses 64-bit words, can extend to 4G-words - that's 32Gb, and can be extended to 48-bit addressing. Over 200 vector, matrix, and parallel routines are included in the standard library for scientific and engineering applications. Prices range from \$89,000 for a dual cpu system, up to \$860,000 for a fully configured 33 processor machine, and are available four months after order. International Parallel was formed in 1980, but this is its first product to reach the market.

SUN AND TOSHIBA CO-DEVELOP SPARC LAPTOP

Sun Microsystems is out to prove the scalable qualities of its SPARC RISC processor in its latest co-development activity with Toshiba Corp: the pair are developing a Sparc-based laptop that is expected to deliver more than 7 MIPS performance, comparable with that of the Sun 4, which Toshiba is selling as its AS4000 Series (UX No 173). Sun is now pushing hard to win Asian business through its Far Eastern subsidiary operation run by Ieni Matheson, and is reported to be concentrating on persuading Taiwanese and Korean clone-makers to produce low-cost workstations around various versions of the Sparc. Matheson has been conducting Sparc seminars in those countries aimed at forging what it calls Applications Binary Interface alliances with the major Asian manufacturers. Sun has presumably been encouraged to look at the PC market by the success of its own 386i workstation, which runs MS-DOS as a task under Unix, which is said to have already attracted orders in excess of the total intended production run. Toshiba announced a 386-based Unix laptop back in January (UX No 163).

JOBS' NEXT WORKSTATION "OUT ON JUNE 16TH"

After three years of development work, the rumour is that Steve Jobs is about ready to launch the Next Inc scholar's workstation. International Business Week hears that the machine, said to be a jet black cube with two eight-inch loudspeakers for hi-fi sound and highly sophisticated graphics (Jobs' other company is Pixar Corp) will see the light of day on June 16th in San Francisco. Pricing is expected to be in the \$3,000 to \$5,000 bracket.

NAT SEMI SPECS "NEAR-RISC" PROCESSOR

Following National Semiconductor's denial that it was working on RISC technology - it said that the RISC elements already used in the 32000 Series would be "perpetuated in future product developments" (UX No 178) - Electronics magazine has uncovered specifications for what appears to be the source of the rumours. A forthcoming part called the NS32764 is being confusingly described as a "complex reduced instruction set computer". It is said to be complex enough to emulate the NS32000 instruction set, but reduced enough to execute all instructions in 1.5 to 3 cycles, compared with 1.25 to 2 cycles for a typical full-blown RISC chip. Launch date is expected to be late 1989.

DG PREPARES FOR RISC WITH REVISED DG/UX

Data General is paving the way for its forthcoming RISC products with a release of a revision of the DG/UX operating system that should introduce a high degree of compatibility with the RISC products. The new version of DG/UX, which runs in native mode on DG's MV series of minicomputers, is due out within six months. It is expected to form the basis of the operating environment that will be standard on the RISC series, which is to be based on Motorola's 88000 processors. Features of the release include multiprocessor support and enhanced file system security, and DG is expected to promote it as a means of preparing for the 88000 products.

VME BOARD BUILDER PLESSEY MICROSYSTEMS BECOMES RADSTONE IN MANAGEMENT BUYOUT

Having expressed "disappointment" with the results of its microelectronics and components division, Plessey Co Plc yesterday afternoon announced that part of the business - Plessey Microsystems - was to go in a management buyout. The company, now known as Radstone Technology Ltd, will be headed by former managing director Dr Charles Paterson and funding was supplied by a syndicate of investors led by 3i. Based in Towcester, Northamptonshire, Radstone employs 410 staff and supplies OEM microcomputer products for commercial, industrial and military/aerospace applications, and last October introduced a single board computer based on Motorola's 68030 processor (CI No 796). In its four years of operation it has captured a large part of the VMEbus market, becoming the largest UK manufacturer and claiming number three worldwide. The company uses Motorola's V/68 port of Unix for the VME range, and bundles it with a full selection of device drivers applicable to the appropriate peripherals. The company also integrates VTRX from Ready Systems, allowing developers use Unix for development work and port the results down to a real-time environment. Unix spokesman Ken Newton said the change of ownership would not be affecting product strategies. The company has been a leading supplier to NATO defence programmes, particularly within the UK, and Dr Paterson stressed that links with Plessey will not be broken, saying that Radstone "will continue to be a major supplier of commercial and military products for Plessey's defence and telecom systems." Neither party was willing to discuss how much the deal was worth, but Plessey Microsystems turned in a "small loss" on turnover of £25m for the year to April 1, and has assets of some £10m.

NEW AT&T CHIEF THROWS DOUBT ON OLIVETTI ALLIANCE

AT&T Co's new Chairman Robert Allen really put the cat among the pigeons last week by saying that as part of the general review of the alliance between AT&T and Ing C Olivetti & Co, AT&T might not in the future buy all its personal computers from Olivetti. The remark caused AT&T to rush out a statement soon after, saying that it had no plans to reduce its purchases of personal computers from Olivetti. AT&T added that it was reassessing its partnership with Olivetti. Allen had said that when AT&T picked a supplier for personal computers, it "may not turn out to be Olivetti". Equally, it was implied, AT&T might try to find other European outlets for its 3B Unix CPUs, and Olivetti might stop selling them. The remark was made on Tuesday, but it was not until Thursday that there was widespread selling of Ing C Olivetti & Co shares on the Milan Stock Exchange. The Wall Street Journal noted that "the news was so slow to reach the market because of a widespread journalists' strike in Italy".

DR AMDAHL SPEAKS OUT ON OSF AND UNIX

Over in the UK for the Third Computer Measurement Group annual conference in Harrogate last week, Dr Gene Amdahl gave his views on current developments in the computer industry. After discussing the limitations of IBM and DEC, Dr Amdahl turned to Unix. With the Open Software Foundation, he said, IBM is now trying to prevent AT&T doing what IBM had successfully done in gaining control of its operating environment. "AT&T is trying to do what IBM did but IBM doesn't like it," he said. Not that the good doctor rates Unix. "It has gained support in universities because Unix is a good development environment but it is not a good production one. University graduates ask for Unix because Unix's shortcomings have not yet been brought home to them."

SONY ADDS VALUE TO NEWS WORKSTATIONS

Sony Corp has released the NWP 540, an image reader for its News Unix workstation: it costs \$3,600 for the scanner, plus \$4,000 for the NWB242 image generation board that goes with it, and \$1,000 for the NWA031 sheet feeder; all will be available on October 21. And Sony has come up with a News program that is designed to translate documents between Japanese language word processors and the Unix environment on the News: the core is Sony's Common Document File Format, and the \$1,600 program is also due out on October 21. And Sony has also joined forces with KnowledgeSet Inc in the US to develop a Compact Disk Read-Only Memory program, KRS, that is designed to read not only documents but images and figures from a Compact Disk - and Sony has adapted it for the X Window System: the American version of the KRS will be released in Europe and the US this summer, the Japanese version in the autumn, but prices are not yet set.

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HEWLETT PACKARD TO LAUNCH TWO MORE WORKSTATIONS

Two months after it launched a whole series of business and scientific machines (UX No 174) Hewlett Packard Corp is set to introduce two more Unix workstation models this month in its Motorola-based HP 9000 Series 300 Series, according to Electronics News. Replacing the Model 330, the new 9000 Model 360 will have a similar price, but have approximately twice the power of the older system, according to HP: it uses a 25Mhz 68030 processor and MC68882 floating point unit, and memory is expandable from 4 - 16 Mb. Also to be launched is the HP 9000 319SRX, a low-cost workstation said to be suitable for 3D wireframe graphics, likely to cost under \$10,000. At the same time, HP is upgrading its printed circuit design software to include support for surface-mount technology, and integration with the HP design capture system.

ARIX EXPANDS DISTRIBUTION CHANNELS

Arix Systems Corp, San Jose, California, said earlier this year that it was looking to appoint four regional distributors in the US by mid-year in a bid to re-vamp its distribution channels into a two-tier system. It has now announced the first: Microscience Corporation of Atlanta, Georgia will sell Arete systems in ten southeastern and mid- Atlantic states in a three year contract estimated to be worth £12 million. Arix vice president, Mike Lambert, said that negotiations with other dealers were progressing satisfactorily. "We're making progress, as will be evidenced in announcements", he said. In the UK the most recent Arix hardware will be seen for the first time at the European Unix Show at Alexandra Palace: the 128 user 825 and 256 user 850 systems are also to be used by Fortune as the basis for its Formula 8000 systems.

IBM JAPAN BACKS GALAXY RIVAL TO TRON...

Mamoru Maekawa, another professor at the University of Tokyo, is proposing a rival operating system standard to his sibling, Professor Sakamura's Tron - and would n't you just know it, just as its parent is backing the breakaway Alternative Unix Foundation, so IBM Japan is backing Galaxy. According to Newsbytes, scholars at 16 laboratories and 12 universities, as well as IBM Japan, are participating in development of a next-generation computer system based on the Galaxy operating system. Galaxy is described as a new concept based on Integrated Service Digital Network technology and the aim is to come up with a means of processing both data and colour animation at high speed. Both professors are in the same faculty, and Maekawa is quoted in the press as saying that Galaxy will exceed Tron's capability - and is conceived for the world market.

SINGAPORE GOVERNMENT SPENDS \$18m ON LAND USE PROJECT

The Singapore government is spending \$18m on the first of a series of major products designed to make it a world leader in a number of niche markets. An example is the Integrated Land Use System, funded by the Ministry of National Development, which combines Unix workstations and mainframe into what is planned to be the biggest and most sophisticated land-use information system in the world if it becomes operational as planned in 1994.

Database

The aim is to build a giant database containing detailed maps of the whole island, showing telephone, gas, water, sewage, and electricity lines together with architectural plans of every building and road. It will also hold a mass of related data on development projects, land descriptions, planning laws and the like. It will have to hold and manipulate two million pages of data, 35,000 plans and maps and 15m microfilmed documents, and be able to recall and display them on 500 graphics terminals for city planners, engineers and the public. Project director Lum Siew Chong admitted that the project was "ambitious" and would have to rely on advances in new technology: "The complexity lies in integrating the database and mapping technologies. Each technology on its own is fairly mature, but we are planning to build an integrated system and no one has approached it this way before. We have only seen installations done piecemeal which have had to be scrapped".

Specification

It took his team five years to develop the specifications for the systems, which come in nine volumes and are two and a half feet thick. The Unix-based graphics terminals will be linked to two mainframes, one holding the graphical data and the other the text and numerical data, with the two linked to provide all the relevant data for a particular site on demand, or just the location of water and electricity mains for a contractor wanting to dig a hole - at present most holes in Singapore seem to hit one or the other, causing massive disruption.

SQL DBMS FOR KOREA

Dao Technology, the leading Korean dbms vendor, is developing a Korean-language version of SQL using the Hangul character set. It uses Unix versions that support 16-bit character definition, allowing support for the 20,000-plus ideograms used in Korean. Dao has an exclusive local distribution contract with Informix for the US firm's Unix ISQL dbms product, and will join with local firms to market Unix-based workstations and minis using the software.

PARSYTEC OF MUNICH BUILDS A PARALLEL SUPERCOMPUTER FROM INMOS TRANSPUTERS

It has long been known that a West German company, Parsytec GmbH of Munich, was playing very seriously with the Inmos International Transputer in the field of industrial controls, but the company has now extended its involvement with the ingenious microprocessor by building a full-scale supercomputer with it. Claiming that the machine paves the way for an era of unprecedented performance levels it has unveiled the Supercluster parallel processor, writes Computerwoche. The theory of vastly improved performance can be achieved on appropriate problems by adopting a parallel processing architecture of course meshes happily with the design of the Transputer. Each Transputer has four built-in high-speed communications links that can connect it to four other Transputers, making it possible to tie autonomous processing nodes together to create a structure that can be adapted to a variety of demanding applications under operating system control.

Within the Parsytec Supercluster, each processor uses all four communications channels, and Parsytec argues that not only does the structure solve the bottleneck problems which bedevil traditional bus-based systems, but it confers theoretically unlimited upgrade potential. All current models are based around the 20MHz T800 Transputer, but the company will use the 30MHz T801 version as soon as it is available at the end of the year. But in the present version, with four 20Mbps communications channels and 1Mb of main memory, each node is claimed to achieve a processing rate of 1.5 MFLOPS. The system's hardware also includes error detection and correction, an inbuilt fault-diagnosis and early warning facility, while plans to develop fault tolerant software - crucial for systems using over 1,000 processors concurrently - are well under way. Also under development are programs to run under the Unix-derived Helios operating system, written in parallel languages such as Occam and Parallel-C: current programs are written in C, Fortran and Pascal. Other features include a Network Configuration Manager to ensure that system processing resources are maximised and distributed to as many simultaneous users as possible.

McDONNELL OFFERS REALITY PICK CO-PROCESSOR FOR IBM ATs

A 1Mb 68020-based co-processor board that enables users to run the Reality variant of the Pick operating system on IBM ATs and ATalikes has been unveiled by McDonnell Douglas Computer Systems Co, Irvine, California. The company claims that the Series 14/100 board turns an AT into a multi-function, multi-user data processing centre capable of running the thousands of applications written for Reality. The user can switch between MS-DOS and Reality applications with a single keystroke, and the board supports up to eight terminals, printers, modems or other peripherals. There is also optional bridge software that enables Reality users to access MS-DOS data and Reality data to be manipulated in MS-DOS spreadsheets. It's best to have at least a 20Mb hard disk on the AT, and an eight-port controller board is needed for multiple users - MS-DOS of course remains single-user. The board is \$3,000; ships from August.

HITACHI OFFERS UNIX OPTION ON NEW LOW-END

S-SERIES SUPERCOMPUTER MODELS

Hitachi Ltd this week added two low-end models to its low-cost S-series of scientific supercomputers - and is offering Unix System V as an option on them. The new models are the S-820/40, rated at 750MFLOPS and renting for the equivalent of \$373,000 a month, and the S-820/20, 375MFLOPS, going for \$278,000 a month. Available from today in Japan, the new models, like their predecessors derived from Hitachi's IBM-compatible mainframes, run Unix System V as well as proprietary VOS3/HAP/ES vector processing operating system. Hitachi hopes to do 70 of the things over five years.

PHILIPS WINS \$8.5 MILLION ORDER FROM SWEDISH PHARMACIES

Philips Telecommunications and Data Systems has won an order worth \$8.5 million for the supply of P90X0 Motorola-based Unix minicomputers from "Apoteksbolaget", the organisation representing Swedish pharmacies. The order was won against strong local and international competition, according to Philips. The Swedish pharmacies will use the P90X0 primarily for the registration of prescriptions, stock and order information, and for communication with a central IBM computer. In total, 275 Swedish pharmacies are involved covering the whole country. Connection to the mainframe will be achieved via the X.21 communication network; 3770 SNA for data file transfer and 3270 for terminal access to central on-line applications. Local PCs will be linked through PC-interconnect for the exchange of files and terminal emulation.

CUBIX LAUNCHES QB2 386

Amongst the announcements at Atlanta's Comdex Spring was a new 80386-based micro from Cubix Corp. The QB2 fits into the same 11 inch cube that housed the company's 286-based Cubix2. The box supports 8 users and runs UNIX V.3, with up to 8Mb RAM, 300Mb disk, tape streamer, floppy and Ethernet connectivity. The machine uses a single board design which is claimed to eliminate bus bottleneck. Also included within the cube is an ADMA controller, and uninterruptable power supply. Price is £8000 for an eight user system, which includes 1 year on site hardware. The machine will be on show at the European Unix User Show.

IMP PARALLEL PROCESSOR CUTS COSTS WITH STANDARD BUS

Plans for a 68030-based parallel processor from the UK's Comsett, Co Durham manufacturer Integrated Micro Products have been known about for some time (UX No 156), but as its launch at the European Unix User Show next week nears, further details have emerged. The as-yet unnamed machine is claimed to be the first genuine multi-processor to use an industry standard bus, normally the most likely site for system bottlenecks. In the IMP system, clusters of four 68030s share a private VSB bus and linked to the main system VME bus. The Magix operating system, an implementation of Unix developed in conjunction with Unisoft, shares out the jobs amongst the processors. Three modules, a disk VME module, memory module and cpu board (each with 2 or 4 68030s) can be mix and matched depending on the type of configuration required. At the Unix Show a four cpu system will be demonstrated, but IMP Managing Director Mark I'Anson said the intention was to produce systems with up to 16 processors, with 32 theoretically possible. Performance levels would be comparable to Sequent's 80386-based Symmetry range, predicted I'Anson - perhaps higher for smaller configurations - but systems would be "significantly cheaper" due to the standard bus, with an entry level list price of around \$40,000. IMP will mostly be selling the boards and operating system to other manufacturers for integration in their own products. Full availability will be by the end of the year.

SMALL COMPANIES FORM MINI X/OPEN

A new UK standards initiative has been formed which will attempt to involve smaller companies in standards issues that are usually the province of the multinationals. Both X/Open and the newly formed Open Software Foundation require a vast influx of cash from members, and X/Open will reportedly only consider members with sales of over \$10 million per year. The Common Unix Environment Project (CUE) is to be launched on the eve of the European UNIX User Show next week, and has been led by UK systems company Bleasdale Computer Systems pic. Other members include benchMark Technologies, Cambridge Micro Computers, Ferranti Computer Systems, Integrated Micro Products, Information Technology Ltd (ITL), The Instruction Set, Lynwood Scientific, and Unisoft. The group will not set new standards, according to Bleasdale Computers Chairman Eddie Bleasdale. "It is a forum for companies to exchange technology and make the best use of emerging standards", he said. "Specialist hardware manufacturers and software developers are better positioned to implement standards faster than the large corporations". CUE has already established a working relationship with the X/Open Group. ITL's Technical Director, Garth Shepherd will represent CUE at future X/Open technical meetings. Shepherd said that CUE could provide the right technical platform for small companies. "Individually, we are not big enough to join X/Open and are too far removed from the USA to impact POSIX. Together, we represent an important part of the Unix market in Europe". CUE will be run as a separate limited company from its own London offices, and will maintain a full time administrative staff, said Bleasdale.

UNISYS INTRODUCES NEW STARTER SERVICE FOR UNIX USERS IN THE US

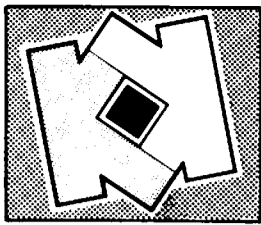
Strange as it may seem given the widespread adoption of Unix in Europe, the US commercial market is still largely virgin territory for Unix, so Unisys Corp has introduced a Starter Plan for new US users of its 5000 and 6000 series of Unix boxes. The package is intended to accelerate the transition from hardware installation to effective system use and to enhance the appeal of Unix System V. Unisys says the U Series Starter Plan specifically calls for active end-user participation during system setup - because end-users are key players in the installation process, they quickly become familiar with the operating system and can operate their systems efficiently in a short time. According to Unisys the Plan is implemented in five phases: taking customers from an initial review of their order, software levels, system hardware and operating system requirements through to a post-installation session where any possible changes or improvements that might enhance customer operating procedures are recommended. The phased approach applies the mainframer's Professional Project Practices family of business methodologies, techniques and tools.

NOKIA DATA JOINS X/OPEN

Nokia Data Systems, the resultant company of the merger earlier this year between Nokia Information Systems and Ericsson Information Systems, has become a member of X/Open. The membership has been transferred from Ericsson, which said that it would continue to support X/Open standards through its telecommunications and defence system products. Nokia Data, part of the \$5 billion Nokia Group, has its headquarters in Sweden and employs 8,000 people with a turnover of \$1 billion. In the UK, its main markets are in finance, manufacturing, distribution, and travel businesses. Nokia Data President Kalle Isokallio said the company was committed to implementing X/Open standards in its future hardware systems.

WEITEK OFFERS FAST RISC RASTER CPU

Weitek Corp, Sunnyvale, California, has plunged into the RISC microprocessor business with its HyperScript processor family of compatible 32-bit RISC CPUs for high performance page printing. Designed to go into laser printers and similar output devices, the new raster image processors are designed to enhance price-performance of page printers using PostScript and similar page description languages. HyperScript Processors are claimed to provide PostScript printing rates five to 40 times better than those of printers such as Apple's LaserWriter Plus, and can also be used to increase printer resolution, the number of users effectively supported, and colour and three-dimensional graphics printing. The 8200 versions are out now at from \$99 for 50,000-up; the high-performance 8232s sample July; no prices.

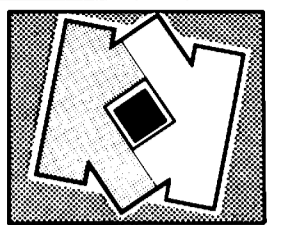


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The Advanced Transducer Devices subsidiary of Televideo Systems Inc, Sunnyvale, is to manufacture an AT-like personal computer for the Soviet state V/O Electronorgtechnica agency - the first time a US-designed personal computer has been built for sale in the Soviet Union; the US firm will supply subassemblies to the Soviets for final assembly and test at home - where there is already an estimated installed base of 50,000 IBM Personal Computers and compatibles.

- 0 -

The first major facelift for IBM's Personal System/2 line is expected this week; the announcement is expected to put right some of the things IBM got wrong in the original launch - perhaps a fast 30Mb disk in the Model 40 instead of the 20Mb crawler - and a desktop 80386 Model 70, perhaps running at 25MHz; whether the 25MHz chip will also go into the floorstanding Model 80 - currently 16MHz, or whether that machine just gets a price cut will depend on how many of the fast version of the chip IBM can get from Intel; there is gossip of cache memories tacked onto the Micro Channel, an 80286-based lap-top is on the cards, and a general tinkering with the line is likely.

- 0 -

The new \$280m Japanese semiconductor factory equally owned by Motorola Inc and Toshiba Corp has been completed at Sendai, 220 miles north of Tokyo, and production there is due to start at the end of this year, employing 340 people to start with, rising to 470 by 1990.

- 0 -

Although the wider lead indicators in the US still show little sign of recession, there are growing indications that the market for capital equipment there is softening: after Hewlett-Packard Co's slowdown in US orders during the first quarter, Xerox Corp is saying that April sales of business equipment in the first quarter were 3% to 4% down on those for a year ago, following a trend that began in the first quarter; overseas sales are "vibrant".

- 0 -

Independent terminal manufacturer Wyse Technology Ltd has launched a new computer display terminal aimed exclusively at the West European market; built around an 11MHz 8032 microcontroller and containing 24Kb high-speed static CMOS RAM, the WY-120 offers a "flicker free" 78Hz refresh rate and comes with a 14" flat tilt-and-swivel screen and is compatible with ASCII, ANSI and PC terminals: the terminal costs £595, the optional height adjustable arm is an extra £95, and Wyse has also designed special versions to meet German and Scandinavian environment and safety requirements, which will add 10% to the price.

When the alternative is lay-off, you accept: Corvus Systems Inc has mandated 37 headquarters and branch office employees to take 30 days unpaid leave to conserve its cash.

- 0 -

If you want to get new AT&T Data Systems chief Robert Kavna really worked up, just suggest to him that his succession to Vittorio Cassoni might be likened to George Bush after Ronald Reagan: Computer Systems News tried, and was met with a heated "George Bush, no way, I'm not George Bush, no, I'm more controversial, I lack patience, I'm outspoken spoken, I'm frank, I'm very open-minded, but I like arguing and disagreeing agreeing and then changing my mind; I like someone to confront me - it's not a comparison of a Cassoni to a pussy-foot!" Sorry they asked.

- 0 -

Cray Research is beginning to win big business in Japan, and its local subsidiary rushed out the new 40% faster Cray X-MP EA series, which starts at around \$2.7m for the EA/14se.

- 0 -

Dana Corp has turned in first quarter net profits down 23.9% at \$1.2m, on turnover that was up 17.3% at \$1.2m. Net earnings per share were down 15% at \$0.82; comparisons are restated 1987 figures.

- 0 -

Encore Computer Inc has reported second quarter net profits of \$649,000, including a tax credit of \$218,000, against a loss last time of \$1.7m, on turnover up 156.4% at \$9.0m; mid-term net income was \$1.0m, against a loss last time of \$3.6m, including a tax credit of \$345,000, on turnover that was up 188.8% at \$16.5m. Net earnings per share were \$0.03 in the quarter, \$0.05 in the half.

- 0 -

Tigera Group Inc saw first quarter net profit of \$65,000, against a loss last time of \$1.4m, which included a loss through discontinued operations of \$1.5m, on turnover up 197.5% at \$238,000. Figures are restated to reflect discontinued operations.

- 0 -

Wyse Technology has reported fourth quarter net profits up 48.0% at \$7.7m, on turnover up 74.0% at \$141.7m; net profit for the year to April 1 was up 51.0% at \$28.0m, on turnover up 67.6% to \$456.6m. Net per share was up 32% at \$0.49 in the quarter, 25% to \$1.80 in the year. Figures include the results of Link Technologies Inc acquired last year.

AT&T, which under its agreement with Sun Microsystems is free to top up its holding by buying shares in the market, so long as its total does not go over 20%, has been doing just that, and now holds 7.1%

- 0 -

Trying to get 25MHz 80386s out of Intel Corp is like getting Phantom of the Opera tickets but you can get hold of the fastest version of the part if you buy it ready made up as a System 302 AT bus platform from Intel: the company says it runs up to 25% faster than the fastest 20MHz systems and 120% faster than the 16MHz Intel System 301 - well it should, shouldn't it - and includes 64Kb cache and memory capacity expandable from 4Mb onboard to 24Mb via two 32-bit expansion slots - no prices given.

- 0 -

Sooo... trying to sneak an 81Mb disk drive past us, were we? British business travellers who like to take their micros away with them on foreign trips will no longer have to apply to the UK Department of Trade and Industry for an export licence: the licence requirement has been waived for MS-DOS micros, handheld computers and laptop computers, however the Department stipulates that the computer's main memory should not exceed 4Mb, formatted hard disk capacity mustn't go over 80Mb and it should not incorporate more than one 8087, 80287 or 80387 floating point processors; export licences will still be required for the Comecon countries and for computer that fall outside the specs.

- 0 -

Also likely, either next week or in December, when another set of PS/2 enhancements is expected from IBM, is a diskless workstation 80286 model for local area networks, designed so that you can't add a disk to it - you can get diskless versions of some PS/2 models now - "subject to availability" - but that just means that people go out and buy their own cheaper, faster disk from another vendor - and a dedicated file server in the PS/2 line.

- 0 -

Whitechapel Workstations, London, receivers Peat Marwick McLintock are now sifting through an assortment of offers for rights to the technology of the Hitech-10 range: the offers are believed to have originated mostly from the US, with some interest from Continental Europe: a decision is likely this weekend.

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9 JUNI 1988

London, Week Ending June 12 1988

Number 183

SIEMENS AND INTEL GET TOGETHER FOR UNIX SYSTEM DEVELOPMENT

In a sketchy joint announcement, Intel Corp and Siemens have revealed the formation of a joint venture computer systems company, called Biin. president of the company will be Josseph Kroger, the man that was president and chief operating officer of Sperry Corp until it was acquired by Burroughs, whereupon he became vice-chairman of the Unisys Corp combination. The company will be equally owned by the two partners, will operate on a worldwide scale, and will have US headquarters in Hillsboro, Oregon, and European headquarters in Nuremberg. It will begin manufacturing in both the US and West Germany before the end of the year. Few more details have been revealed as yet; there is no indication of the scale of the investment and little indication of what the company plans to do, beyond the fact that it will build and market dedicated systems for applications such as transaction processing, manufacturing, medical computing "and so forth". It will be officially inaugurated today, and it is possible that the hardware will be based on a development of the ill-fated Intel iAPX-432 32-bit object-oriented chip set that Intel has been quietly working on with funding from Siemens. Sources close to the company said the machines would feature a "new architecture, and would be optimised to run Unix. Siemens is the European second source for the iAPX-86 family. The partners say they'll give more details on Biin in second half of 1988.

INTERACTIVE SYSTEMS OPENS LONDON OFFICE - AIDS OSF CONFUSION

Emerging from its recent acquisition by Eastman Kodak (UX 172), a far wealthier and surer Interactive Systems is planning to extend its influence in the Unix world by closer links with Europe, and at the same time is increasing its porting and consultancy activities in response to the recent announcement of the Open Software Foundation. The company has established an office in London as its European headquarters, which will open from July 1st, and will use it to serve the growing European distribution network for its 386/ix products. "The amount of activity in Europe surprised us", said Interactive's President Ron Fisher, "so we want to make sure of our local presence in order to grow the market opportunity". Interactive has worked in conjunction with Microsoft on the converged Unix/Xenix operating system launched at the European Unix User Show this week, but will have to wait until AT&T's official certification of the product later this Summer, before the work can be incorporated into 386/ix. Meanwhile in the US, Interactive has established what it calls an Open Systems Technology Centre in Boston, the aim of which is to provide support services to systems manufacturers and major end-users "who are working to comprehend the ramification" of the launch of the Open Software Foundation, and to offer assistance in planning Unix strategies over the next several years. Interactive chief executive John White believes that the Foundation announcement will require a complete evaluation of operating system strategies in the Unix arena. "The computer industry will need to understand AIX and System V.3 along with the evolving directions of each system," he says. Interactive has been involved with both camps; helping IBM with the development of AIX, and with AT&T and Intel for the 80386 operating system. To confuse matters further, Interactive's parent Eastman Kodak is a major shareholder in Sun Microsystems, and also a major workstation customer. But Fisher sees no conflict. "Our own route is clearly with the 80386 operating system already in place - but many others will have to address Open Software/System V.3 compatibility, possible migration paths, application portability and interconnection strategies". The new Technology Centre, which also opens from July 1st, will provide both consultancy and porting expertise. The centre represents an investment of "several hundred thousand pounds". Fisher revealed that Interactive would be signing on as a member of the Open Software Foundation.

NEXT WORKSTATION LIKELY TO RUN MACH

Speculation about the long awaited workstation from Steve Jobs' Next Inc, which could be launched within the next few weeks, is again mounting - but details remain confused due to what appear to have been a number of changes in the specification during the development process. What does seem fairly certain is that the scholar's workstation will be Motorola 68030-based, with specialised chips dedicated to graphics performance. The operating system is expected to be the Mach system developed at Carnegie Mellon University, which offers multi-processor support and is largely based on Berkeley Unix. Key members of the team who originally developed Mach now work for Next. Software is likely to include a screen-based version of the PostScript page description language developed by Adobe Systems in conjunction with Next (UX No 146). Display PostScript will offer true WYSIWIG and be windowing system independent. One candidate for the windowing and interface software is the X-Desktop product from small Cambridge company IXI Ltd, an X-Windows-based systems that visitors to the European Unix User Show this week will be able to see demonstrated for the first time. IXI says a number of customers have taken on the product, but are not yet ready to reveal their plans. The most likely date for the launch of the Next workstation is June 16th, a few days before California's Usenix conference, but most sources are unanimous in setting the launch some time in June.

AKERS DEFENDS OSF DOUBTS

IBM Chairman John Akers payed a brief visit to the UK last month, denying rumours that IBM was out to create confusion in the Unix marketplace with the Open Software Foundation. OSF, he said, was in line with the expenditure and commitment that IBM had already made in Unix, and that "this would become clear as the weeks go by", which was taken by many to as heralding a widening of IBM's Unix product line - perhaps offering it as an option on the forthcoming Silverlake mid-range introduction?

LANDMARK GRAPHICS PROPOSES ITS OPENWORKS AS STANDARD FOR INTERACTIVE SUPERCOMPUTING

The emergence of industry standards and the devolution of computer power to industry desktops may well provide solutions to the problems confronting oil companies in the late 1980s. Falling prices, coupled with the post-1970s exhaustion of inexpensive, offshore oil reservoirs, has driven companies, forced to optimise high risk onshore drilling budgets, to rely with increasing dependence upon highly detailed and accurate computer-processed evaluations of petroleum reservoirs. Landmark Graphics Corp, a Houston-based company which, in seven short years, has gained substantial profits and a 40% share of the exploration software market with its range of computer aided exploration development tools, has now responded to the "greater efficiency" demands of its end-users by launching OpenWorks, an interactive, "bus"-based software architecture. Essentially, OpenWorks, the fruit of 18 months' development work, will provide companies with the means to integrate in-house or third party applications and hardware, share databases, and unite separate teams of geophysicists, geologists and engineers involved in exploration and production projects to work in a "synergised" high speed environment. OpenWorks comprises three modules: the application software development tool kit, SmartBus, the SmartWindows user interface, and the SmartData database interface.

The key to the system's interactivity lies in its adoption of Unix, TCP/IP and X/Window industry standards: effectively, each user is provided with a common mouse-driven user interface, and through learning the simple point and click technique, can access data stored at any point on the company information network. Landmark will propose the OpenWorks system as a non proprietary industry standard, and believes that, longterm, the product could - and should - provoke a fundamental change in the way computer-aided exploration software is developed. Landmark has also established a development-oriented Early Partners Programme, and currently has projects underway with two participating companies. Cray Research Inc, not surprisingly one of the largest players in the petroleum industry computers arena, has ported OpenWorks onto its computers, in a well-timed bid to extend in-house applications to its customers. Cray claims that OpenWorks solves the "which-operating system? which-windows?" style issues that have dominated recent interactivity debates, and insists that OpenWorks offers the kind of common user interface which it has "anxiously" been awaiting for several years. Similarly, Robertson ERC, a UK-based petroleum consultancy firm, has opted to use the OpenWork's architecture as the kernel for its government and industry-backed integrated reservoir Tigress initiative, and believes that the software system could be of considerable future value to its mineral and geological divisions. Landmark, which recently reported an annual turnover of \$35m for 1987, believes that other companies will be keen to participate in the programme, and seems set to prove that the oil company position is very lucrative corporate meat.

FORTUNE CHANGES ITS TUNE - RE-NAMED ORION

Fortune Systems International, the company that resulted from a management buyout of the international operations of Fortune Systems Corporation back in June 1987, has quietly changed its name to Orion Associates Ltd. Orion, which retains its headquarters in Monaco, continues to supply the 22 distributors in Europe and South East Asia with its Formula systems, but appears to have dropped the Fortune tag. The company has also shifted ground to more powerful systems through a recent OEM deal with Arix.

SUPPLIERS UNITE TO BOOST X400 - BUT NOT FAST ENOUGH FOR USERS

Suppliers of electronic mail systems have agreed to merge their efforts to promote the X400 standard for electronic message handling with the "Eurosinet" drive for open systems communications. The decision announced last month at a meeting of the European Community Commission has met with a mixed response from users, who would like to be consulted more over the evolving standard. The suppliers numbering Hewlett-Packard, DEC and IBM, who formed the X400 promotion group last June are anxious to raise the profile of the CCITT standard and feel the group's work would now be most effective as a subset of Eurosinet which works across the seven layer spread of the Open Systems Interconnection model. But Ray Walker chairman of user standards body ITUSA said that users' priorities are different from those being pushed by suppliers and is busy setting up a user-driven project whose sponsors include Lucas and British Aerospace. Walker cited the use of dial-up connection as being a top user need but which is excluded from the CCITT version in favour of connection over packet-switched networks. Security also needs to be treated more urgently, he said. X400 products on the market have to date met with an indifferent response from users who are sticking to vendors' proprietary offerings. Colin Cooper, consultant from the project's consultancy Level 7, said that proprietary products offer more functionality than the current 1984 CCITT version but claimed that the 1988 specification due out this November will bridge the gap to gain the necessary critical mass. But Walker reckons 1992 will be a more realistic date.

RAIR LAUNCHES BLACK BOX II

After launching its Black Box III 68020-based multiprocessor systems based on hardware from Counterpoint Computers in January, British micro manufacturer Rair Ltd is extending its OEM agreement with the company (now owned by the Acer Corporation) with the addition of the low-end multiprocessing system, announced by Counterpoint back in February (UX No 165). The Black Box II is a smaller, floor standing unit targeted at the four to twelve user market, and has an entry-level price of £11,950. Using a 20 Mhz 80386 processor, with optional floating point, the system is based on the PC bus structure, but also includes an intelligent I/O host controller and up to four intelligent eight port terminal processors, based on the Motorola 68000. The machine supports up to 34 users, and includes the Merge/386 product from Locus Computing. The new system is being launched on the first day of the European Unix User Show.

TRINITEC TO INCREASE INTEL PROFILE IN UK

Wyse distributor Trinitec Plc of North London has been appointed a distributor for Intel Corp, initially concentrating on the System 302 OEM board level box that uses the super fast 25MHz version of the 80386. Three-year-old Trinitec has been expanding fast over the last year; as well as its Wyse terminal and micro business, the company took on the distributorship of Fairchild Clipper-based PC add-in boards from Opus Systems, and more recently has become a distributor of SunRiver fibre-optic stations and operating system software from Interactive Systems Corp. Trinitec says it did £1.3m business in May alone and its pitching for £13m this fiscal.

IBM REVEALS ARCHITECTURE & ENGINEERING SOFTWARE FOR THE RT

IBM has launched a pair of applications in its Architectural and Engineering Series for its Unix (AIX) based RT Personal Computer. The IBM Architecture and Engineering Series is an integrated three-dimensional computer-aided design, engineering and drafting system for the RT, designed to take care of all phases of the architectural design process. Developed by Skidmore, Owings & Merrill, "it revolutionises the traditional approach to computer-aided design and drafting, can enhance architect and engineer productivity, and can improve project quality from design through engineering analysis and architectural drawing" according to IBM. The Graphics Application user interface includes pop-up menus, icons, multiple windows for graphics and text, and a "powerful" command language. Optional modular programs support Rendering, Structural, Energy, High Voltage AC, Piping, Power, and Lighting Applications. It supports an optional interfaced relational database - Ingres - that connects graphic elements in drawings to related text information. All graphic data is stored once in full, three-dimensional representation; cells within drawings can contain spreadsheet-like formulae for automatic calculation and updating of model geometry; repetitive commands can be saved in user-prepared macros. Priced separately the modules are \$3,000 for Graphics, \$3,000 for Rendering, \$5,400 for Structural, \$600 for Energy, \$2,500 for HVAC, \$2,400 for Piping, \$8,000 for Power and \$5,400 for Lighting. They are out in December. The Architecture and Engineering Series is also available in a Package Option that provides an integrated system including the RT hardware and all licenced programs necessary for running the integral Graphics Application and comes preloaded on the RT hard disk. No prices for the package.

RADIUS DIVERSIFIES AGAIN, THIS TIME WITH AGREED £6m**BID FOR ICL SYSTEMS HOUSE**

In a move to widen its scope and supply companies with "across the board" computer systems, the Hull-based computer systems and services group, Radius Plc has launched a takeover bid for ICL systems house MGB Computer Systems Plc. Under the terms of the offer, which has been formally and irrevocably accepted with respect of 95.2% of MGB's total shares outstanding, Radius will pay an initial consideration of £4.33m, to be paid in Radius shares or cash, with an additional profit-related payment for the 12 months to December 31 1988, of up to £1.3m more in Radius shares. The present MGB chairman, Michael Burge, and managing director Keith Bennett will be invited to join the Radius board. In the year to December 31 1987, Hemel Hempstead-based MGB recorded pre-tax profits of £632,000 on a turnover of £8.8m, with net assets valued in excess of £1.1m: its current customer base numbers over 250 clients. The combined companies will employ over 460 staff, and will operate from 16 locations across the UK. Radius has been rapacious in its acquisitions since it went public a couple of years ago, and from a small specialist in proprietary Texas Instruments hardware, has with the help of acquisitions blossomed out into a broad-based systems house with significant interests in the Unix and Data General markets.

PROGRESS SOFTWARE EXPANDS INTO CANADA AND UK

Progress Software Corp, makers of the Progress fourth-generation language and database package, is expanding its operations with a direct sales office in Canada and a subsidiary company in the UK. The Bedford, Massachusetts-based company, previously called Data Language Corp, has tried more than once to make a significant impression on the UK market, the first being in 1985 (UX No 12) when it approached software distributors Sphinx. More recently, the company has opened a number of subsidiaries in Europe, following its acquisition of MSE Distribution in September last year (UX No 147): it now has representation in Austria, Belgium, Denmark, France, the Netherlands, Norway, Sweden, Switzerland, and West Germany. The UK office will be situated in Basingstoke, and the Canadian office near Toronto. Senior VP of sales and services Chad Carpenter said that Progress was on target to achieve a 100% growth rate over the last year. Progress runs on MS-DOS, VAX-VMS and CTOS-BTOS hardware as well as Unix, Xenix and Ultrix, and is used mostly by resellers, MIS professionals, software developers and consultancies. The company recently signed a deal with Harris Computer Systems for joint-marketing Progress on the Harris HCX line of minis.

SHOW ISSUE

Subscribers may notice only four pages in this weeks issue, fear not, there will be two issues this week, to ensure we have a full coverage of the Unix Show in London. Any stories that arise during the show will be included in an extra issue due out later this week.

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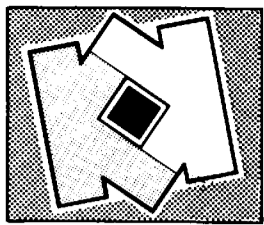
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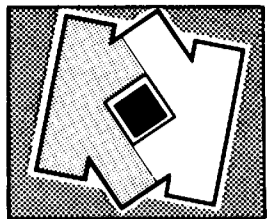


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Apricot Computers, Birmingham, UK, has announced an OEM agreement with The Santa Cruz Operation, and has undertaken to sell and support SCO Xenix System V: it will begin shipments for its Xen-i 286 and 386 computer ranges from July 1st.

- 0 -

Whitechapel Workstations receivers Peat Marwick Mitchell report that there are now two serious contenders out to buy the technology of the bankrupt East London company's Hitech 10 workstation: the most serious is apparently a European consortium with some US involvement.

- 0 -

Western Digital Corp's ViaNet 3.06 LAN Operating System is now available for use with Interactive Systems' 386/ix version of UNIX System V.3: it is an application package for host processors running UNIX System V that permits the host processor to be used as a file server for a ViaNet network of DOS nodes - the package also includes a virtual terminal subsystem that permits any DOS PC running ViaNet to be used as a terminal on the host processor.

- 0 -

Informix Software Inc has ported its range of RDBMS tools to the Silicon Graphics family of IRIS 3100 and 4D workstations: the move will, according to Informix product marketing director Stephen Hill, "open new application avenues for their customers".

- 0 -

The Korea Advanced Institute of Science and Technology has ordered a \$20m Cray 2S-4 128: Cray Research says it is the first sale of a Cray to an Asian country outside Japan.

- 0 -

And hot on its heels comes another Cray order: Westinghouse Electric Corp, acting as prime contractor for the US Department of Energy, has ordered a Cray X-MP/48 worth \$17m to go in at the Bettis Atomic Power Laboratory in West Mifflin, Pennsylvania.

- 0 -

While "Crayette" manufacturer Scientific Computer Systems Inc was due to announce a super-high-speed 1.4Mbps local area networking system for attaching high speed graphics workstations to supercomputers as we closed for press yesterday: the Vectornet network is said to be ten times faster than the optical FDDI Fibre Digital Distribution Interface.

Nixdorf Computer Ltd in the UK has at last got round to launching one of the new Targon systems that we saw at the Hannover Fair back in March (UX No 172): the desktop Targon /31 Model 5 68030-based system for four users starts at under £9,000 - but no sign yet of the Targon /35 Model 50, based on Pyramid Technology's 3 cpu Series 9000.

- 0 -

It's well known that IBM's RT Personal Computer has not fared too well in the States, but in Europe the machine appears to have been a modest success: word is that 1,000 have now been sold in the UK, and one or two continental markets have also been receptive to the Unix box, implying that sales throughout Europe are in the 4,000 to 5,000 range: we understand that US sales account for a mere 35% of the total, which is in sharp contrast to most other low-end IBM systems, where US sales have typically outnumbered foreign ones two or three times to one, the reason of course being that there are far more strong European and Japanese competitors for the System 36 than there are 3090 mainframes.

- 0 -

Apple UK has won its first major order for Apple A/UX systems from East London's Queen Mary College, which is adding 54 Macintosh II systems to its Computer Science Department's network of workstations: the order is said to be worth a quarter of a million pounds.

- 0 -

Alliant Computer Systems Corp, Littleton, Massachusetts yesterday inaugurated its Japanese subsidiary, Nihon-Alliant Computer KK: the unit is a full service facility incorporating marketing, sales, customer service and software support operations; the minisupercomputer manufacturer already has international direct sales offices in the UK, France, Germany, Holland, Sweden and Switzerland.

- 0 -

First Software Ltd, the company that boasts it introduced Intel and Lotus to the UK, has entered the Unix market, and is showing Informix, the Samna word processor, Unity accounting system, Uniplex office automation suite and Sentinel's Unix-based version of WordPerfect 4.2 amongst the products on its stand at the European Unix show.

Informix Software Ltd has signed an agreement with Microport Systems Ltd allowing Microport to distribute Informix products that run on Microport's System V/386 for 80386-based systems.

- 0 -

Megatek Corp of San Diego has signed a \$10m OEM deal with Sun Microsystems, which it is to resell and integrate with its own graphics subsystems; the company sells mainly into the graphics terminals market.

- 0 -

Tulip Computers N.V. has announced Xenix for its 286 and 386 micros: Tulip Xenix/286 is an implementation of Microsoft's Xenix V developed at Tulip's Den Bosch manufacturing plant in the Netherlands: Tulip says it is second only to IBM for PC sales in the Benelux countries, and has an installed base of over 60,000 units.

- 0 -

A multi-user WordStar look-alike for Unix, Fenix WP, is being distributed in the UK by Citytek Ltd of Hackney, London: it can use WordStar files created in DOS and has a non-document mode for programmers: prices are £595 for certain 286-based systems and £695 for most 386 systems.

- 0 -

Cobol compiler specialist Austec International has developed a version of RM/Cobol for Unix systems and signed agreements for it with Hewlett-Packard Co and NEC Corp.

- 0 -

Harrods Ltd, Europe's largest department store, has spent £45,000 with Oracle Corp for its RDBMS and 4GL software as part of its information systems expansion programme (UX No156): Harrods is set to buy a number of Unix systems on which most Oracle work will be based - it currently has IBM, NCR, DEC VAX and Olivetti hardware in the store.

- 0 -

Logic Replacement Technology Ltd of Reading, Berkshire in the UK, has installed an LED LAN link between two the separate sites of the Unisoft London headquarters: the line-of-sight IntraCOMM 8 LAN link connects two Ethernet LANs running TCP/IP protocols across a main road, and provides an equivalent performance (2 M-bits/sec) to a land line, and typically costs £16,000 to buy and install.

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***** SPECIAL SHOW ISSUE *****

(News from the European Unix User Show)

London, Week Ending June 12 1988

Number 183

DEC's OLSEN ADMITS TO "SPECIALISED PROCESSORS" FOR ULTRIX WORKSTATIONS

Digital will have "specialised Unix processors" for applications where processor speed is the most important factor, said DEC Chairman Ken Olsen during a little-publicised appearance at the show last week. Olsen's statement was the nearest DEC has come to confirming that some of its long-running RISC research developments would be allowed into the DEC product line. He hinted that the processors would go into workstations, saying that DEC will offer "very fast machines" for workstations where the "price depends on the cost per mip": he pointed out that it is now relatively cheap to increase the MIPS available from a processor. However he was quick to play down the significance of the development to DEC's overall product line, saying raw processor speed is not the most important factor in most commercial applications. And he reiterated claims that DEC was now the second largest workstation supplier, and plans to be the first. In a rather confusing series of questions and answers, Olsen also suggested that a POSIX compatible version of VMS would probably be available next year. And he included his own swipe at the AT&T/Sun "monopoly" on the future of Unix development, saying that DEC "absolutely disagreed with the attitude of about it, and we refuse people when we feel like it".

Motorola's "Angel fire" 88000

Motorola Computer Systems, had an 88000 RISC processor "Angel Fire" development board tucked away in a standard VME chassis on the stand - and was so keen to persuade sceptics that the thing was alive and well that staff went on hands and knees to prize the front off the machine.

Spider adds X.25 to Streams

Networking specialist Spider Systems announced what it reckons is the first implementation of X.25 software to use AT&T's System V Streams mechanism, although source code is not due for shipment to OEMs for a couple of months yet. The X.25 development follows Spider's earlier production of a Streams-based TCP/IP package. Spider said the product was compatible with the US Defense Data Network version of X.25, and was being adapted for the variants in use in different European countries. In addition, it supported X.25 over Ethernet for the UK academic community and an IP to X.25 router module to facilitate X.25 wide-area network links between local TCP/IP networks. Spider Systems' sister company, Spider Networks, was responsible for installing the by now customary show network linking some 25 stands.

SCO offers "interim" Unix/Xenix merger

Santa Cruz Operation, which does not expect to ship a version of SCO Xenix based on the AT&T merged Xenix/Unix port until first quarter next year, wheeled out its own interim product in the form of Xenix System V Release 2.3. The company stressed the Unix compatibility - it is claimed to run Unix V.3.1 binaries without recompilation, and includes support for streams and shared libraries - and international features. The latter include an "international developers kit" and additional 8-bit utilities such as mail, to support the 8-bit data paths through the kernel introduced with System V.3.1. Other features include support for workstation co-processors, SCSI and ESDI disks. The software comes in versions for AT-bus or Microchannel machines, and pricing is the same as for the previous release.

Smallest Tower arrives in UK

There is apparently only one NCR Tower 32/200 in the UK at the moment - and that duly went on show at Alexandra Palace. The tiny size of the 25Mhz, 68020-based machine took everyone by surprise, at a show where other small machines like the QB2 386 from Cubix Corp and Convergent's new S/80 were also introduced. Using surface-mount technology, double-sided boards, and liquid cooling the cpu has allowed a cabinet 13" high, 4" wide and 11" deep. The box supports 4 users but will mostly be used as a network server - on the stand it was said that large companies "were ordering the machines in their thousands". Prices start at £3,995. NCR said that it would be addressing the need for greater I/O support in future releases of Tower hardware.

NCR now a target for clonemakers

NCR now claims to be amongst the largest shippers of Unix systems with its Tower Series, and that success has begun to attract clones hoping to cash in on its success. MicroSage Computer Systems of Reno, Nevada, has been attempting to establish its Stride 600 Series supermicros for a number of years, but often faced objections from customers over the availability of software for the range: now it plans to get over that by offering full binary compatibility with the NCR Tower range. The capability is available as a user installable software upgrade, and will allow "the vast majority" of applications already written for the Tower Series to be run unaltered on Stride systems, with those on 1/4" tape directly transferable. MicroSage insists that the 68020-based Stride systems, which support multi-processing via a VME bus, are not simply NCR copies, but "faster and cheaper" - and that a series of announcements due next week will allow them to offer as wide a range as the Tower systems.

£1.5 million order for CT S/80s

Convergent distributors TIS came out with the most impressive order announced during the show, by revealing its largest sale ever - 130 of the new entry-level Convergent S/80 boxes to estate agents chain Hamptons. The systems will form the basis for a distributed processing system across the south of England, with a central S/640 at the company's London headquarters linked in with an existing ITL Momentum Series 23X system. The deal is valued at £1.5 million. Other deals included the replacement of VAX systems by a Sequent Symmetry with 16 cpus at the University of Lancaster Computer Centre, and a £100,000 sale by Unixsys to the Bradford Health Authority for two networked 386 systems running the Med-X radiology information system.

SUN'S BILL JOY SLAMS OPEN SOFTWARE FOUNDATION

It was inevitable that the Open Software Foundation would form one of the main talking points at the Show, and fortuitous that a previously arranged talk on Unix directions involving IBM and AT&T at the conference could be used as a discussion forum for the issues. But in order not to be outdone by DEC fielding Ken Olsen to defend OSF, Sun responded by sending its own heavyweight, Sun founder and technical director Bill Joy. Joy fiercely questioned the motives of OSF members. "Standards are set in the marketplace, not by committees", he said. "OSF is an attempt to kidnap and bury the competition. OSF is simply a list of non-controversial standards which AT&T and Sun already support. Joy said that it was easy to come up with a sub-set of standards, but that OSF members had not made any commitment to getting rid of incompatibilities arising from proprietary extensions to, for instance, Fortran. He also poured scorn on fears that Sun would be optimising Unix to fit round the Sparc processor. "The secret of doing that is writing a good C compiler". For OSF to be convincing, said Joy, its members should commit to compatibility with V.4 (thus bringing together the Unix, Xenix and Berkeley variants), and drop their own proprietary Unix versions. "Without V.4 compatibility, OSF is just a big hoax, and basing it on AIX makes everyone else a plug compatible manufacturer".

Open Look heads interface interest

AT&T Unix Europe was grabbing attention with a "pre-beta" version of its Open Look graphical user interface, a tool which as Bill Joy commented, people were "for and against without even seeing it". Open Look consists of the three main elements found in user interfaces since the Mac, namely a "look and feel" style, a toolkit to implement the style, and its own graphics library. But it also includes a window system platform - X Windows - providing graphics independence. According to Joy, the Mac interface is simple but not consistent - there are often four or five ways of doing the same thing. Open Look dispenses with a menu bar at the top in favour of pop-up menus "just where you are". It also uses an elevator at the side of the screen to show where you are in a document, stacks of push buttons to replace the Macs menu lists, and thumb tacks to pin important windows to the screen. It will be available in full from AT&T late this year.

...As X Window support grows

X Window implementations could be spotted all around the show as more manufacturers jumped on the bandwagon. IXI of Cambridge was showing its X-Desktop alternative to Open Look on the Apollo Computer stand, providing the Unix environment with a stylised desktop. The system could provide a useful alternative to Open Look for computer manufacturers in the OSF camp, and Ray Anderson of IXI said that a number of large computer manufacturers "who have not yet revealed their X-Windows strategy", had signed up for the product. IBM, DEC, Apple and Sequent were amongst those showing X, and UK company Cambridge Micro claimed widespread interest in its X-Station computer, designed to run X-Window applications for commercial users. Microport showed its version of Unix V.3 with an X Window System extension based on X11 R2.

Unix V.3.2 for release on August 15th.

Along with Open Look, AT&T was showing the early version of Unix V.3.2 for 80386-based machines, and said it would be available as a source level product from August the 15th. And in a surprising move, the company said it would be extending its programme by offering a licence for a binary implementation of Release 3.2 for the 80386 as a separate product carrying a per copy royalty schedule.

JSB combines Unix and DOS

Slightly apart from the main windowing systems debate was JSB Computer Systems Ltd, which supplies the MultiView Windowing software bundled in with SCO and Interactive Xenix versions. MultiView Desktop was previewed at the Show, and uses either MS-Windows or Presentation Manager running on a PC to access Unix applications running on a host Unix computer. Unix and Dos applications can be run in separate windows on the same workstation. JSB said an X Windows version of JSB Multiview would be introduced once shipments of X justified it.

Baan incorporates Risc into software

Baan Information Systems, from Barneveld in Holland, was showing a new fourth generation development environment called Miracle - for Machine Independent RISC Architecture Computer Language Environment - which has already been used as the basis for a number of software systems, including the Unity accounting software also on show. Baan claims to have incorporated RISC techniques into the software, by including only 20 low-level coded functions as the foundation of the software, with the remaining 80% embedded in the BAAN shell, an added layer sitting on top of the operating system. The results, says the company, are programs only 10% in volume compared to normal 'C'-compiled programs, less load times, disk space and better performance. Miracle can run on all Unix versions as well as MPE, MS-DOS or VMS.

Today extends 4GL with expert systems

BBJ Computers has released work it has completed in conjunction with the University of Sydney to combine expert systems technology with its Today fourth generation language. The product, Today/ES integrates the 4GL with machine learning and expert systems techniques which allow both general purpose programs and expert systems to be built more quickly - with the machine learning system a first draft of rules can be built up from existing data by taking samples of an expert's decisions. The expert systems tools and 4GL can then be used to finish off the work. BBJ says the software is the first to combine the three elements in one package.

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ALTOS ADDS AT-ALIKE WORKSTATION PITCHED AT ITS UNIX USERS

Altos Computer Systems Inc last week announced the Altos Workstation 100 AT-alike workstation that runs MS-DOS applications and offers full integration with Unix, coming bundled with an Ethernet-based Unix server interface board, the Altos Advanced Communication Processor Attachment. The station also runs the Altos Applications Executive icon-based interface, designed to integrate MS-DOS and Unix applications in a windowed environment. The station has an 80286 switchable between 6MHz, 8MHz and 10MHz, 800Kb 3.5" floppy, socket for 80287, 640Kb memory and slot for another 1Mb. The Ethernet board links to Altos AdLANtes network so that it can communicate with similarly-equipped AT-alikes and with Unix systems. Available now in the US it is \$1,795 without operating system or monitor. The ACPA/PC board can also be bought separately at under \$500. * The Kobelco Systems Co subsidiary of Kobe Steel Ltd is to market Altos systems in Japan under an exclusive agreement. Launching the kit this autumn, Kobelco looks for sales worth \$2m in the first year.

JAPANESE COMPANIES MOUNT WORKSTATION CHALLENGE

Just as Sony Corp has announced the introduction of its dual-68030-based News Series 1800 workstations in the US, which it is will also be manufacturing there, rival Japanese manufacturers are planning to challenge its leadership position in Japan. Mitsubishi Electric Corp says it will be launching its own low-cost workstation by the end of the year. Developed by Mitsubishi in partnership with Nippon Telegraph & Telephone Corp, the station will use the Motorola 68020 - moving to the 68030 later - and will run a high-speed OS/60 UMX operating system as an optional alternative to Unix System V. Prime target markets will be communications, computer-aided design and graphics processing, says Mitsubishi. And a further challenge from a more unlikely source has come from Casio Computer Corp, a name that for years has seemed a bit of an exaggeration, because all the company made was calculators. But in a major diversification, it has plunged off down the Unix path with a new line of office computers, the SX series, which are also based on the Motorola 68030 chip and run Unix System V instead of the previous proprietary Casio operating system, now discontinued; Casio says it wanted a more powerful machine to which various peripherals such as an image scanner and an optical disk drive could be attached; other Japanese companies that have introduced machines based on the 68030 are Sony with its latest News workstations and Fujitsu with its A series of supermicros, the A60 and A80.

MANNESMANN KIENZLE TO LAUNCH ARIX-BASED SYSTEMS NEXT WEEK

Mannesmann Information Systems Ltd, the UK arm of the giant £5.2 billion Mannesmann AG heavy engineering group of West Germany, is set to launch a range of new systems based on Arix computer systems at the end of next week. Mannesmann will be re-badging the Arix 800 under its own Series 9400 label, Arix revealed last week before hastily withdrawing the statement. Shipments of the systems apparently began in April, and porting software, such as Mannesmann's specialist legal systems, to the new hardware is now in progress. Last year, the company announced its intentions to move to Unix-based systems once price/performance was comparable to its proprietary systems. The company has an installed base of around 1500 systems. Arix valued the deal at £12m over three years.

AIR FORCE RISC STANDARD DUE

Commercial RISC microprocessors are amongst the chips under evaluation by the US Air Force, for possible use in the Air Force's next generation tactical computer. Amongst those companies offering the Air Force unrestricted data rights to their RISC microprocessors are AMD, Intergraph, National Semiconductor and Zilog. Most recent recruit is MIPS Computer Systems. Sun Microsystems could not confirm that it had also offered the SPARC processor for the standard. Both Motorola and Intel have refused the government unrestricted data rights to their own chips.

AT&T DENIES "BINARY LICENCING" PLAN

An AT&T spokesman denied last night that the company was planning to licence binary implementations of Unix V Release 3.2 for the 80386 as a separate product carrying a per-copy royalty schedule. The move, concerning the newly merged Unix/Xenix operating system, would have placed AT&T in direct competition with current source licencees such as Microport, Santa Cruz Operation and Interactive Systems Corp. The spokesman said AT&T would be selling a binary version for its own 6386 workstation when the operating system is released in mid-August. In order to protect the Unix trademark, AT&T will offer licencees an obligatory "foundation set", including base system, editing package, network support facility, RFS, security administration and 2Kb file system; outside of this vendors will be free to make changes to the system.

HP CUTS PRICES

Hewlett Packard has responded to recent price cuts from rivals Apollo Computer with cuts of up to 30% in its mid-range 68020-based Model 330 workstations. The company has also revealed that its current Model 350 will be replaced by the 33Mhz-based Model 370 system later this year, according to Computer Systems News.

OPEN LOOK AND OPEN SOFTWARE -BILL JOY SPEAKS OUT

Unix was already ten years old in 1977 when the young Bill Joy first came across it in its PDP-11 incarnation. Today, he is the self-assured technical spokesman of Sun Microsystems, the company which he helped found, and which is now the fastest growing and probably the most highly regarded company in its field. Last week, Joy visited the UK to give an impromptu talk at the European Unix User Show, focusing on two of the major talking points of the event: Open Look and the Open Software Foundation.

"People are for and against Open Look without ever having seen it", said Joy, seemingly bemused by the politics that have entered his field of technology over the past few months. At least at the show visitors could actually see the product demonstrated for the first time - or at least a "pre-beta version" as it was described by the demonstrator - and Joy was keen to reinforce the first sighting with his explanation of the methodology behind its development.

"kind of ugly"

Since Apple, it has been recognised that a graphical user interface needs its own "look and feel", a toolkit to implement that look and feel, and a graphics library. Taking its lead from the Andrew project at Carnegie Mellon University, Open Look added another element, a window system platform providing multi-level input/output, a graphics model, and device independence, using either News/Postscript from Sun itself or the X Window system from the Massachusetts Institute of Technology. But, claimed Joy, Open Look has aimed at a level of consistency of operation that he says the Mac interface has not reached. "Open Look uses direct manipulation, without a menu bar at the top or function keys to break the paradigm", he said. Some have criticised Open Look for its rather ungainly analogies, such as the "elevator" scroll bar, thumb tacks to "pin" menus on the screen, push buttons, and (in the early versions at least) an alarming 3D zoom effect for error message notices. But Joy's opinion is different. "It's a high quality graphics design, not like Presentation Manager, which is kind of ugly and not aesthetically pleasing".

Joy went on to analyse the various approaches manufacturers have used to win their own chunk of the computing marketplace. "The traditional one is to develop your own technology and sit on it, like IBM, DEC, and Apple. Sun's approach was different; it used what I call 'blitzkrieging', or attacking by licensing your technology to everybody in the hope that it will become established". According to Joy, standards are set in the marketplace, not by committees, so it's vital to get your technology out there as fast as you can. The blitzkrieg technique presents a problem to the proprietary vendors: they either ignore it and do nothing, risking a dramatic loss of market share; adopt the technology and admit they were wrong ("like Data General", said Joy); or take up the third option, that of "kidnapping and burying the competition". This, he said, describes the Open Software Foundation. "You take the standard up, but say its not interesting".

"an easy subset"

But isn't OSF an encouraging move towards setting a fully independent standard? "It's easy to agree on a subset of standards", said Joy. "but no-one will sign up for getting rid

of the incompatibilities between the various proprietary extensions, say in the individual Fortran offerings of OSF members. System V sets out to do that with Unix - and that's why it was hard for those companies with their proprietary extensions to accept it".

Warming to his theme, Joy poured scorn on the objections of the Group to Sun's controversial relationship with AT&T, which gives it great influence over the future development of Unix. "They said we would optimise Unix for the Sparc processor - I wish I knew how to do that. The only secret is to write a good compiler. And as for Sun having an 18 month lead in porting new developments, Sun is actually shortening its lead by opening up its own technology. It only takes two months to port Unix, not eighteen months - the time OSF has set for itself to develop a complete environment from scratch".

SUN TO BEAT BILLION DOLLARS THIS FISCAL

The Sun success story continues, and president and chief executive Scott McNealy has been telling Dow Jones that the Mountain View company's net profit for the year to June 30 is likely to be about \$1.60 a share, a 44% increase over the figure for fiscal 1987. McNealy, who says that shortages of memory chips held back shipment of \$100m of Sun Microsystems' backlog for workstations during fiscal 1988, believes that sales for the year still will exceed \$1 billion against \$537.5m. "We're going to do better than we thought at the beginning of the quarter," says McNealy, who reckons that shortages of memory chips were exacerbated earlier this year by frequent spot market purchases by IBM, and he says that Sun has already detected some loosening of demand for memory chips in the wake of IBM's announcement earlier this month that it was now close to manufacturing all the memory chips it needed for its PS/2 family of personal computers. But the current quarter has seen Sun's shipment lead times stretch out to 65 to 70 days from the 45 day target, mainly on account of the chip famine. On the new 386i workstation, McNealy says shipments of the \$10,000 boxes will be in "four figures" during the current quarter. At the top end, he says that the Sparc-based Sun-4 workstations will account for 20% of business for the fiscal year. On the IBM-DEC-Hewlett Open Systems Foundation, McNealy is contemptuous, describing it as a "\$90m smokebomb" designed to distract Unix users from the efforts of AT&T and Sun to streamline and improve Unix and make it more consistent, and he thinks it could well backfire. Anyway, "We're ecstatic Unix is getting all this attention," he says cheerfully.

THE FIVE-YEAR EFFORT LIKELY TO BE BEHIND INTEL-SIEMENS BiiN FIRM

What is this new BiiN company formed as a 50- 50 joint venture between Intel Corp and Siemens AG (UX No 183)? The answer seems likely to lie in a little-publicised five- year development agreement signed between the two companies in April 1984. Under that agreement, Siemens was to put up \$80m over five years and contribute 100 engineers - the source of funds being its Power Engineering Group - and Intel would second 40 to 60 engineers to the project and give it space at its Hillsboro, Oregon base. The purpose of the project, code-named Gemini, was to develop a second generation of the Intel iAPX-432 object-oriented chip set, and under the project name P7, develop a family of microcomputers around it. Although way ahead of its time, the 432 was stymied by design faults that meant it performed below the design specification, and insufficient software development tools. It was designed to run the Ada military and real-time programming language efficiently, and most enthusiasm for the part initially came from digital PABX manufacturers, although all ultimately abandoned it either because it was too slow, or, in more cases, because it was too difficult to program. The ultimate aim of the Siemens-Intel project was to develop a range of powerful computers aimed at fault-tolerant multiprocessing and embedded real-time applications, at that time running an enhanced version of the iMAX operating system that was developed for the 432, though that may now have given way to Unix. Very little has been heard from the programme since it was announced, but at the time, observers were saying that the first machines were likely to appear in 1988 - which ties in with the inauguration of BiiN. Sources close to the company say that plans for a new family of industrial and "mission critical" computers running Unix will be revealed in the next few weeks, and that the announcement will represent a "huge investment".

UK DISTRIBUTION DEALS FOR PRIME AND CHARLES RIVER

Prime Computer used the European Unix User Show in London last week to announce a major distribution deal in the UK with ABS Computers of Brighton. ABS, which currently distributes Zilog and Pyramid hardware, will now act as a master distributor for Prime's EXL super-micros, which it will sell into the commercial arena. Prime itself will continue selling the systems into its more traditional markets of manufacturing, engineering and construction. The deal was valued at £1.5 million per year. And Charles River Data Systems now has a new distribution outlet in the UK with the launch at the show of a new company, Standard Platforms Ltd, set up with venture capital funds. The company, which claims close links with Charles River, will sell the systems on to software developers, and will also market CUSP software for program generation of control software using high resolution graphics and touch-screen technology - the prime markets will be government departments such as the MOD and other large organisations.

ZAI AZ INTERNATIONAL ENTERS WORKSTATION MARKET

Huntsville, Alabama-based Zaiaz International Corp has entered the systems business with its Zaiaz 933 STW scientific and technical workstation, which uses a 30 Mhz Intergraph Clipper RISC processor, and either an 80286 or 80386 as an I/O processor. Zaiaz, which is primarily known for its board level products using the Clipper and Nat Semi 32000 Series chips, provides a base level system with 4Mb RAM (expandable to 64Mb), and employs both the PC AT bus structure and a 32-bit expansion bus: 14 AT bus slots are available. The presence of the Intel processor allows DOS to be run on the system in addition to Unix V.3 ported onto the Clipper. Zaiaz says it will also carry out custom configuration for its customers in the area of graphics, memory, and I/O subsystems. The company, which was started in 1982 and employs 18 people, has its eye on business from the aerospace and defence industries, handy because of its position in Huntsville, where the NASA Marshall Space Flight Center, US Army Missile Command, and the Strategic Defence Initiative Organisation are situated. Zaiaz says it is now working on multi-processor versions of the workstations; it hopes eventually to sell on systems with up to four processors, and will also be upgrading to the forthcoming 50Mhz version of the chip.

LYNWOOD SCIENTIFIC REVEALS WORKSTATION PLANS

UK display terminal specialists Lynwood Scientific Developments Ltd of Alton, Hampshire, has revealed plans to launch a series of workstations by the Autumn of 1988. The company is now on the final stages of development on the systems, basically an upgrade of Lynwood's existing visual display terminal hardware to full Unix workstation with large memory and high resolution screen. Unix V.3 has been ported by a joint development team from Lynwood and Unix consultants The Instruction Set, and has been modified to run on both disk and diskless workstation configurations. There will be four models, ranging from the 4 Mips 14M monochrome system (with 14" screen) to the 15M, 19C colour system, and the 20M. The systems, also including a range of file servers, will use Motorola 68020 or 68030 processors. Workstations will be connectable to file servers via coaxial or fibre optic cable using Sun's Network File System and the Sun NeWs windowing system as well as standard X.11 from MIT. Lynwood has also licenced Uniplex Ltd's office automation software for the systems. Although prices have not yet been set, the company says its intention is to sell the low-end model at terminal prices. Lynwood has recently been acquired by Hunting Associated Industries plc, which has strong interests in the defence marketplace: Lynwood says that tempered versions of the new systems are currently under consideration.

THE PROCUREMENT GAME - MAJOR CONTRACTS LOOM

The US Government's Unix systems purchasing frenzy is in full swing and there are currently bids totalling some 300,000 Unix machines at various stages of the procurement process, according to UK office automation software supplier Uniplex Ltd. No matter how much doubters remain sceptical of widely-quoted estimates that 75% of US Government procurements stipulate Unix, it clearly accounts for a very healthy proportion of the \$17.4 billion 1988 Federal IT budget. In the UK, Uniplex reckons that the Central Government spending on Unix systems was "0%" of the £1.58bn IT expenditure in 1986-87, 3-5% in 1987-88 and 10-20% in 1988-89. Elsewhere in Europe, examples of major Unix procurements are cropping up almost everywhere: following the huge Siemens/Nixdorf contract to implement Unix systems throughout employment offices, the Deutsche Bundespost is due to award a contract for 5,000 Unix systems and 7,000 DOS machines this year. Events in Scandinavia have been influenced by the Swedish Government's pioneering decision to specify Unix for administrative systems a few years back, and major bids are now said to include 3,500 systems for the Swedish Royal Mail and 1500-1900 systems for the Norwegian Department of Defence. And Uniplex reckons that even in Australia, historically not one of the most enthusiastic markets for Unix, the Australian Tax Office wants Unix systems to support some 100,000 terminals.

The most famous of the US contracts, the US Air Force's AFCAC 251 project which was the subject of the DEC/Wang appeal against the use of the SVID as a specification, is an example of how these procurements are driving the development of technology that then becomes available elsewhere in the market, comments Uniplex.

In much the same way as the Ministry of Defence CHOTS project provided the incentive for suppliers to develop secure Unix systems that they are now looking to supply for other Government contracts and commercial applications, AFCAC has proved a trendsetter for the US market. Other agencies have more or less copied the AFCAC specification for their own needs, while Uniplex itself ended up with considerably enhanced product as a result of trying to meet the AFCAC requirements.

A list of US contracts compiled by Uniplex makes juicy reading:

The granddaddy of them all, AFCAC 251, issued by the US Air Force now, according to Uniplex, calls for 35,000 systems with an estimated value of \$4.5bn (other sources estimate the value as nearer \$2m). The contract is now expected to be awarded in November 1988; companies believed to be still in the running are Zenith, AT&T, Planning Research Corporation, Honeywell, Lockheed, and Computer Sciences Corporation with IBM.

ACCS, 120,000 systems for the US Army; award of the contract is due as soon as July this year.

A further 40,000 Unix systems (and 110,000 DOS systems) are also wanted for the US army for its Supermicros contract, currently at the Request for Proposals stage and due for award March 1989.

The US Treasury is a long-standing Unix user; the Internal Revenue Service opted for several hundred Zilog supermicros in the days when Zilog was a top player in the embryonic market. The follow-up acquisition, for not only the IRS but also the rest of the Treasury's twelve bureaux, is the 25,000 system Treasury Minicomputer Acquisition Contract. Currently at the Request For Information stage, TMAC calls for hardware, software, integration and support services.

The Federal Aviation Authority's OATS procurement, for 43,000 systems, is at the RFP stage.

The US Air Force is also said to be handling the successor to the huge Department of Defence Desktop procurements, under which many thousands of Zenith MS-DOS micros are already in use. Desktop III calls for some 30,000-50,000 small (eight user) Unix and OS/2 systems, and is at the Request For Information stage (during which the agency produces a wish list and solicits comments from the industry). Award of the contract is due July 1989.

Other procurements underway include MAC C2 IPS, the Military Airlift Command's Command and Control Information Processing System from the US Air Force, due for award October 1988 and encompassing some 6,400 Unix systems worth perhaps \$200m. The US Air Force wants 58 Unix systems initially, some 600 eventually, for its WPAFB contract expected to be awarded this month. The US/South Korean combined Forces Command is due to award its TACCIMS, Theater Automated Command and Control Information Management System, contract for 400 systems in September this year. And the Department of State wants 1400 systems for its DOS contract due for award January 1989.

STELLAR GETS \$1m INVESTMENT FROM MITSUI & Co

Japanese trading giant Mitsui & Co Ltd is cementing its relationship with William Poduska's Newton, Massachusetts-based Stellar Computer Corp by investing \$1m in the emerging company. In April it signed to market Stellar's GS1000 graphics supercomputer in Japan and is doing joint software development for it with the Mitsui Zosen Systems Research Inc unit of Mitsui Engineering and Shipbuilding Co. Asahi Chemical Industry Co is also marketing the Stellar GS1000 in Japan.

APPLE BUYS ORION FOR ITS SNA NETWORKING SOFTWARE SKILLS

Adding to its skills in SNA networking software, Apple Computer Inc has acquired privately-held Orion Network Systems Inc, Berkeley, California on undisclosed terms, and plans to run the 31 employee company as a subsidiary from its present base. Orion worked closely with Apple's software engineering group on the MacAPPC product launched earlier this year. MacAPPC emulates SNA Logical Unit 6.2 and Physical Unit 2.1 for communication with SNA hosts. Orion, which currently numbers AT&T, Apollo Computer, Olivetti, Philips, Prime Computer, Honeywell Bull, Banyan Systems, NCR, and Intel among its 30-plus OEM customers, will continue to market its products to third parties.

SCIENTIFIC COMPUTER DESCRIBES ITS SUPERFAST 1.4Mbps TOKEN RING VECTORNET

Claiming a major breakthrough in supercomputing networking technology, Scientific Computer Systems, as reported briefly (UX No 183), this week announced an ultra-high-speed token ring networking system "that provides the fastest data channel available today". The San Diego Crayette builder describes VectorNet as an advanced networking topology based on the token-ring access protocol and fibre optic technology. It offers a data transfer rate of 1.4Gbits-per-second, and enables data to be exchanged rapidly over a fibre optic cable or copper cable backbone from desktop workstations to data centres. VectorNet runs more than 140 times faster than Ethernet, according to SCS figures, and 14 times as fast as the proposed Fibre Digital Data Interface (FDDI) high-speed networking standard. Marketing VP Stephen Campbell said the product was available now, and had already been shipped to customers such as Boeing Computer Services and the San Diego Supercomputer Centre, while competitive products from Integrated Photonics and Ultra Network Technologies (UX No 171) were both "more expensive and not yet available". Target customers are research laboratories, large corporations and universities, where there is a mix of machines from Cray supercomputers through DEC VAXes to Sun Microsystems workstations, and where users would like to get large amounts of data such as graphics details around the network as quickly as possible. The new solution consists of two components: VectorNet Interface Processor and VectorNet Interface Adaptor - each is in fact a processor. The communications processor supports linking of VectorNet to existing local area networks such as Ethernet, DECnet, Hyperchannel or FDDI networks. The interface Adaptor is backed by what is described as a 22 MIPS fully-buffered ECL-based protocol processor, and is programmed to enable slower computing equipment to communicate with VectorNet, leaving the local Interface Processor dedicated to input-output and external gateway routing. The protocol processor includes the lower layers of the ISO Open Systems Interconnection standards, freeing the host from communications handshaking. VectorNet will be licensed to end users, computer and workstation vendors and to "anyone else interested in the product". Scientific naturally hopes that its first major innovation will help to sell its core product, the SCS-40 line of minisupercomputers, which support the Cray CTSS and COS operating systems as well as the company's own Scenix implementation of Unix System V.3.

US SAYS SOFTWARE "LOOK AND FEEL" IS COPYRIGHT

In a decision that looks likely to prove a boon to software publishers bringing "look and feel" suits over companies who appear to have copied the screen displays put up by their programs, the US Copyright Office has ruled that when a program is copyrighted, protection automatically extends to all the graphic and textual displays produced by the program - which means that it will be no defence to say that quite different code was used to produce a display that imitates that of a copyright program. Software firms will therefore not need to submit each individual display for copyright purposes. Taking no chances, Apple Computer Inc took pains to copyright the look-and-feel of the Mac interface as well as the code.

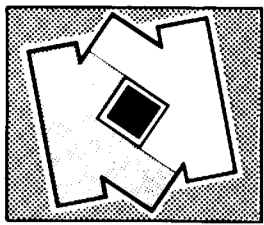
ORACLE SHOWS OFF ITS "MOST SIGNIFICANT"

UK-DEVELOPED SYSTEMS CASE TOOLS

Oracle Corp last week made what it claims is its most significant announcement to date, with the worldwide launch of its UK-designed computer aided systems engineering (CASE) toolset. Research and development for the project started at Oracle's UK base in Chertsey, Surrey, way back in 1977, and has so far cost the company £5m - a figure which is expected to reach epic £250m proportions by the end of 1993. Oracle defines the end objective of CASE tools as automating the activities of designers and analysts, and claims that the tools will avert the current software crisis by speeding up the in-situ design of software, and ensuring that it is right first time. The key to Oracle's CASE environment is the Designer Interface, effectively a multi-tasking graphics workbench which enables users to develop models of applications by using mouse-selected standard windowing software, icons and pull-down menus: it also features an overlapping application subsystem, which enables two designers across a network to work on the diagram in simultaneous real-time. Currently running on Sun workstations, plans for DEC VAX and Hewlett-Packard versions are well under way. The interface also provides access to the Case Dictionary, a data dictionary based on Oracle's existing SQL Design Dictionary, which stores diagrams developed during the design and analysis stages of a project, together with a company-constructed glossary of system terms, and a "rulebook" - Case Method - based on the company's own systems development methodology, providing guidelines for system developers. Licence fees for the Case Designer and the Case Dictionary range from £6,000 to £14,000 per user, while a series of Case Method courses costs between £2,000 and £3,000. All the products are available immediately.

OSF LOOKS TO SUPPORT FROM JAPAN

Hewlett-Packard Co's John Doyle, director of the Open Software Foundation has visited Japan to drum up support for the Foundation's planned open Unix standard, reports Newsbytes Japan - but from most accounts his visit was not received with overwhelming enthusiasm. Doyle told reporters, "We have already raised \$90m and we want more sponsors, including Japanese PC makers, to join the Foundation; we have sent to about 300 Japanese PC makers letters asking for their participation". Yukio Mizuno, managing director of NEC Corp, admitted talking with Doyle, but he was noncommittal - "I only listened to him," he said; and Fujitsu is reported to have refused Doyle's visit, despite publicly stating that standardisation of Unix is important and that it is considering joining the Open Software Foundation. Hitachi Ltd had no comment.



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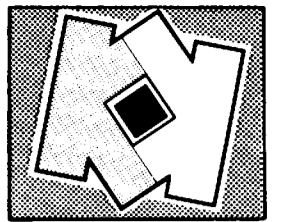
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TECHNOLOGY



Weary Whitechapel Workstations receivers Peat Marwick McIntock now say that a decision on the future of the deceased company's Hitech-10 series based on the MIPS RISC processor will be made during this week: at one stage Prime Computer Inc (which also uses the MIPS chip in its 5000 Series workstation) was rumoured to be interested, but although negotiations are still officially open, the manufacturing rights are now expected to go to a European consortium thought to include the Alcatel-owned ComputerTechnik Muller (CTM) of Konstanz, West Germany, which was originally chosen by Whitechapel to build the Hitech series.

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Cross compilers have traditionally lagged behind "resident" compilers in terms of features and capabilities, but Software Development Systems Inc of Downers Grove, Illinois aims to change all that when it launches its CrossCode C compiler for the 68000 Series in July: it allows PC users to edit, compile and link C code on an MS-DOS, Xenix, or Unix machine, and offers ANSI standard compatibility, user-selectable C type sizes, position independent code and unlimited symbol capacity, for \$1,595 (MS-DOS and Xenix) or \$4795 (Unix).

- 0 -

Convergent Technologies has won an OEM agreement for its Intel-based Server PC range from the \$900 million Electronique Serge Dassault of Saint-Cloud Cedex in France: the company will market the systems in France to government, financial, public service and telecommunications sectors, and says it will be adding value in the fields of communication and specific application development.

- 0 -

Groupe Bull SA and Honeywell Bull Inc have extended their Open Systems Interconnection-compliant Distributed Systems Architecture so that it can interwork with IBM's System Network Architecture; the extensions mean that a user at a single workstation will have access to all applications on the network in either environment, file transfer is supported, and transaction processing systems will interact.

- 0 -

Datapoint Corp, San Antonio, Texas has gone to Televideo Systems for 80386-based PCs, signing an OEM agreement worth \$10m over two years for up to 10,000 TelOAS III micros; Datapoint will add its own peripherals and sell the machines as workstations for its file servers over ARCnet networks.

ITL Information Technology plc, Hemel-Hempstead, UK, has revealed that eight Unix contracts have been signed since the launch of its Series 21 minis last November, including one major installation with the British Army of the Rhine.

- 0 -

NEC Corp has persuaded its partners Honeywell Bull Inc and Groupe Bull to join with it in establishing a Knowledge Engineering Centre in Boston to research artificial intelligence systems development: NEC formed its own AI section in Japan at the start of this year, and is engaged in developing practical expert systems on personal computers.

- 0 -

Dillon Technology of Maidenhead, Berkshire in the UK, has appointed the North American Systems Group of Atlanta, Georgia, as its exclusive USA and Canadian distributor: Dillon's products include multi-currency business software, and its existing clients include American Express, General Motors, Bank of America and British Aerospace.

- 0 -

Apple Computer Inc has had to backtrack on its promise that the majority of applications written for the Mac System Software would run unchanged as tasks under its A/UX implementation of Unix for the Macintosh II: according to Computer Systems News, the company "didn't realise how many applications bent the rules", and is now committing to support existing Macintosh programs under A/UX only in some future release of the system.

- 0 -

Quadratron Systems says that the latest version of its Q-Office software - Release 1.95 - is now available for the DEC VAX 8650 under Ultrix: the release reduces cpu cycles and data I/O required, and includes support for PostScript laser printers, more language symbols.

- 0 -

Unisys Corp is declining to comment on a resurgence of rumours that it is about to launch a bid for NCR Corp, but they were good for a \$3.375 leap in the NCR share price to \$64.125 last week: Unisys has a declared ambition to be a \$20,000m company by the early 1990s and says that acquisitions will be necessary to meet the target; if it were to win NCR it would expand turnover by about 15% to \$15,000m or so, but might find that one and one make less than two as there is a substantial overlap in Unix systems, communications processors, and at the personal computer end of the market - and Unisys gets some of its machines from NCR; NCR would be unlikely to go quietly, and most analysts were sceptical, saying that the \$2,800m NCR would currently cost is too bigger bite for Unisys so soon after its birth.

Tandem Computers Inc has consolidated its divisions into five operating groups - the Tandem Systems Group; Tandem Marketing and Sales Group; Ungermann-Bass Group; Tandem Customer Services Group; and Tandem Companies Group for its telecommunications, Unix systems, and security products.

- 0 -

Motorola Computer Systems Ltd has signed Manchester, UK-based Fraser Williams as a value added reseller for 68030-based Series 8000 commercial systems in a deal "potentially worth an annual seven figure sum": the agreement will cover a major implementation by Fraser Williams for integrated manufacturing and control systems.

- 0 -

Willow Ltd of Wimbourne, Dorset in the UK, has developed a range of device command converters for use with Unix and Xenix versions of Access Technology's 20/20 spreadsheet, which extend the ranges of printers, plotters and terminals that support 20/20 graphics; Willow has also been working closely with hardware manufacturers such as IBM, ICL, and Altos, and software developers Quadratron; it carried out the 20/20 work in response to requests from a number of major 20/20 users, including British Telecom.

- 0 -

Mice are an athema to people who are comfortable working at a keyboard, and Hewlett-Packard Co has taken a licence from the inventor, Craig Culver of Woodside, California, for what could prove a much more acceptable alternative: it is called the Isopoint, and according to the Wall Street Journal is a cylinder about the diameter of a drinking straw that appears to run along between the space bar and the leading edge of the keyboard; it is manipulated by the thumbs and can be slid to the right or left to move the cursor in the same direction, rolled to move it up or down, and is depressed to execute a command.

- 0 -

It was a bit of a surprise when we saw that the name of the new joint venture company between Intel Corp and Siemens AG was to be called BiiN, apparently pronounced "buy-in", but we began to wonder whether we'd got the date wrong and it was April 1 when we read "The name of the company, BiiN, doesn't have any precise meaning and the initials do not correspond to any words; the name was chosen by computer" - sounds like a very good reason for not asking a computer to dream up company names for you.

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REAL-TIME RISC SPARC FROM WIND RIVER SYSTEMS

Sun's SPARC processor is set to get a push into real-time markets, enabling it to compete with the likes of Motorola's 88000, thanks to the development of a version of Berkeley, California company Wind River Systems' VxWorks operating system. VxWorks is already available for 680X0-based target systems including Sun-3 type boards and is claimed to differ from most other real-time offerings in its extensive facilities and Unix compatibility. Wind River president Jerry Fiddler said the product can run Unix object modules although it is "certainly not 100% Unix compatible", it includes Sun's NFS, Remote Procedure Call and full BSD 4.3 networking which can be used to implement multiprocessor support, and Sun has provided a special version of its dbx debugger allowing VxWorks systems to be debugged from Sun hosts. The new version will extend support to SPARC targets, and is expected to be available as a package with SPARC VME systems under development at Carrolltown, Texas developer Mizar Inc. Wind River hopes Sun will itself eventually sell the product directly. Wind River also recently sealed an agreement with Ada compiler specialist Verdix to provide a VxWorks Ada kernel. The new developments could be the spur necessary to push the Sparc into the military and control applications where a real-time operating system is essential.

MULTI-USER 68030 MACINTOSH TOWER IN APPLE COMPUTER PLAN

A 68030-based tower configuration of the Macintosh that would be Apple Computer's first ever multi-user machine is among four new Macintoshes in development for launch over the next 18 months, according to Macintosh Today magazine. The full expected line-up is the long-expected laptop; a three-slot model to come in under the version of the basic Mac; a colour version of the SE; and the floor-standing Macintosh Tower using the Motorola 68030 processor. The Macintosh with three slots, code named the Mac 1.5, will have the same 68020 processor as the Mac II, with 2Mb memory and option for a half height Winchester or two floppies, for a price of around \$4,000. On the colour SE, Sony is said to be working on colour monitors for it, and it is pencilled in for deliveries in the first quarter of 1990. The Mac Tower is expected to be capable of supporting multitasking for up to 16 terminals, marking a challenge to companies like DEC that have begun to treat Apple as a partner. Release dates for the new machines will be determined in large part by memory chip availability, says Mac Today.

MOTOROLA DRAWS CLOSE TO EDGE FOR HIGH-END SYSTEMS

Industry sources claim that Motorola Inc is close to announcing a deal with Edge Computer Inc, Scottsdale, Arizona, in a bid to encourage customers to remain faithful to its 68000 product line. Edge produces 32-bit CMOS VLSI processors that use the Motorola 68000 instruction set, but have a three to five times performance advantage over the top-end Motorola 68030. And although Motorola has moved to fill this gap with its RISC processor the 88000, it is still early days yet, and Motorola has not yet revealed its strategy and software tools for aiding the switch from the 68000. Olivetti has already turned to Edge for the top-end of its LSX range, and an unnamed Japanese company is now understood to have decided on Edge technology. An announcement could be made within the next few weeks.

COROLLARY INC BEHIND ZENITH AIR FORCE BID

Project 251 - the massive \$2,000 to \$4,500m US Air Force contract for the supply of multi-user departmental office automation equipment - has already caused a great deal of heat amongst computer manufacturers such as DEC and Wang over the specification of System V. One company still in the running is Zenith Data Systems, which was rumoured back in April (UX No 173) to be planning a multiprocessor 80386 system for the contract back in April. That system now appears ready to be launched, and is the work of add-on board specialists Corollary Inc of Irvine, California, which launched an 80386 version of its ATtain multiprocessor at Uniform in February (UX No 168). Corollary is understood to be working on an upgraded version of the ATtain 386/mp for Zenith, using 25Mhz 80386s to deliver 15 MIPS, supporting up to 64 users, and running Xenix System V. Zenith is likely to offer the machine as a commercial product later this year, with prices starting below \$20,000. Other companies still thought to be in the running for Project 251 include AT&T Co, Honeywell Bull, Lockheed Corp and Computer Sciences Corp with IBM. Meanwhile, Corollary is also working with North Star on a multiprocessor Unix box for the commercial market; that is also PC AT-based, and is expected later in the year.

APOLLO TO LAUNCH 68030 WORKSTATIONS

With availability stabilising, Apollo Computer Inc has been tipped to follow rivals Hewlett Packard and upgrade its DN4000 Series workstations up to the next generation Motorola 68030: the move was said by UK Marketing Manager Steve Webb to be a "natural evolution" of the product line, although he dismissed reports that the machines would achieve benchmark ratings of up to 7 MIPS, compared with 4 MIPS for the present top-end System 4000 workstations.

BEYOND WINDOWS, ICONS AND MICE AT THE XEROX EUROPARC

With sales last year of over \$13 billion, Rank Xerox and the Xerox Corporation must be the computer industry's best kept secret. Fifty years after the invention of the xerographic copying process, Xerox's presence in offices around the world is still mostly restricted to the photocopier, despite the company's efforts to move into computer-based office automation. This in itself would not be surprising if the list of Xerox computing innovations was not so impressive: the company's famous Palo Alto Research Centre in California saw the development of Ethernet-linked computers, filesystems and printers; the invention of the mouse and first use of icons with workstations; and major leaps forward in distributed computing, object oriented languages such as Smalltalk-80, and electronic and laser printing.

Only Philips comes to mind as a comparable organisation that somehow fails to follow up its research triumphs with deserved commercial success. Vice President of Xerox Corporate Research, Dr William Spenser, takes a longer term view. "The information revolution is the first major change in the way the world has done its business for 200 years, and like the industrial revolution it will take a long time to mature. We can't afford to bet the company on early trends, putting ourselves in a poor position for the revolution".

So Xerox pours money into research, with centres of excellence at the Palo Alto and Webster Research Centre, a Xerox Research Centre in Canada, and most recently the new EuroPARC centre in Cambridge, England, officially opened last week by Michael Hardy, Director General for Telecommunications, Information Industries and Innovation for the Commission of the European Communities. The laboratory employs twenty three people with disciplines as diverse as programming and software engineering to psychology, music, linguistics, anthropology, graphics and typography.

EuroPARC is just discovering Unix, with a few Sun workstations scattered between the Xerox systems. But the real business of the centre is to hide the operating system behind a comprehensive set of tools out in a way that will be understandable and useful to the user. EuroPARC's basic charter is to bring a European perspective into the area of human computer interaction. It is well known that the Macintosh interface arose from the pioneering work at PARC in the 1970s. More recently AT&T's Open Look interface has gone back to Xerox, partly in an effort to avoid the current legal difficulties associated with Apple's "look and feel", but also to reap the benefit of continuing research at Xerox.

Fingers, portraits and buttons

It's therefore not surprising to see that Open Look bears more than a passing resemblance to the hybrid set of tools used by the researchers at EuroPARC, which takes some of its elements from the Xerox ViewPoint interface used for Xerox office systems. Each researcher has a workstation on the desk connected to the Xerox Corporate Internet distributed network. Electronic mail is the most widely used function, and this is supplemented by a number of tools, such as the Finger system, which maintains a database of users logged into the network, along with information on how to contact them; on screen Portraits that allow users to contact others just by selecting the right picture; Talk connections that let two users carry on an interactive "conversation" by using a window each side by side on both screens;

and Buttons, which displayed on the screen, carry out an action when "pressed". By creating new buttons, users can tailor their own systems, and buttons can be sent over the electronic mail system, allowing information and new techniques to be shared.

One requirement is taken as read for all Xerox interface developments - a large, bit-mapped screen. The ViewPoint interface, for instance, is most effective on a 19" Xerox workstation; reduce it to 15" and much of the usefulness of multi-windowing, banks of folders, in-trays, and function icons are lost. This is no doubt one reason why Xerox systems have not found a mass market - it is still considered an extravagance to have graphics terminals on every desk. But the Xerox approach is in line with the predictions of analysts that say such screens will predominate in the 1990s, something that those supporting the bit-mapped dependent X-Windows standard must also be anticipating.

The audio visual interface

It might be regarded as unusual to employ musicians and anthropologists in a computer science laboratory, but some of the more radical designs for human computer interaction are growing to depend on such disciplines. Presently, the dialog between computers and humans is largely visual and verbal rather than graphic; a computer presents words on the screen, the user points or types a reply. There is room for sophisticated typography and graphic design to clarify information; a more suitable tool than a mouse could employ both hands to greater effect; and sound (speech and non speech) can be used to improve the dialogue. An informative background "hum" can let the user know what the system is up to without drawing too much attention - keeping track, for instance, of the complex activity in a multi-processing workstation environment.

Many more ideas are the subject of research at EuroPARC. But one of the key issues seems to be the setting up of a workable analogy with a real situation, and working it through. Maybe in the 1990s we will all be less concerned with windows and more interested in setting up Rooms. Integrated workstations allow the overlapping of many tasks, so Xerox software allows the workstation to maintain a set of rooms, each with tools appropriate for particular tasks. Users can tailor their own set of rooms to meet their varying needs. The resulting technology can be seen as layers of "substrates", each built on the next, each providing less generality, but more easily changed to a particular function within its range of capability.

OREGON SOFTWARE ADDS "TRUE" C++ COMPILER

Compilers for the C++ language are now emerging thick and fast, and at last week's Software Tools 88 exhibition at Wembley Conference Centre in London, Oregon Software's UK distributor Real Time Products announced the availability of the US company's C++ compiler on Sun-3 workstations. A true compiler rather than a translator into C source code, the product is also said to be a K&R and ANSI compatible C compiler. The current version is shipping with a beta test version of a symbolic debugger: RTP promises the next version will be accompanied by a full release of the debugger. Oregon Software, which is based in Portland, Oregon, is best known for its Pascal-2 range of compilers; it recently also added a Modula-2 compiler. Birmingham company RTP prices Oregon C++ at £1495 for a single user system, at £3650 for up to five users attached to a single file server, and at £9375 for an unlimited number of users on a single file server.

WEITEK OFFERS SINGLE-CHIP VERSION OF 1167 FOR 80386 BOXES

Weitek Corp has re-implemented its widely-used 1167 three-chip arithmetic co-processor chip as a single-chip part called the Abacus, which is designed for use with 80386-based personal computers. The Abacus is available in 25MHz and 20MHz versions and one of the first company to declare for it is Unisys Corp, which will offer it in its new 80386-based machines. Sun Microsystems was also quick off the mark, and says it will offer the co-processor on its Sun 386i workstations as an option. According to Weitek, the Abacus boosts the performance of computationally intensive applications by between 100% and 200%, and plugs into the 121-pin Extended Maths Co-processor socket which is pretty much standard in 80386-based personal computers and enables the Abacus to be installed as well as, or instead of, the Intel 80387 maths chip - in the former case you need the Abacus daughterboard. Weitek says that 80386 machines from Acer, AT&T, Convergent Technologies, Dell Computer, Everex, Hewlett-Packard, Intel, NCR, Olivetti, Quadram, Sun Microsystems, Tandy and Unisys all have the socket. Samples at both speeds are available now with volume promised in October. It is \$882 for 5,000-up of the 25MHz version, \$445 for the 20MHz. The 20MHz Abacus on the daughterboard costs \$595 for 5,000.

COMPAQ LAUNCHES "MOST POWERFUL 386 YET"

Compaq claimed that its launch of the 25Mhz Deskpro 386/25 last week gave it "the most powerful personal computer available in the world" The 386/25 incorporates the 25MHz Intel 82385 cache memory controller with its own 32Kb of 25ns static RAM. It can also be equipped with up to 1.2Gb disk when two of the new Compaq 300/600 expansion units are used. With 1Mb CPU and 300Mb disk the price is £7,295; with 110Mb disk it's £5,595. But at the same time, Compaq won the race to produce the first PC to be built around Intel's new 16Mhz 386SX microprocessor, a 16-bit bus version of the 80386, which Intel claims will make it possible to produce low-cost PCs with the compute power of the 80386. According to Compaq, its new Deskpro 386s which uses the chip is "the first 386 machine for people considering a 286 machine". The 386s includes a VGA graphics controller, and comes in three models; a Model 1 with 1Mb CPU and 1.2Mb floppy for £2,195; the same with 20Mb disk for £2,695 and with 40Mb disk, £3,095. Both machines are out, now but 386s supply is limited till August.

COMPUTER CONSOLES SEES PROFITS BOOM

Computer Consoles Inc looks to report record turnover and an estimated 200% increase in profits for its fiscal second quarter, chairman John Cunningham told the New York Society of Security Analysts last week. "Revenues are expected to increase 20% over the like period a year ago and should exceed \$43m for the quarter," Cunningham said. Chief financial officer at the Waltham company Richard Krieger added that the Computer Products Division operations will be "solidly profitable as the division continues its dramatic turnaround after several unprofitable years." In the first quarter of 1988, Computer Products reached the breakeven point after full year operating losses totaling \$13m in 1987. Cunningham noted that sales of minicomputers to OEM customers - such as Unisys Corp and ICL - contributed strongly to improved 1988 projections. "We expect pre-tax profits from operations to more than double this year and expect significant improvements in profitability in 1989," he concluded.

THOMSON LAUNCHES "TEMPLATE" BUSINESS SOFTWARE

Thomson Computers, York, UK, has announced a new generation of its Sea Change Accounts software. The company supplies "ready made" accounts packages to dealers and VARs, who can then use the Sea Change applications generator to customise the package for their customers. Sea Change produces "templates" of the various software modules which can be run using the applications generator - it therefore takes up less memory than many 4GLs, and, according to Thomsons, no C programming needs to be carried out in the latest version. It runs on Unix and MS-DOS machines, with complete seven module dealer packages priced at £7,000: dealers then own the source template and can alter it as they wish, paying Thomson a runtime licence of £100 when a module is sold. UK computer manufacturer Bleasdale Computer Systmes has become the first dealer to sign up.

ETA-10 "NOW MATCHES CRAY Y-MP"; UNIX MARKETING PLAN

Control Data Corp's ETA Systems has announced that fully-compatible Unix System V will be available for the ETA-10 family of scientific supercomputers earlier than expected - from October - and the company sees it as a key plus in the battle with Cray Research Inc, because it believes that Cray's Unicos will not pass the System V validation suite. The Control Data Corp subsidiary got another fillip last week when the ETA-10 at the John von Neumann National Computer Center at Plainsboro, New Jersey was clocked at 3 GFLOPS in four processor configuration. ETA Systems reckons that with the full complement of eight processors, the machine will be three times as fast and score a peak 9 GFLOPS, in sight of the 10 GFLOPS it was targeting in designing the ETA-10. ETA told the Newsbytes wire that enhancements done at the von Neumann lab, run by the Consortium for Scientific Computing joint venture of 13 universities formed to share the cost of making more powerful supercomputers, make the machine as fast as the new, soon-to-be-shipped Cray Y-MP scientific supercomputer. Until Unix goes on general release, the operating system with the ETA-10 machines is the proprietary EOS.

TEXT RETRIEVAL THAT FINDS YOU ONLY WHAT YOU ASKED FOR

A start up company in Mountain View, California by the name of Verity Inc is working on a full text document retrieval system that promises to be a real breakthrough once it gets to market. The start-up is a spin-off of nine-year-old Advanced Decision Systems, a US government contract house specialising in artificial intelligence research and development for the intelligence community. Verity was formed to commercialise some of the information management tools ADS has been working on for the spooks. Its first product is Topic, a piece of software that aims to address the problem posed by the usual Boolean-based text retrieval systems: that you get back far more than you ever asked for. Using an object-oriented query language, Topic is claimed to compute the degree of relevance of every document in the database to the question asked and to present the documents that answer the question posed according to their relative scores. The company is also after speed. It says it can sort a database of 10 thousand and answer a complicated query in just a few seconds - and offer the same performance on read-only compact disks. The system will allow importing - from ASCII files, OCR readers, relational databases, even wire services - as well as copying, editing and annotating retrieved documents. It will also alert the user to new documents just added to the database that are relevant to his query. Topic will run in single-user or networked environments under Unix, MS-DOS, OS/2 and VAX/VMS. Support for Presentation Manager, X Window and the Mac are planned.

NEW MARKETS FOR TOSHIBA UK

Toshiba UK Ltd has revealed plans to unveil a new marketing strategy at the PC User Show, due to open at London's Olympia Exhibition Hall on Tuesday June 28. Essentially, Toshiba is repositioning itself in the UK as a solutions provider within the personal computer market, by making a range of new products available. Top of the list are the Star-LAN local area network and the T8500 20MHz 80386-based network file server: the former comes as a hub unit, priced at £395, or in £195 T-Card or D-Card versions. Second, and billed as the UK's first Postscript-compatible laser printer, is the PageLaser8 XL/PS, for a list price of £3,495; also available, for £2,295 is the "naked" PageLaser8 XL, which offers all the features bar the page description language, of its big brother. Software to back up the new strategy includes the T/Pix implementation of Unix, and Microsoft's Windows 386 for the T5100 portable, implementations of OS/2 on all -286 and -386-based computers, and MS-DOS Version 3.3 planned for the late summer.

BRITISH TELECOM ORDERS £3M ITL FAULT TOLERANT SYSTEMS

British Telecom International has become the first customer in the UK for Information Technology plc's Momentum 21 Model 96 fault tolerant systems, which are based on hardware from Sequoia Systems (UX No 150). BTI originally ordered Hemel-Hempstead, Hertfordshire-based ITL's proprietary Momentum systems, but revised its order to include two Unix-based 21096 computers to run its Telemessage and International Telegram switching system. BTI is looking to integrate the system with the Telex, Telecom Gold and Prestel networks, and will operate software based on OSI X.400 protocols. The systems will incorporate optical disk technology to handle the seven months storage of messages required under current regulations.

JAPAN INC GEARS UP FOR UNIX

The Japanese computer industry is increasingly focusing on Unix if the number of announcements buzzing over the international wires are taken as an indication: here is a selection of some of the latest. Software house Keicho Corp has signed with Oregon State University for joint marketing of the Orbs Oregon Rule-Based System expert system shell, and they will start out with a Unix version in July, following up with a version for OS/2 within the year: features of the system include modularity in which several independently-related rules can be combined to create a new rule, thus making system building more efficient and enabling small systems to be enlarged over time as the knowledge base increase; Orbs is currently written in Common Lisp but Keicho plans to rewrite it in C and will also improve and Japanese the user interface; Orbs costs \$32,000 on a DEC VAX, \$16,000 on the Sun 3 and Sony News workstations; Keicho has an exclusive licence for the Asian market, including Australia, and it is hoping to sell 30 copies of the program in the first year.

Sumitomo Electric has released an upmarket model of its U-Station EWS, calling it the U-Station E40, for marketing through its U-Station subsidiary: built around a Motorola 68030 supported by the 68882 maths chip, the E40 runs Unix System V and is pitched at the CAD/CAM, scientific and technical markets, and artificial intelligence; it has 4Mb memory, 64Kb cache, up to 3.4Gb disk and costs \$28,000 in standard configuration, and the sales target is some 1,500 of the workstations a year.

From June 1, the Sigma Project group developing all the elements needed for a high-productivity systems development hardware and software environment, has been offering experimental service for general users, with 1990 the target date for live commercial use: interested companies have to pay an upfront subscription plus an annual usage fee of between \$160 and \$240 for use of a Sigma workstation, versions of which are already being supplied by 11 manufacturers, including Fujitsu and NEC; a variety of software is available, including networking and technical software, at around \$8,000; started in 1985, the Project has now got through some \$200m completing the basic development, and around 20 companies are now testing the services.

Soft Bank Corp will next month begin shipping a Japanese version of the VP/ix package developed by Interactive Systems Corp, Santa Monica, and Phoenix Technologies, Norwood to enable MS-DOS to be run under Unix as a task: Soft Bank plans to sell through OEM channels, rather than directly.

Kubota Computer, a 100% subsidiary of Kubota Steel Corp, is to begin local manufacture of the top-of-the-line M/120 processor from MIPS Computer Systems Inc in August: rated at 12 MIPS, the machine will be configured with up to 328Mb of disk. Initial output has been set at 50 machines per month, and Kubota will continue to use Marubeni Electronics as its main distributor for the MIPS machines, while it concentrates on selling the Ardent computer Titan superworkstation, shipments of which will start at the end of July.

NBI CORP CHANGES DIRECTION WITH OPEN ARCHITECTURE SOFTWARE

NBI Corp, Boulder, Colorado, has been trying for some time to distance itself from the rather unfashionable proprietary office supplies business that it became involved in back in 1984, and is now changing corporate direction with a gradual move towards open systems. The company has launched two software products; OfficeWorks and Legend, which it says demonstrates the move to open architecture. OfficeWorks, which incorporates Microsoft Windows as a user interface, is a combination NBI 500 series server plus software that will Ethernet or Token Ring disparate hardware such as Mac SEs or IIs, MS-DOS micros, Unix workstations and NBI's own terminals for document management and information retrieval. Thus work groups will be able to get electronic mail, calendaring, revision tracking, electronic annotation and project templates delivered on a hardware and/or standard software interface - Mac for Mac users, Windows for MS-DOS users - that they're most familiar with. A 16-user Model 520 server, Unix operating system and OfficeWorks software environment is expected to cost between \$33,000 and \$42,000. A 64-user Model 570 would run \$66,000 to \$133,000. Legend, says NBI, offers "compound document processing" - in other words, it's supposed to combine the WYSIWYG page make-up features of a Ventura with full word processing capabilities and graphics in a single package. The application runs under Microsoft Windows on 286 or 386 machines and should move through retail channels - a new element for NBI - priced at \$695. Both products will be available later this year.

NETWORK DESIGNERS SETS ITS SIGHTS ON DEC AND UNIX

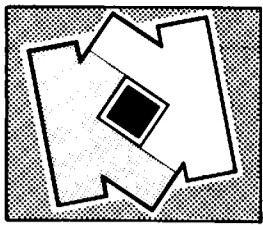
UK Communications specialists Network Designers Ltd, which has its headquarters in deepest Oxfordshire (the Old Berkshire Hunt Kennels at Kingston Bagpuize, to be precise!) has responded to what it says is a marked increase in multi-vendor networking by launching into the DEC and Unix marketplace. NDL's existing ICL and IBM micro-to-mainframe communications products (the Tango and Amethyst families), are now added to with the Amber family of DEC and Unix connect systems, which share a common design with the earlier products, allowing PC clusters or local area networks to run any combination of IBM, ICL, DEC and Unix host links simultaneously. The family includes AmberTerm, used for stand-alone dial-up PCs; AmberGate, for single, clustered or networked PCs with multiple sessions over asynchronous connections; AmberLan, for TCP/IP Ethernet connections; and AmberNet for X.25 connections. The products are on show at Wembley's Network start at £245 for AmberTerm and range from £500 - £2,500 for the others. The company has also launched micro-channel architecture versions of its Tango and Amethyst products, allowing the IBM PS/2 range to be linked up to ICL and IBM mainframes.

INTERGRAPH CAD/CAM PUSHES UK CHALLENGE FOR AMERICA'S CUP

Yacht racing has become big business since the Australians won the America's cup race back in 1983, the first victory against the US in 135 years. The Australian team, headed by Alan Bond, used advanced technology to design and build its revolutionary winged keel yacht, and bought the event worldwide media attention. Today, competitive teams need to embark on a similar technological effort in order to have a chance of success. The UK's Blue Arrow Challenge team, a £10 million syndicate formed by Peter de Savaray and employment agency Blue Arrow, is now ready with its own radical yacht design, described as a mono-hulled yacht with sliding centre board or keel, which it is due to launch at Falmouth, Cornwall at the end of next month. The yacht is one of three designs worked on at the Blue Arrow design centre in Southampton with the aid of around £1/4 million worth of CAD/CAM equipment contributed by Intergraph (UK) Ltd. Intergraph's Clipper-based Interpro workstation runs the company's Engineering Modelling System (EMS) software at Southampton, and is connected up to similar systems at the two other Blue Arrow design offices. EMS allows designers to define hull and keel forms, and automatically produces mass properties, surface areas and wetted surface areas of the forms in various positions of keel and pitch. The data can then be used for hydro-dynamics simulation and finite element analysis for structural integrity - Blue Arrow is currently considering a link-up with the Cray at Harwell Labs - which reduces the need for testing scale models in water tubs. In future designs, the intention is to use design data for driving numerically controlled machine tools for producing the keel. Peter de Savaray said that the teams were now further advanced after one year than they were three years into the Victory design in 1980. The US Supreme Court is currently deciding on the type of yachts eligible for the race - currently scheduled for September 19th. This could well disqualify the radical Blue Arrow design for this time - but if it does, the team says cheerfully that they will be in a good position for the 1991 event, with various conventional 12m designs and a 90ft yacht well advanced in their design stages. "We would not be in that position without Intergraph", said de Savaray.

MENTOR REVEALS TEK CASE TOOLS FOR ULTRIX VAXSTATIONS

Mentor Graphics, keen to reassure users of its support for the software development products it recently acquired from Tektronix, said at last week's London Software Tools '88 that the tools are now available on DEC VAXstations under Ultrix. Mentor also said "key employees of the Tek CASE division have moved to Mentor" including development staff. The products are CASE Analyst/RT, a system specification tool, CASE Designer which generates design models from Analyst/RT specs or "existing source code", and CASE Auditor for tracking complex software projects. The company is also offering a 50% discount for VAXstation versions of the tools, but only for users who are migrating from the Tek VAXstation-based CAE tools to the Mentor Apollo electronics design tools.

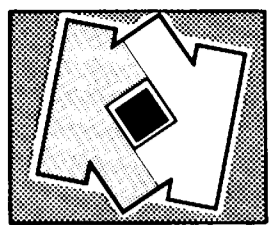


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A single-chip parallel processing element called the Blitzen, integrating 1.1m transistors on a single 1 square centimetre 1.25 micron CMOS chip has been designed by a team at the Microelectronics Center of North Carolina in Research Triangle Park: the plan is to use 128 of the chips to create a massively parallel supercomputer that would be small enough to be installed in a space station or satellite.

- 0 -

NCR Limited in the UK has signed an agreement with Dectrade Ltd, a seller of DEC and DEC - compatible equipment, following its recent agreement with Dativision (UK) Ltd for the Universe BASIC compiler. Dectrade will sell NCR's Tower range and PCs.

- 0 -

Tektronix Inc has announced the availability of version 1.3 of the PHIGS graphics system on its 4300 series workstations and its full range of terminals: it joins GKS, Core (IGL), and GDDM as the graphics standards supported by Tektronix via its Plot 10 graphics toolkit.

- 0 -

Preparing for its attack on the graphics supercomputer market, Alliant Computer Systems Corp, Littleton, Massachusetts, has completed the acquisition of neighbour Raster Technologies Inc, paying 2.2m new shares for the company: taking in the new Raster subsidiary, Alliant now has 479 employees, and combined sales of around \$75m.

- 0 -

IBM Corp has reportedly signed a major OEM agreement with Mentor Corp for 380Mb Winchester disks - the deal is with IBM's Austin unit, suggesting that the disks may be to go in the 6150 (RT) workstation.

- 0 -

Although Low and Bonar has announced buyers for most of the UK electronics businesses its put up for sale a couple of months ago, no sale has yet been agreed for Bonar August Systems fault tolerant computer (UX No 177) business in Crawley, Sussex and negotiations are continuing.

- 0 -

Along with the Arix-based Fortune Formula 80XX range, UK Fortune distributors UCL Ltd introduced Uni:World at the European Unix User Show: it is a set of menu-driven utilities for file system administration and runs on machines with Fortune For:Pro or Unix System V.3.1 operating systems.

Ing C Olivetti SpA has sold its 9.3% stake in Stratus Computer Inc for about \$50m - but the two companies hastened to add that the sale would not affect their business relationship, and the two have renewed their marketing agreement under which Olivetti resells Stratus boxes as the CPS under a non-exclusive worldwide agreement: Olivetti accounted for about 11% of Stratus sales in 1987, and Stratus is apparently working on a Unix implementation to allow the machines to be incorporated into the Olivetti LSX range.

- 0 -

Perhaps all is not well at Matra Datasysteme SA: President Charles Picasso has resigned; Norsk Data has ended the joint venture arrangement where Matra acted as its Southern European representative; and there are growing rumours of poor sales by Matra of Sun Microsystems workstations.

- 0 -

And Norsk Data was expected to launch a new CAD/CAM system as we went to press: it will use Technitron software running under the company's Cintram operating system, but Norsk says it expects to offer a Unix version later in the year.

- 0 -

Hewlett-Packard is being seriously affected by the memory chip shortage; the firm said that it has already delayed launch of its 80386-based machine four to six months because of the shortage, and that far from easing, the famine was worsening into the second half.

- 0 -

DEC has added new models to its VAXStation 2000 product set, providing more memory and increasing the number of displayable colours; hardware configurations now go up to 14Mb system memory, and users can choose between 16 or 256 colour systems, achieved through the use of two new components - a 12Mb memory card and an 8 - plane graphics co-processor.

- 0 -

Data General has announced a new communications link to allow the 200,000 users of its CEO office automation software to exchange electronic mail, documents and files with Unix systems: CEO Mail 1 is TCP/IP-based mail and document exchange software which resides on a gateway system and performs conversions of most CEO conventions, such as designating electronic mail as certified, urgent or confidential.

Ontologic, of Billerica, Massachusetts, has launched an object-oriented database for general purpose applications: Vbase allows for the integration of complex data such as text, geometry and graphics, and includes an object library of over 60 object types; it runs on Sun Microsystems workstations and DEC VAX/VMS computers, with an Apollo version to follow.

- 0 -

Systemstar Ltd of Hertford has launched the Oakland Group's C-scape interface management system into the UK market: the product is for C application development and incorporates screen designer, function library for screen windows, 123 and pull-down menus, borders, data validation, text and help, as well as a function building tool kit and device drivers: source is available to users and the run-time licence is royalty free.

- 0 -

Following its pact with its Mountain-View neighbour Sun Microsystems on SunOS and the Sun 386i workstation, Daisy Systems Corp has unveiled the Advansys range of eight computer-aided engineering and design turnkey systems, combining its own applications with Sun or its own workstations.

- 0 -

Siemens AG is pulling out all the stops to increase output of 1M-bit memory chips at its \$640m Regensburg plant, and says that it now expects to get 3.5m parts away by the end of its fiscal year to September against a previous estimate of 2m, and looks to be making 1m a month during the calendar fourth quarter, which is close to capacity; the 1M-bit part is based on a design by Toshiba Corp, but Siemens is working on the design of its own 4M-bit memory chip.

- 0 -

Anyone in the US who wants to try out a relational database management system on a scientific supercomputer can now do so by logging into the Cray-2 at the Minnesota Supercomputer Center: Informix Software says that its database and application development tools are now up on the machine, where they are running under Cray's Unicos Unix System V implementation.

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PHILIPS TURNS TO EDGE COMPUTER FOR TOP-END UNANNOUNCED 68020-COMPATIBLE PROCESSOR

Philips Telecommunications & Data Systems is to follow the path to Scottsdale, Arizona blazed by European sibling Ing C Olivetti & Co and adopt the Edge Computer Inc 68020-compatible processor as the basis of its forthcoming high-end Unix machines - and we hear it will be getting a new unannounced processor that is claimed to offer double the performance of the one used by Olivetti in high-end models of its LSX-3000 line. Philips will initially introduce the machine, to be called the 9600 and to run Unix System V.3, with the proprietary bus used in its present machines, but plans to move over to the VMEbus in the medium term. The Philips machines will fall into the \$200,000 to \$450,000 price bracket, and will be pitched inter alia as database servers. There could be a touch of needle about Philips' decision to go for the Edge processor - its Signetics Inc chip-shop is an official 68000 family second source, but Motorola has not passed masks for the 32-bit versions to any of its second sources.

...AND PHILIPS BECOMES EIGHTH SPONSOR OF OPEN SOFTWARE FOUNDATION

Philips was amongst the first companies outside those directly involved to register its support for the Open Software Foundation, launched back in May by angry Unix rebels Apollo, Bull, DEC, Hewlett-Packard, IBM, Nixdorf and Siemens, but it was not clear then that the company would become an additional sponsoring member, committing itself to fees of \$13.5 million over the first three years. The move boosts OSF's initial funding to over \$100 million. Philips has sold its Motorola-based 9000 Series Unix systems mainly into the banking, travel, transport and insurance market. Spokesman Mike Cousins said the company viewed OSF as "a useful vehicle for bringing the major hardware vendors together with greater standardisation in mind".

IBM DEMANDS PATENT ROYALTIES FROM ALL MAKERS OF RISC PROCESSORS

Continuing its campaign to squeeze every last buck out of its vast collection of patents, IBM Corp has now pointed out that it holds over a dozen patents on the concept of reduced instruction set computing - adding that its collection represent the vast majority of patents filed on RISC - and that it has another 100 or so pending. It wants royalties ranging from 1% to 5% of sales from all makers of RISCs, and while the demand is not likely to cause problems for the likes of Hewlett-Packard Co, which has copious cross cross-licence agreements with IBM, or for Sun Microsystems, which likely already pays top whack on other IBM patents it uses, the demand could prove embarrassing for small companies like Acorn Computers Plc with the Acorn RISC Machine, and perhaps for chipmakers like Cypress Semiconductor making versions of Sun's Sparc.

CYPRESS OFFERS 33MHz SPARC

Cypress Semiconductor Corp, of San Jose, California has taken leader ship of the Sun Microsystems Sparc world by coming out with a 33MHz version of the part - in 0.8 micron CMOS against the 1.5 micron used by Fujitsu in its 25MHz version. The CY7C601-33 is claimed to offer 20 times the performance of a DEC VAX- 11/780, five times the 80386. The set includes 7C608 floating point controller and 7C603 memory management unit. The 7C601 is \$634 for 100-up, and is sampling now. The full Cypress set is around \$3,000.

MEIKO LAUNCHES COMPUTING SURFACE WITH \$2 MILLION JAPANESE SALE

Meiko Ltd, Bristol, UK, has been hiding its light under a bushel ever since it first showed the Transputer-based Computing Surface at the Siggraph graphics exhibition in San Francisco back in 1985. The reason, according to Meiko's David Alden, was that the product was then considered "too dangerous for the general public - we needed to put in place the operating software and standard packages to make it ready to plug in and go". Nevertheless, the company has managed to accumulate an impressive 175 customers of the braver sort during the test marketing phase. On Friday it finally launched the Computing Surface officially, complete with a Unix-based operating system - "we're not deaf or IBM" said Meiko co-founder and Transputer designer Miles Chesney - and a raft of engineering and geophysical packages to run on it. Typically, the Computing Surface will be used with an IBM, DEC VAX, Sun or Prime front-end, but can also be used as a server on a network, or installed on an add-on board inside the Sun. Configurations range from a few megaflops for a workstation accelerator up to multi-cabinet mainframe sized machines with a gigaflop of performance are possible says Meiko; a standard M40 configuration, described as mid-range, offers 150 megaflops by using well over 100 transputers with half a gigabyte of semiconductor memory, disk, backup device and software costs £400,000. The number of Transputers is "limited only by the budget" according to Alden. Customers include Rolls Royce, which claims to have achieved throughput equivalent to a Cray when simulating and visualising the design of turbine blades; British Telecom, De la Rue and Glaxo have also bought systems. But the most recent coup, revealed Chesney, was the supply of a \$2 million, 250 megaflops system to "a major Japanese manufacturing company for an industrial application" - the company name was not revealed. "Since the major component of a supercomputer consists of memory", said Chesney, "we're sending it back there value added".

...AND NOW, THE NEXT LAUNCH DATE FROM NEXT

Firm predictions that NeXT Inc's workstation would be launched in mid-June again proved to be a false alarm: Time Magazine attributed the delays to problems with the speed of the display graphics. But the Newsbytes newswire, amongst other sources, is now predicting a July launch, saying it is good timing for fall purchasing decisions by universities and colleges. But an additional factor could further delay the introduction of the NeXT machines, according to published reports, and that is a possible dispute between Apple Computer and NeXT over copyrights. The attorneys from both sides are still said to be haggling over details regarding the similarity of each firm's offerings. Meanwhile, Jobs got something of a blow from one of his biggest fans. Carnegie Mellon University, an investor in NeXT, announced that it will develop versions of the Mach operating system for the Macintosh II. That's the operating system on which the NeXT workstation is rumored to be running, and if it's ported to the Macintosh, the NeXT machine will lose some of its individuality. To make matters worse, the University announced that the preferred machines for incoming students this fall will not be from the Palo Alto company, but from Apple and IBM -- the Macintosh and the PS/2 line.

CYPRESS CLAIMS 20 MIPS FOR 33MHz SPARC

Sun's SPARC microprocessor arrived in the marketplace over a year behind competitive RISC processors from MIPS and Fairchild (later Intergraph), but has itself enjoyed a similar head start over the Motorola 88000. But upgraded products from its established rivals combined with impressive claims of 17 MIPS performance at the Motorola launch in April left the 1.5 micron CMOS Fujitsu implementation of the SPARC, rated at 10 MIPS, looking decidedly sluggish in comparison. Now comes the next stage in Sun's "scalable architecture" strategy: a 0.8 micron CMOS SPARC running at 33MHz from Cypress Semiconductor of San Jose, California. Consisting of the 7C601 integer unit, 7C608 floating point controller, and 7C603 memory management unit, the set will be combined with cache for workstation implementations or used standalone in embedded applications, and is claimed to have a comparable performance with the 88000 - 15- 20 VAX MIPS and 4-5 MFlops floating point - but to be considerably cheaper and smaller in board area. The Cypress chip set occupies approximately 23 square inches and costs approximately \$2,984, compared with 36 square inches and \$6,855 for the Motorola. ~~Cypress also claims to offer larger and more cost-effective cache options.~~

....WHILE JAPAN STILL IGNORES RISC

Despite the West's infatuation with RISC technology, with most major semiconductor makers and many computer companies either announcing products or mounting research projects, the technology has been virtually ignored in Japan. Fujitsu helped Sun Microsystems develop its SPARC (Scalable Processor Architecture) RISC chip, but the work was done in the US. Toshiba resells the Sun-4 workstation and is planning to co-develop a SPARC laptop, and RISC products from Japanese subsidiaries of other US firms such as AMD have appeared at recent shows in Tokyo. But NEC is the only Japanese company that will admit to developing its own RISC chip, and that may never make it to market, according to a research manager at NEC's MicroElectronics Laboratory. The experimental chip is fabricated in conservative (if not obsolete) 3 micron design rules, rather than the sub-micro geometries now emerging in current products.

EUROPEAN CONSORTIUM WINS BATTLE WITH PRIME FOR WHITECHAPEL TECHNOLOGY

A new European consortium has acquired the rights to the technology of defunct workstation manufacturers Whitechapel Workstations after months of negotiations. Whitechapel called in the receivers after running out of money back in April: venture capital investors, including Newmarket Ventures, were apparently not in a position to offer the company further funding, and promised investment from a third party did not materialise. In May, Quest Group Plc bought Whitechapel's third party support, service and repair operations (UX No 180), but the rights to the MIPS-based Hitech-10 workstation, manufactured in Germany by ComputerTechnik Muller (CTM), remained up for grabs, to be fought over by Prime Computer in the US and a group of European investors, said to be primarily based in Holland. The European Group won, and has purchased the rights through its bankers, Barron International Holdings of Gibraltar. The consortium has set up an off-shore holding company in the Channel Islands, which incorporated a wholly-owned subsidiary on June 24th - a name for the subsidiary has not yet been decided. Initial funding from the holding company amounts to \$1.6 million.

Nick Christie, who was appointed Managing Director of Whitechapel only six weeks before its demise, will head the new company, which will be based in Bracknell, Berkshire. Christie said that a small number of ex-Whitechapel employees would also be employed. The firm has already set up plans for sales, marketing and support of the Hitech-10, and CTM has agreed to continue manufacturing the systems for the company to sell in the UK and mainland Europe. Christie denied that CTM and MIPS Computer System were amongst the investors, but said there was "a tight liaison between the three parties" to continue selling the product. He said that the small overheads and shedding of the large sub-engineering effort of Whitechapel, plus stronger links with software houses would allow the company a greater chance of success. Christie also revealed plans to sub-contract new product development out to an engineering group, possibly to Whitechapel spin-off Algorithmics, based in the South Technopark, Southwark, London. New generation machines are likely to target the high-end of the market, and may use the recently announced MIPS R3000 processor, according to Christie.

INFORMIX WINS OEM DEAL WITH MICRO-MAKER ACER

One of the largest PC manufacturers in the world has signed an OEM agreement with Informix Software Inc for both Unix and MS-DOS versions of Informix relational database and office automation software. Acer Inc says it will develop Chinese versions of Informix software for its Unix and DOS-based machines. Chinese versions of Informix-SQL, Informix-ESQL/C and C-ISAM are currently available on Acer's UNIX-based systems and are scheduled to be ported to its DOS-based machines by the end of the fourth quarter 1988. Chinese versions of other Informix products are currently being converted. Acer says it will be providing worldwide marketing, sales and support for both English and Chinese versions, in 69 different countries.. Headquartered in Taiwan, Acer has operations in the United States, the United Kingdom, West Germany, Japan, the Netherlands and Hong Kong.

ALTOS ADDS UNIX/XENIX TO 20MHZ SERIES 2000

Altos Computer Systems, San Jose, California, says it is now shipping 20Mhz versions of its 386-based Series 2000 systems. The Series 2000 Model 20 is now the top-end model in Altos' 386 range, and comes in seven configurations, supporting up to 64 concurrent users. And Altos has taken the opportunity to port its System V/386 operating system onto the Series 2000 for the first time, offering Unix and Xenix compatibility, which gives resellers a choice of over 1,000 third party applications, according to Altos. The Model 20 offers 120Mb tape drive as standard and an optional 380Mb ESDI hard disk. With room for three drives, this allows over 1Gb (unformatted) storage to be housed inside the machine. No prices were given.

ZORTECH LAUNCHES £99.95 C++ COMPILER FOR THE PC

UK software house Zortech Ltd of Woolwich, South London, claims it is the first company to come out with a full C++ compiler for the MS-DOS environment - C++ translators and code generators for MS-DOS, such as Glockenspiel's designer C++ (UX No 93), have been around for some time - and the company says it has already shipped 3,000 copies in the first seven days since its launch last week. Zortech Managing Director John Haggins says that the Zortech product also includes a standard C compiler, allowing programmers to make a gradual transition to object oriented programming. The larger models are included allowing the compilation of programs up to 1Mb in size, and Haggins says that all the examples in the standard text on C++ by Bjarne Stroustrup have been compiled and tested. Zortech boasts a worldwide distributor network, and has already sold 250 copies in Sweden, and signed up software distributors MSA in Japan. In the US, Zortech has set up a subsidiary operation based in Boston, and is shipping the first copies there this week. Demand for C++, says Haggins, is tremendous. The company is now working on an OS/2 version and a version optimised to run on the 80386 processor, promised in three months time. Zortech C++ is available on eight floppy disks, representing 2Mb code, and the cost in the UK is £99.99 plus VAT: in the US it costs £149.

SVID COMPATIBLE REAL-TIME FROM LYNX AND ALCYON

Two US companies have launched SVID-compatible real-time operating systems aimed at the embedded processor and factory automation markets. Lynx, of Campbell, California, has ported the System V compatible LynxOS to its 68010-based real-time control computer, designed to connect up to Sun Microsystems and DEC VAX hardware. The company is said to be working on an 80386-based implementation. And Alcyon Corp of San Diego has ported its Regulus operating system onto the Motorola 68030, and has already announced a version of the 80386. Both companies re-wrote the Unix kernel to allow Unix to function with a guaranteed response time, and neither system contains any AT&T code.

IBM, SUN, NEXT RUSH FOR MATHEMATICA

Next Inc plans to bundle it with every scholar's workstation it sells - that is when the machine is at last announced - IBM plans to offer it on the RT Personal Computer, Sun Microsystems and Silicon Graphics will also be offering it to their customers, and minisupercomputer manufacturers Ardent Computer Corp, and Stellar Computer Inc will distribute versions for their new models. "It" is a programming language and set of routines called Mathematica, which is designed to make calculations in all areas of mathematics as easy to do as using a pocket calculator. It was developed by Stephen Wolfram, a British-born acknowledged genius who has never graduated, but was nevertheless awarded a PhD by the California Institute of Technology when he was 20. Steve Jobs of Next describes Mathematica as "mathematics for the rest of us," and the product is designed to bring the utility of the calculator to tasks like factoring complex polynomials, graphing elliptical functions or calculating Pi to two thousand places of decimals, and can be applied to the whole range of mathematics from algebra through calculus to geometry. To find the integral of one over one-plus-X-to-the-sixth for example, the Mathematica user simply types Integrate [1x⁶,x] and a few seconds later, it comes back with a formula for the result. It operates with graphics as well as with numbers and algebraic formulae, and users can produce two - and three-dimensional colour pictures to enable them to visualise complex mathematical functions. As well as the built-in functions, Mathematica is also claimed to include a powerful programming language, and a rule-based approach enables users to transcribe formulae from textbooks straight into Mathematica. Dr Wolfram has also founded a company, Wolfram Research Inc, which employs 25 people in Champaign, Illinois and plans to market a version of Mathematica for the Apple Macintosh at from \$500.

X-OPEN FINDS SOFTWARE SUPPORT

Over 100 software vendors are now developing X/Open compliant software, according to X/Open Chairman Geoff Morris, speaking at a European Commission hosted strategy conference held in Brussels last week. Vendors working to comply to X/Open standards, including Microsoft, Cullinet, Lotus and Informix, would be able to brand their products with the X/Open logo and take advantage of the organisation's worldwide marketing programme, said Morris. X/Open predicts that by 1992, open systems are likely to represent 20% of the computer market as a whole. "Already major users are committing themselves", said Morris: "and market growth will be tremendous".

TOLERANT BRINGS FAULT TOLERANCE TO INDIA

Tolerant Systems Inc is expanding its presence in India with a manufacturing and licencing agreement with Hindustan Computers Ltd, New Dehli. The company has signed a deal worth \$500,000 allowing it the exclusive rights to produce Tolerant's Eternity Series hardware in India, Burmah and Taiwan, with Tolerant receiving royalties for each system sold. Tolerant already has similar deals in place in Korea and Taiwan. HCL aims to corner the fault tolerant marketplace in India.

DAISY MOVES TO SUNOS FOR NEW ADVANSYS RANGE

Daisy Systems Corp is shifting the emphasis of its Unix-based systems from its own Dynix implementation onto SunOS from Sun Microsystems. The latest range of systems from Daisy, called Advansys, includes Sun 386i workstations along with Daisy's own Logician and Personal Logician workstations, all based on Intel's 80386 processor. Daisy says that SunOS and DYNIX are compatible "at a network and applications level", and that it will continue to sell and support its existing DNIX CAE/CAD systems, but will be replacing DNIX with SunOS in the new range, after the release of Sun's X.11/NeWS graphics and windowing in the late autumn. The Advances range of computer-aided engineering/design systems, includes eight turnkey systems tailored to specific tasks, such as basic design entry, design and network simulation, analogue design, and custom ic layout: the basic design system, for instance, includes a workstation, schematic editor, component library, and packaging/reporting programs to prepare designs for printed circuit board layout. On a Sun 386i/150 with 8Mb RAM, 155Mb hard disk and 19" monochrome monitor, the system costs \$23,000. Using SunOS, TCP/IP and NFS, network users can connect up to servers such as the Daisy XL server (based on the Sun-4), or specialist hardware such as the PMX physical modeling system, and the GigaLOGICIAN and MegaLOGICIAN hardware accelerators for mixed-level simulation.

FUJITSU SUPPORTS PICK UNDER UNIX DOWN UNDER

Fujitsu Ltd markets pretty much its entire computer product line in Australia through its wholly-owned subsidiary Fujitsu Australia Ltd, and for Unix users it offers its UTS/M version of Amdahl Corp's UTS on its M-Series IBM-compatible mainframes, and its own SX/AR Unix on its A-Series of Motorola 68020-based machines. But due to the widespread Australian addiction to the Pick operating system, Fujitsu has teamed up with Unidata Australia Pty Ltd to offer medium and large users access to Pick applications under Unix. ~~Unidata's Relational Database Management System, which provides an ANSI standard SQL interface to applications that have been developed either under straight Pick or under the Prime Information and Revelation variants.~~

ARIX LOOKS TO IBM MID-RANGE FOR NEW BUSINESS

Arix has focused a push for new business on disenchanted IBM users with System 34/36s with software written in the RPGII language. The company has signed a worldwide agreement with Software Ireland in Dublin to sell on its Unibol/RPGII migration tool across the range of Arix minicomputers. Unibol/RPGII is an implementation of the PRGII language running under Unix that is compatible with language and support utilities supplied with the IBM hardware. It includes a compiler, runtime interpreter, symbolic debugger and utility support programs that provide an RPGII environment under Unix. "IBM left an enormous void and a lot of concerned users when it abandoned the System/34 and decreased support on the System /36", said Arix UK Managing Director David Bethel. "This agreement effectively plugs the hole".

NORSK DATA ADDS WORKSTATION VARIANTS OF NEW ND5000 MINI

Norsk Data A/S yesterday introduced a range of mechanical computer-aided design and manufacturing workstations built around its new 32-bit ND5000 processor. The new Technostation family, which runs Norsk Data's Technovision mechanical engineering software, uses the 32-bit CMOS gate array ND5000 CPU supported by dedicated ND120 16-bit input-output processors working together with one or two 16MHz 68020s used as the graphics processors. Despite the fact that these machines are billed as workstations, the ND5000-ND120 combination is implemented in a similar fashion on all the current Norsk Data machines: most of the Sintran III operating system runs on the 120, passing back to the 32-bit CPU only the operating system code it needs for the task in hand. The Technostation line comes in four models supporting one or two users. Prices range from #30,000 for the Model 21 single user two dimensional system, to #80,000 for the top of the range Model 72 with two workstations. All configurations feature the ND120 processor with 2Mb or 4Mb memory for single and two users respectively; main memory can be 4Mb or 8Mb. Up to 610Mb of hard disk is available, backup is handled by a 155Mb tape streamer while a 1.2Mb floppy disk comes as standard on all systems. A Unix facility is expected to be offered later on this year.

13 MIPS RISC SERVER FROM SILICON GRAPHICS

Silicon Graphics has announced the European launch of its 13 MIPS compute server: based on the MIPS RISC processor, the 4Server8 is compatible with the company's IRIS family of graphics workstations, and can be linked up to NFS/Ethernet-based networks. The system supports Unix V.3 with 4.3 BSD enhancements, and includes a C ~~compiler and the company's own Extent fast file system.~~ Price is £35,000, with immediate availability. Silicon Graphics now claims to offer connectivity that includes IBM mainframes, Cray supercomputers and PCs, and says it will be extending this with DEC connectivity within the next few months.

APOLLO SIGNS \$15 MILLION DEAL WITH MCDONNELL DOUGLAS

Apollo Computer Inc looks set to expand its operations into the automotive, aerospace and consumer products industries as a result of a new joint marketing agreement with McDonnell Douglas Manufacturing and Engineering Systems Co, in a deal valued at \$15 million. Through the deal, McDonnell Douglas will offer its Unigraphics CAD/CAM software package on Apollo workstations, for product design, development, analysis and manufacturing.

OSF - NEW STAFF, NEW MEMBERS, BUT STILL NOWHERE TO LIVE

The establishment of the Open Software Foundation is moving on with some urgency, due to the tight self-imposed deadline of eighteen months for the completion of its Level One applications environment specification. The Microbytes newswire reports the appointment of Ira Goldstein as interim director of research, and Alex Morrow as the group's director of strategic relations. The two are currently in the process of assembling a 250-person staff for OSF, including a development team to create the new operating environment based around Unix, and a research institute to attack computing problems.

The first stage will be to develop a user interface. "For the user interface, we'll first need some technologies to drive through the process," Morrow told Microbytes. "We'll issue an RFT -- a 'request for technology' -- then solicit input on what comes in. Then based on the input, we'll review the technologies and do a culling process. We'll wind up with recommendations and concerns, and based on that we'll make decisions; then specifications, implementations, and validation criteria." This will be when the real test of OSF takes place, when individual members react to the choice of technology other than their own.

Amongst new members of the Open Software Foundation, who pay a less severe \$25,000 to join than the eight fully-fledged sponsors, are Ingres developers Relational Technology Inc, said to be the first software company to join, and the first Japanese manufacturer, Canon Inc, thought to be a reflection of its close relationship with founder member Hewlett-Packard. Canon has been doing its own research and development on Unix, and uses it for the operating system of its electronic publishing system. And there are rumours that 88Open, the consortium of users supporting Motorola's 88000 RISC microprocessor (UX No 176) are considering joining the Foundation to form a mediating role between the OSF and AT&T/Sun camps. But Sun Microsystems itself does not appear to have ruled out joining, and is said to have had talks with the group.

Meanwhile, the first corporate decision of the OSF is looming fast: where to put its headquarters. Computer Systems News reports that six sites are currently in the offing: Massachusetts, near DEC and Apollo (and where the temporary headquarters is situated); Pittsburgh, near Carnegie Mellon University; Washington; Boulder, Colorado; Austin, Texas, the sight of similar industry organisations; or in Silicon Valley near Berkeley University. A decision on the sighting of the European office of OSF is expected next week.

INSIGNIA GIVES HEWLETT PACKARD DOS/UNIX INTEGRATION

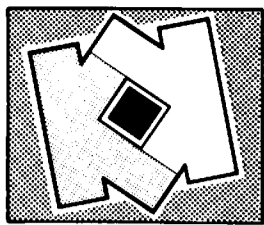
Hewlett Packard Co has gone to Insignia Solutions Inc for DOS and Unix integration on its HP 9000 Series and Series 800 systems. Insignia's SoftPC product is described as an "all-software PC emulator", which emulates an Intel-based PC environment for applications on non-Intel processors. Insignia claims that MS-DOS based PC software will run without modification on the HP machines, allowing concurrent operation and data sharing between HP-UX and DOS programs. SoftPC also interacts with standard PC peripherals assumed to be there, by intercepting commands to the peripheral controllers, simulating them, and substituting equivalent operations relevant to the host system. Insignia, of Sunnyvale, California, was founded in the UK in 1985, and SoftPC was the result of two years work by a team of 25 British computer scientists. The company began shipping OEM versions of SoftPC in the US last year. At the beginning of this month, the company began shipping end-user versions for Apple Macintosh and Sun 3 hardware. Other OEM vendors include Techtronix and Silicon Graphics.

SINKING DATA GENERAL PINS SINGAPORE HOPES ON UNIX

Data General, hit by falling sales world-wide, may be forced to sell its Singapore chipmaking and computer manufacturing plant - just a few months after investing \$100 million in a new factory and moving its regional headquarters from Hong Kong to the island state. The move gained DG massive help with its factory and a ten year tax holiday, but falling sales have left the plant with little to do. It has even been using its surface mount production lines to subcontract boards for other companies in a desperate effort to keep the plant open and the workforce busy. However, the management says that unless the company decides to produce its forthcoming Unix computers (based on the Motorola 88000 RISC chip) in Singapore, it will have to cut its losses and sell the plant. Meanwhile, down the road from troubled Data General, an ebullient Compaq is expanding its manufacturing plant and setting up a regional sales, marketing, support and distribution centre. The company says it has already shipped double the number of circuit boards this year as in the whole of last year, and is spending £21 million to set up two surface-mount printed circuit board lines by the end of the year.

MANNESMANN INCLUDES CCI IN ITS UNIX PACKAGE

Mannesmann Information Systems duly announced its Arix-based Unix range this week (UX No 184) - with the addition of hardware and software from Computer Consoles Inc. The CCI box will be re-badged as the 9405, and will be solved running CCI's LegalOfficePower software, designed for office automation in the legal profession. Above that will be the Arix machines, re-named 9425 (48 users), 9435 (96 users), and 9455 (256 users). Mannesman Managing Director Phil Claydon says that the multi-bus and multi-processor technology of the Arix boxes deal with the common Unix bottleneck problems, but are not cost-effective when translated to systems with fewer numbers of users. Hence the company will stick with its proprietary 9100 series micros for systems up to 32 users - it can directly connect the two ranges for file and resource sharing, and says that its software, aimed at the legal and manufacturing markets, has been converted to run under both environments. Installations will begin in the last quarter of this year.

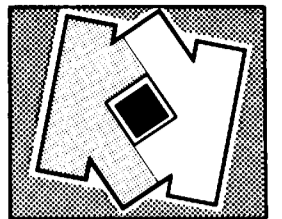


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Compaq stopped distributing Xenix for its micros back in January 1987 (UX No 113), handing the whole thing over to Santa Cruz Operation, which has promptly announced the availability of SCO Xenix System V for the latest Compaq machines, the 386/25 and the Deskpro 386s (based on Intel's new 386SX processor - UX No 185).

- 0 -

And Compaq has pointed out that, despite our omission of its name from the list of computers supporting Weitek's new single-chip Abacus co-processor (UX No 185), the Deskpro 386/25 was in fact the first personal computer actually shipped to include the chip.

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MIPS Computer Systems is expected to come out with a 20 MIPS supermini using its new R3000 chip-set around the middle of next month (UX No 179).

- 0 -

Wang Laboratories Inc has reportedly dropped plans for a high resolution 32-bit graphics workstation, according to Electronics News, because "it was to have been largely a proprietary design": Wang has recently been focusing increasingly on industry standards.

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Apollo Computer now claims to hold a 35% share of the electronic design automation (EDA) workstation market, the largest single segment of the engineering workstation industry: and at the recent Design Automation Conference in Anaheim, California, the company struck deals with LSI Logic and Mentor Graphics to integrate LSI's Modular Design Environment and Mentor's IDEA range of EDA tools with Apollo workstations.

- 0 -

Apollo also announced an OEM deal with EEsosf Inc through which EEsosf will purchase Apollo Series 3000 and 4000 workstations to bundle and resell with its computer-aided engineering software for microwave/radio frequency (RF) designers in a deal valued at up to \$2.5 million.

- 0 -

The Progress 4GL and database management system from Progress Software Corp is now available on Prime Computer Inc's EXL supermicros, following a joint marketing agreement between the two companies: a full application development copy for the Prime costs \$4,500.

National Semiconductor Corp has announced a fourth-generation design automation system for application-specific integrated circuits (ASICs): called DA4, the UNIX-based system enables designers to complete the design steps necessary to develop high-performance ASIC products, such as schematic capture, design analysis, critical path analysis, behavioral simulation, fault simulation, automatic test vector generation, and automatic placement and routing.

- 0 -

Valid Logic is extending its "White Knight" migration program (UX No 174) until July 29: the program allows users of Tektronix computer-aided engineering design tools to migrate to comparable Valid electronic design automation systems, following Tektronix's withdrawal from the CAE market, and Valid says it is offering discounts on Sun Microsystem workstations for Tektronix CAE customers who want to remain with a UNIX-based environment, rather than migrate to Mentor/Apollo AEGIS-based systems, although the program is primarily aimed at VAX/VMS users.

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Valid has also signed a cooperative marketing agreement with Interleaf Inc, which will result in the integration of Valid's ValidGEM graphics editor with Interleaf's workstation and technical publishing software on Sun and DEC hardware, allowing ValidGEM drawings to be included within Interleaf documents.

- 0 -

Sun Microsystems recently took two US electronics companies to court following claims that a Sun engineering manual provided to an OEM had been illegally copied and used for the design of a Sun-2 compatible memory board: Sun won the case against LCF International Inc and Custom Memory Systems Inc, and was awarded over \$1 million damages, plus attorneys' fees.

- 0 -

Encore Computer Corp chairman and president Kenneth Fisher has pumped an additional \$1 million of his own money into the company in return for a convertible subordinated note: "Encore's rapid growth in both revenue and profitability is most encouraging; along with the company's existing bank lines, this capital will help fuel continued growth with a minimum of dilution", said Fisher.

Lets's hope they got value for the additional money: Amdahl and Apple Computer were two of the biggest increases in research and development investment last year, raising their spends by 50% and 49% respectively

- 0 -

In Japan, Toshiba Corp has come out with yet another variant of its J3100 20Mhz 80386-based laptop, the SGT-101, to be available in September: it comes with a 100Mb disk and runs Japanese-language MS-DOS and Unix, with OS/2 promised for later this year: the SGT-101 is \$11,000, and Unix will be \$1,200.

- 0 -

IBM launched its AS/400 mid-range successor to the System 36/38 last week to what seem to have been rave reviews all round - but offered no hint or inclination to offering the machines with AIX.

- 0 -

But with the launch IBM has endeavoured to make its mid-range philosophy a little clearer: if you have six or seven users and are starting to look at multi-user environments you now go one or two routes; you can get involved at the operating system level and opt at the same time for portability by buying AIX; or you don't want to touch the operating software and need the fast development times offered by the AS/400 - the argument that there was lots of room for the 9370 as well was less convincing.

- 0 -

Shrugging off the suit from Apple Computer Inc, Microsoft Corp and Hewlett Packard Co have agreed to develop and market Microsoft's Excel spreadsheet for the HP New Wave environment, which is based on Microsoft Windows 2.0: the enhancements for NewWave will be integrated with the standard Excel so that customers will not need to buy a special version, and should be available mid-1989.

- 0 -

The world headquarters of Honeywell Bull Inc are to be transferred to Billerica, Massachusetts in the Boston suburbs from the Minneapolis headquarters of Honeywell Inc next year: the company already has some 6,400 employees working in a dozen communities around Boston.

- 0 -

Apple Computer cancelled what was to be a major presence at the recent Usenix exhibition and conference held last week in San Francisco, California: the company "couldn't get the people or resources together in time", according to a Usenix spokesman, quoted in Computer Systems News.

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RISC SYSTEMS TARGET MAINFRAME MARKET MIPS LAUNCHES 20 MIPS M/120 - EXPANDS INTO EUROPE

As Pyramid Technology waits in the wings with what it describes as "third generation RISC machines", due for launch next week, MIPS Computer Systems of Sunnyvale, California has launched its own new generation system-level product based on its recently launched 25Mhz R3000 RISC chip ((UX No 173). Claiming to offer the power of an IBM 3090 mainframe at 10 per cent of the cost, MIPS rates its new M/2000 at a sustained 20 mips, although a lower cost, 16 mips version is also available. The M/2000, based on a cpu module containing the R3000 and R3010 floating point processor and 128Kb instruction and data cache, can support up to 17 Gb disk capacity and 128 Mb main memory, with up to 8 ESMD disk controllers, 4 Ethernet controllers, and unlimited serial I/O ports. TCP/IP, Sun Microsystems' Network File System and PC-NFS, and an optimised C compiler with source-level debugger are also supported. MIPS emphasised its commercial push with early application software ports from Unify, Informix and Quadratron, but also emphasised the availability of a Verdex Ada compiler to support sales in the defence marketplace. Along with its current M/1000 and newly introduced M/120 system (UX No 179) MIPS will be selling the new machine through OEMs, and through distributors for commercial business. Prices start from around £100,000 in the UK, with a fully configured 20 mips system for commercial use costing £150,000, and first shipments are expected in August. MIPS also announced the setting up of two further European subsidiaries, in Germany and France, to add to its current European presence in the UK. The company says that growth in its business worldwide is currently over 40 per cent compound per quarter.

SUN CUTS 3D GRAPHICS COSTS WITH NEW SYSTEMS

Sun Microsystems last week introduced two further members of its SPARC-based Sun-4 Series with prices starting at \$44,000 (£34,600 in the UK). The two models are the Sun-4/150CXP, aimed at mechanical computer-aided-design users, and the Sun 4-/150TAAC for image processing and scientific visualisations. Both are deskside models with the same processor, memory and storage capabilities as the Sun-4/110. The graphics accelerator in the CXP provides fast vector and drawing speeds and polygon rendering rates to allow users to interact with and manipulate 3-D models in real-time. The TAAC has an applications accelerator from Trancept Systems Inc, which Sun acquired back in August last year (UX No 139), and has a high performance floating point unit combined with dedicated libraries of graphics functions built-in. Sun also announced an optimised implementation of SunPHIGS 3-D software, based on the ANSI/ISO PHIGS (Programmer's Hierarchical Interactive Graphics System) standard. And in a separate announcement, Sun introduced its first application product based on its NeWS (Network Extensible Window System) software; a colour graphic 3270 terminal emulator, SunLink CG2370. This will allow Sun users to access IBM host mainframe applications, including colour and host graphics from IBM's graphical data display manager.

ATARI "ABAQ" DELAYED

Atari Corp is reportedly having problems with its Transputer-based workstation previewed at Comdex last year, originally due out in March. Atari executive vice president Sig Hartmann, quoted in Computer Systems News, blamed both hardware and software problems for the delay. Helios, the Unix-like operating system being developed by UK developers Perihellion under AmigaDOS author Dr Tim King (UX No 142), is now expected to be complete by September, with the workstation following "soon after" according to Hartmann. The promised 68030 Unix workstation is also running late following its preview at Hanover (UX No 168), because of improvements in networking and graphics options. It is thought unlikely that either machine will hit the market before 1989. Atari is having to re-name its transputer system following the discovery that "Abaq" was already registered as a product name by a company in Belgium.

ALLIANT READY WITH GRAPHICS SYSTEM

Alliant Computer Systems, which recently acquired Raster Technologies Inc, Westford, Massachusetts (UX No 168) is to launch its first graphics oriented system at the Siggraph graphics show, Atlanta, Georgia at the beginning of August. "There is a limited market for single-user graphics machines costing around \$100,000" said Alliant UK's John Hart. "We will be offering high performance graphics on a shared basis".

X TRADE SHOW SET FOR AUGUST

The first trade show to focus on MIT's X Windows software is to be held next month, at the Massachusetts Institute of Technology itself. Xhibition '88 takes place between August 23rd and 24th, and amongst those supporting it so far are Adobe Systems, Apollo, HP, Masscomp, Siemens RTL, and Tektronix. The event is being organised by ICS, Cambridge, Massachusetts and IXI Ltd, Cambridge, UK.

RESILIENT PYRAMID IN BID FOR CITY BUSINESS

Pyramid Technology, which is preparing a return to the limelight with the launch of what it calls "third generation" RISC hardware on July 14th, has expanded its UK operations in a bid to win business from London's finance and business institutions. Pyramid claims to offer a cheaper alternative to fault tolerant vendors by offering "data resilient" systems, including a mirror disk facility which automatically duplicates files on separate physical disk partitions or in main memory, and resynchronises a replacement in the event of disk failure. Also included is a battery backup facility to protect against power failures, and the ability to run dual machines, ports, Ethernets and databases by using a hardware switch. Guy Norgrove, Manager of Pyramid's Finance Business Unit, said the company would guarantee uptime of 99.6% within the contractual period, at a substantially lower cost than specialised fault tolerant hardware. The first order has come from investment bank County Natwest, which is to replace its current DEC PDP11 systems with a Pyramid 9820 supporting 280 terminals. The existing Quasar software (from Apricot Computers) will run under what Pyramid claims to be the first symmetrical multiprocessing implementation of MUMPS. Norgrove said that the widely used Quasar and Comshare financial systems packages were initial software requirements, but that the future would lie in the sophisticated analytical tools and graphical representations of financial statistics now beginning to be used on Wall Street. "These are leading to databases running into tens of gigabytes", said Norgrove, who predicted that the financial sector would be responsible for 25% of the company's total UK business over the next year - that amounts to around £3-4 million.

BULL AND SLIGOS POOL RESOURCES ON EXPERT SYSTEMS

Seemingly in contrast to most of the rest of the world bar Japan, expert systems are taking off across the Channel, and Bull SA and Sligos SA have decided to pool their resources in the technology. Bull brings to the party its Kool expert systems generator and toolset, and Sligos will contribute its skills in knowledge engineering so that the two can offer users complete solutions integrated with their existing systems.

COMMUNICATIONS SOLUTIONS SOLD YET AGAIN - TO 3COM

In what is beginning to look like a game of pass the parcel, specialist SNA connectivity software developer Communications Solutions Inc is on its way to 3Com Corp from Altos Computer Systems, which bought the Sunnyvale company two years ago from Control Data Corp (UX No 87). CDC in turn acquired it when it bought most of the assets of VisiCorp, in 1984. Until VisiCorp acquired it in 1983, it had been privately-held and independent. Altos says that 3Com is better able to exploit the strengths of the company and 3Com wants Communications Solutions because it sees IBM-driven, peer-to-peer connectivity as the local area networking wave of the immediate future. Communications Solutions' key product is the Maxess SNA Gateway. The 55-employee firm, being acquired for an undisclosed sum in cash, will become part of 3Com's Enterprise Systems - formerly Bridge Communications Inc.

SODIMA DOES FIRST FRENCH RISC - FOR SYMBOLIC PROCESSING

The first French RISC microprocessor, which is designed specifically for use as an artificial intelligence co-processor, has been developed by a five-year-old 20-employee Cachan, Paris-based company called Sodima SA, reports Electronique Actualites. The paper also claims that the part, called Kim, is the third artificial intelligence co-processor after Tex as Instruments' MicroExplorer and Symbolics' Ivory chips - but Matra Datasysteme might contest that view, putting forward its Drake co-processor (CI No 857). Kim is a 32-bit RISC chip, rated at 10 MIPS when clocked at 10MHz, but the best parts from the trial production runs have been clocked at up to 20MHz, when they are estimated to accelerate symbolic processing up to 20-fold over standard chips. The 17,000-gate chip is currently manufactured - by NEC Corp - in 1.5 micron CMOS, so there is scope to make it faster by going to 1.2 micron design rules. The part has a mere 32 tagged instructions - that is reduced! - 24 bits with an 8-bit tag, 8,192 windows onto 16 32-bit registers, and 16 interrupt levels. Initially the Kim will be offered only as a board-level product, the KIMIPO10, with the chip installed on a triple Eurocard designed to be used as a co-processor within a Sun Microsystems Unix work station. The board comes with 256Kb of program memory made up of 35nS access static RAMs, plus 256Kb to 4Mb of data memory organised in 64-bit words. Sodima will also offer its proprietary KOS Knowledge based Operating System as an option on the board - for which no price was given - and it is planning to offer Kim as a component later: sampling is set for September 1989, with volume around the end of the year: the 10MHz version will go for the equivalent of \$666, the 20MHz for some \$1,333.

WANG IS PROMISING OPEN SYSTEMS FOR EUROPE "SOON"

Wang Laboratories is expected to extend its Open Systems Interconnect product announcements to Europe next month. Three new Open software packages spanning all seven layers of the model to connect Wang's VS business computers with other vendors' machines were announced in the US last month: an X400 gateway compatible with the Cen and Cenelec profiles to connect Wang's electronic mail to other companies' offerings; and two products under the Wang OSI Services or Wosis (must they?) umbrella. A Wosis core package provides a four layer basic Open Systems stack to transport level, and Wosis Transport and Session Services products provide session layer services and application programme interfaces. The products will be shipped in January 1989. Up to now, Wang has offered only support for the bottom two Open Systems levels with a series of 802.3 Ethernet hardware and transport package. Layers six and seven application interfaces are in the plan, but no date has been given.

AT&T READY TO PAY TOP DOLLAR TO HIRE WATCHDOG TO GUARD ITS INTERESTS AT SUN

We have it on the best authority that there's at least one headhunter stalking Silicon Valley looking for a very senior systems architect to fill a job in operating systems development that'd pay \$100,000 to \$125,000. Now \$80,000 to \$90,000 per is about the going rate, and there's only a few companies that would pay that kind of premium for that kind of job description - and it'd only be natural to guess either Sun or the Open Software Foundation. Our source, however, was able to shake the truth of the matter out of the headhunter. Turns out the searching company is none other than AT&T and the job is to oversee its co-development of Unix System V.4 with Sun and to protect AT&T's best interests. The odd thing is - or so our source avers - AT&T can't get anybody from inside the company to take the job and is being forced to recruit from outside. Which implies of course that it's not the price of real estate in Menlo Park that's keeping some AT&T hacker from relocating to California. No indeed. But it does fit in rather nicely with the whispers that suggest that AT&T's alliance with Sun isn't all that popular internally - and that the heat generated by the Sun-burned phoneheads may even have something to do with Cassoni's bolt for Ivrea. After all, it is known that back around February, long about the time Cassoni's uncompromising posture on Sun was forcing diehards in the Hamilton Group of Unix dissidents to align themselves with the more formidable IBM- and DEC-backed Open Systems Foundation, the boys at Bell Labs - in a direct attack on Sun - put out an Request For Bids for an independent third-party market research company to do an alleged \$100,000 comparison of Sun's chip versus the Intergraph Clipper, the MIPS RISC chip and AT&T's own Crisp Risc chip. Reports have it that Sun came in last - a somewhat uncomfortable place to be if you've bet the fortunes of one of America's biggest companies so heavily on it. - Maureen O'Gara.

EX-BORLAND TEAM HAS HIGH SPEED MODULA-2 C AND ADA TO COME

Mountain View, California-based Jensen and Partners International was formed around a nucleus of Niels Jensen and his programming team from the Sidekick company Borland International. Formed in 1987, the company set to work on a series of optimised programming languages (Jensen had worked on Turbo Pascal at Borland as well as Sidekick), and the Microbytes newswire reports that the now available JPI Modula-2 compiler - known as TopSpeed Modula-2 in the US - will be followed by the release of a Turbo-C compiler next year. But a longer term project is a high-speed Ada compiler. "Everyone says it can't be done," Jensen told Microbytes "We believe it can." The main problem is the size of Ada, which originated from committee sessions at the US Department of Defense, and any compiler purporting to be Ada must be verified by the DoD to work for the whole language. "You have to have a high-speed compiler producing code that runs fast. It's extremely difficult, but that's our aim," Jensen said. The Ada compiler will use the same code-generating back end as the Modula-2 and C compilers. No release date was specified for the Ada work. Meanwhile TopSpeed Modula-2 is available for under \$100, and includes a configurable window-based interface, and also includes source code for the libraries. In September, with support for dynamic overlays (and still more source code), and in September the company will release VID, a window-based debugger for around \$60.

IBM "CONCERNED" ABOUT SPARC, BUT LEAVES MOST RISC VENDORS IN THE DARK

IBM has confirmed that it has approached "some companies" about their use of IBM patents in products that use RISC techniques - and according to an article in the San Francisco Examiner last week one of those companies is Sun Microsystems. Sun has reportedly received a letter from IBM "expressing concern" that Sun and others may have infringed IBM's RISC patents for RISC processors. According to Sun, its SPARC (Scalable Processor Architecture) chip is based completely on its own research. Sun looks like a prime target for IBM because as well as being a designer of the SPARC, it is in alliance with AT&T against which IBM has promoted the Open Software Foundation. A spokesman for Pyramid Technology claimed that it had not received anything from IBM concerning RISC, but like Sun, claimed that its RISC technology was based on proprietary research not connected with IBM's RISC developments. Motorola, now pushing its new 88000 family of RISC microprocessors for all its worth told Associated Press "All we know is essentially what we've read". And Advanced Micro Devices Inc with the 29000 RISC chip said "we have not been contacted by them, so we're kind of in the dark as to what might be going on". It was "pleased by reports that IBM (its biggest customer) does not plan to try to shut down other companies using RISC". IBM research in the 1970s resulted what is generally thought to be the first RISC processor in 1975. This later led onto its implementation in IBM's unreleased 801 minicomputer of 1979, which in turn led to the 6150 (RT) PC, which uses the ROMP ROMP (Research/Office products division Microprocessor). However, some have cited Seymour Cray's 6000 processor line for Control Data as an early RISC chip, thought to be the first example of a "load and store" architecture.

ALTOS EXTENDS JAPANESE PRESENCE

Altos Computer Systems has announced new distribution and service agreements with Kobelco Systems Co and Nippon Techno Services in a bid to increase its presence in the Japanese marketplace. The deal with Kobelco Systems Co Ltd of Kobe was valued at more than \$1 million, and gives the company marketing rights for Altos systems in Japan over the next two years. Nippon Techno Services of Tokyo will provide the third party service and warranty support. Altos is currently working on a Kanji version of Unix, which is near to completion according to Altos President and CEO David Zacharias, and also sells its 68020-based Altos 3068 systems running Pick in Japan through Tau Engineering. Kobelco will sell the full range of Altos kit, including networked Unix-based systems.

NIXDORF LAUNCHES "OSF" DISTRIBUTED DATABASE

Nixdorf Computer has now officially launched the product that has been widely tipped as the company's main software offering the Open Software Foundation, of which it was a founder member. The product, named DDB/4 is Nixdorf's own development of a distributed relational database for its Unix-based Targon range, and includes an SQL-based fourth generation language with full data definition, data manipulation, and query facilities. Nixdorf says the product supports referential integrity, allowing database amendments to be applied to logically related data with user-specifiable "meta-rules". The user interface has been designed to provide a central view of the database regardless of where data is stored on the network, and the DDB/4 transaction mechanism allows amendments that are valid throughout the network to be made in full, with copies within the network always at the same update status. Information is presented to the user in the form of tables, which provide the basis for descriptive query languages: this allows a user to specify what information is needed rather than how it should be found in the database, according to Nixdorf. The company announced at the same time an open ended agreement with Oracle UK Ltd, also for the Targon range.

JAPANESE COMPANIES BECOME "FRIENDS"

Thirteen Japanese companies have joined the "Friend 21 Project", sponsored by Japan's Ministry of International Trade and Industry, to produce an easy-to-use computer. The \$96 million project aims to result in a system that will respond to voice input, process analog information, and handle and retrieve so-called fuzzy or unclear, ill-defined data. The thirteen participants include Fujitsu, IBM Japan, Hitachi, Matsushita, NEC, Oki Electric Industry, Sony and Toshiba.

FIRST COBOL/2 PRODUCTS FOR UNIX EMERGE FROM MICRO FOCUS

Despite the 4GL camp, unfashionable COBOL still has a huge following, and so the gradual emergence of Micro Focus COBOL/2 for Unix-based systems is seen as an important move by many business users. Bob Lowe from Micro Focus said that work on the new range had been targeted towards making the products "more Unix-like - this is not just the DOS product ported across". COBOL/2 has added compatibility with the many different dialects of COBOL, including RM COBOL, said Lowe. Initially, Micro Focus is concentrating on OEM customers, the first being Texas Instruments and AT&T for the 3B range. And at the recent European Unix User Show last month, Convergent Technologies distributor TIS were demonstrating the compiler. But according to Lowe, the lack of a binary standard in the Motorola camp meant that separate ports would have to be carried out for each system. In contrast he said, Micro Focus would be launching a packaged product for 80386-based Unix systems within the next few weeks - first will be Unix, followed by a Xenix version and later on a version for the new Unix/Xenix merge. Micro Focus recently signed a development agreement with Index Technology to develop software links between Cobol/2 workbench and the IT Excellerator product, offering a development environment from initial systems analysis through to final testing. The company is also looking to RISC processors: it is currently developing a version for Sun's SPARC processor, and is expected to announce support for a further Risc processor in the near future. Industry sources suggested that the chip was from MIPS Computer Systems, which would market the product through its Synthesis Software subsidiary.

WOLLONGONG UPGRADES EUNICE

DEC's VAX VMS customers, worried by the recent Open Software Foundation announcement, are amongst those customers targeted for the newly upgraded Eunice operating system from the Wollongong Group of Palo Alto, California. Eunice is based on the Berkeley 4.3 version of Unix, and allows Unix applications to run as tasks under VMS, as well as supporting VAX clusters. Wollongong says that the product is "a good interim strategy" for DEC VMS customers thinking about Unix. The company says it will be upgrading Eunice to conform with the Posix standard. Cost for a four user DEC MicroVAX is \$5,000.

HP TAKES UNIVERSE

VMark Software Inc is currently porting its VMark Pick-under-Unix database management system to run on Hewlett-Packard's HP9000 Series 800 line under HP-UX. And VMark has also announced a port to Interactive Systems Corp's 386/ix version of Unix for the Intel 80386 processor, available immediately. The HP port should be available in the third quarter of 1988.

APRICOT PREPARES 386SX, 25MHZ BOXES AS 33MHZ 80386

AND 80486 MULTIPROCESSOR LOOMS

Apricot Computers Plc is expected to tell its dealers this week about a new generation of 80386 machines it has in the for launch within a few weeks - and the new family is expected to include models based on the 16-bit bus 80386SX and on the 25MHz version of the full 32-bit part. Samples of Intel's next generation 80486, expected to include on-chip cache memory and to be inter alia optimised for artificial intelligence applications, are also believed to be doing the rounds now, and word is that Apricot may preview a multiprocessor machine based on the new chip at the Which Computer? Show next January. The 80486 is said to be much more amenable to multiprocessor configurations than the 386, but it is not clear whether the machine in Apricot's future will be all its own work, will be a joint development with its existing supplier of top-end machines, Sequent Computer, or will be another straight Sequent box. And while designers wait impatiently for the 80486, Intel is thought to be set with a 33MHz version of the 80386, the better performance being achieved by moving the design to one micron CHMOS from the 1.5 micron presently used.

... AS APRICOT, KALAMAZOO STRIKE £6m PRODUCTS AGREEMENT

Birmingham's two longest-established computer companies, Apricot Computers Plc and Kalamazoo Plc this week announced a major product exchange change agreement. To start with, Kalamazoo is to market the full Apricot range of microcomputers under an agreement worth at least £5.5m over two years. It will be free to put its own name on all machines apart from Apricot's Sequent Computer -sourced VX9300. At the same time, Apricot will retain Kalamazoo for custom systems software, for maintenance, and for training and printing services. Kalamazoo will become Apricot's preferred systems house and Apricot will evaluate Kalamazoo applications for possible inclusion in its software portfolio. Not surprisingly, given its location, Kalamazoo does a substantial part of its business with the motor industry, and the two will look at the possibility of joint ventures where the needs of Kalamazoo's vertical market clients can be met by Apricot systems. The agreement, which should clearly benefit both companies, scarcely caused a stir in a rather dismal market, where at the 3.30 close, Apricot was actually down a penny at 115 pence; Kalamazoo was the same sum to the good at 53 pence.

...AND ANNOUNCES C-DOS FOR THE VX 1000

In a separate announcement, Apricot has made the Concurrent-DOS operating system available on its XEN-i desktop and floorstanding machines, and departmental VX 1000 systems: the port was carried out by Systems Axis.

HYDRO-SEEK BECOMES ACCEL8 AS IT DROPS

WATER DIVINING FOR RISC, UNIX

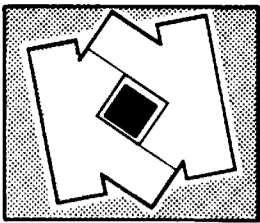
Hydro-Seek Inc, Denver, Colorado is getting out of the water divining business and into Unix. The company will achieve this by merging the company with its wholly-owned Accel8 Technology Corp subsidiary, turning the year-old business into a publicly-held company, assuming the new name. The company has also raised \$330,000 by the sale of 3m shares of restricted stock at 10 cents a time, and 3m warrants at 1 cent each, exercisable at 17 cents per share in 12 months or less, to Solar Satellite Communication Inc, another Colorado-based public company. Accel8 Technology is based in Broomfield, Colorado, where it develops and distributes proprietary software products which are claimed to bring the upgraded power and far lower cost of Reduced Instruction Set Computing to engineering and scientific users without disruption of their existing computing environment via the Accel8 12M minisupercomputer, which runs under Unix as a back-end to a DEC VAX under VMS. Hydro-Seek was formed in 1982 to acquire, develop and dispose of water rights but in 1986 it began to explore additional business opportunities, and in October last year formed Accel8 as a subsidiary using \$165,000 in working capital to develop a product prototype.

STAR COMPUTER BUYS 51% OF SUMMIT GROUP

Star Computer Group Plc in the UK has acquired 51% of Summit Computers Ltd and Summit Computer Maintenance Ltd, and reports that the two businesses have already joined the Pinnacle Computers and Convergent Solutions units at Star's Venture Park in Watford, Hertfordshire. Summit specialises in two vertical markets: conference booking systems, which run under Unix on the Convergent kit, and two information retrieval packages used in litigation support. Summit Maintenance specialises in third party support of Data General minicomputers. Star paid (£160,000 up-front and will pay a maximum of £150,000 more over the next three years according to performance; the two businesses had turnover of £355,000 last year.

McDONNELL LOOKS FOR 100 MIPS FROM MD-484 GaAs RISC

"The world's fastest 32-bit RISC" has been demonstrated by McDonnell Douglas Astronautics Co's Gallium Arsenide microelectronics laboratory in Huntington Beach, California. The part, called the MD-484, has been clocked at almost 60MHz and produces an output every 17nS, the company says. Developed under a US Defense Advanced Research Projects Agency contract for use in Strategic Defense Initiative studies, the chip is based on a RISC design originated with Agency funding at Stanford University in the early 1980s. It consists of 21,606 transistors using the enhancement mode junction field effect transistor technology pioneered by McDonnell. It has 17 general purpose registers and a full 32-bit arithmetic logic unit; a barrel shifter is included for specialised operations. McDonnell now plans to develop - by 1990 - support chips to enable it to build a single-board computer around the chip, and believes that the thing will process a typical job mix at over 100 MIPS.



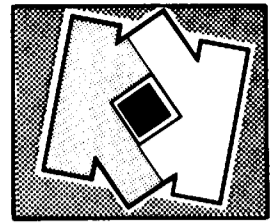
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All versions of the VBSun Sparc RISC microprocessor are made in the US, and C Itoh & Co says it is to import 200 to 300 a month into Japan.

- 0 -

Apollo Computer Inc has workstation assembly contracts with the Shanghai Foreign Trade Corp, and with Fujian Computer Factory and its import-export arm: both will assemble Apollo DN3000 workstations from kits.

- 0 -

Now that it is a wholly-owned subsidiary of Acer Inc, Taiwan, San Jose Unix-based multi-user user, multiprocessor systems builder Counterpoint Computer has changed its name - and come up with a compromise to protect all the good work done to promote the Counterpoint name by calling itself Acer Counterpoint Inc: founder Pauline Lo Alker, who is staying on board, says the company has a string of announcements pencilled in for the next few months, including a new product line, key staff additions, new strategic alliances and enhanced product development capabilities.

- 0 -

Alliant Computer Systems Corp has a three-year distribution agreement with Syscon Computer Engineering Co, giving the company exclusive rights to market the FX series of minisupercomputers in its home country of Taiwan: the agreement is worth about \$7m over the period.

- 0 -

ICL has won a £5m, two year contract to supply Newark, Nottinghamshire based ball-bearing manufacturer RHP Bearing with a company-wide information system: the deal includes a range of computer aided engineering packages including C-Plan, GNC, DIAD and DOMA which will run on Sun graphics workstations; for factory control ICL will develop a work-in-progress tracking system using the Ingres relational database running on Clan hardware under the Unix operating system; as well as factory operations ICL is upgrading administrative and commercial systems and will replace existing ICL 2900 Series 39 mainframes - a Level 50 for operational work and a level 25 for development - together with Clan systems running Officepower software under Unix.

Colin Southgate, chief executive of Thorn EMI Plc, revealed to last week's end of year results meeting that the company's former "drunken uncle" Inmos International has been operating profitably since the beginning of the year. Following the rationalisation of production, monthly turnover is now running at £5.5m, generating a profit of £1.5m for the first quarter of calendar 1988. Though Thorn remains defiant, predicting that Inmos will make money this year, Wall Street investment bank Goldman Sachs is still on the look-out for a prospective partner for the loss making subsidiary, so as to enable Thorn to reduce its stake to 25% or 30%.

- 0 -

Olivetti and DEC yesterday announced a technology exchange agreement ensuring the integration of Olivetti personal computers into the DEC networking environment; from now on Olivetti micros will be certified by DEC as compatible with its Network Applications Support.

- 0 -

NCR Ltd has signed a reseller agreement with UK Pick systems specialists Logical Choice (Computer Services) Ltd; Logical distributes the UniVerse database management system from Natick, Massachusetts-based VMark Software Inc which allows Pick-based software to run on NCR's Tower range of Unix multi-user micros, UniVerse also supports Logical's Creator fourth generation development software which will allow Tower users to develop their own Pick-based applications; under the agreement Logical Choice will receive discounts on Tower systems, financial assistance for product launches and free training and direct sales and technical support.

- 0 -

Cray Research Inc has a contract to deliver a Cray Y-MP scientific supercomputer worth \$22m to Ohio State University.

- 0 -

The enthusiasm in Japan for the Inmos International Transputer is undiminished by the fact that Kobe Steel Co has introduced a 10 MIPS Transputer coprocessor board for the NEC 9801 and Fujitsu FMR series of personal computers, and the IBM AT. Kobe Steel also sells hard disks and local area network systems, and it hopes that sales of the Transputer board will lead to additional demand for the US hard disk subsystems it sells, which come in versions with capacities of 3.5Gb.

Optim Plc was preparing to come to the Unlisted Securities Market as we went to press via a placing to be handled by Continental Securities, valuing the firm at over £7m.

- 0 -

National Semiconductor plans to buy back 4.1m shares and 4.1m warrants granted to Schlumberger Ltd as part of the payment for Fairchild Semiconductor: NatSemi will also settle in cash the balance of the Fairchild purchase price which it had guaranteed, and will withdraw its current shelf registration.

- 0 -

Gould Inc has completed the sale of the Gould Industrial Systems Group to AEG AG, but the \$270m proceeds are being held in escrow by Gould until the approvals come through: another \$20m or so is due to Gould when everything is settled, and Gould expects to use the cash to buy in up to 20% of its own shares;

- 0 -

Syntactics Corp, Santa Clara, California, has signed its first European distribution agreement with Altos distributors MBS Microtex, which gives MBS exclusive rights to distribute Syntactics Crystal Document Management System and LaserPak software on Altos kit in the UK, and non-exclusive rights to distribute the software throughout Europe.

- 0 -

Highlight amongst the stands at the recent European Unix User Show recently was that of First Software, which conducted its business from the bowels of a giant leather briefcase, propped open by a giant ruler: but you gasp when you learn that IBM reputedly spent a red-hot \$5 million on its stand at the Telecom '87 show in Geneva last October - well it is only every four years - but the price doesn't sound quite so outrageous when you hear that the company was able, so we hear from a subscriber, to sell the thing on to an Austrian disco operator when the show ended.

- 0 -

If that sounds unlikely, what about the tale doing the rounds about the AT&T stand? Seems the company spent a faintly ridiculous \$4.5m on the thing, but was able to find another wearer prepared to take it off its hands, and it is now said to be doing service as a provincial railway station somewhere in Austria!

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Number 188

DEC LOOKS TO MIPS AS IT ABANDONS HOME GROWN RISC

DEC may be negotiating with RISC vendor MIPS Computer Systems to provide it with high performance RISC minicomputers, following the abandonment of its own RISC development, code-named PRISM, last week. DEC's project, to develop a 64-bit RISC processor for products due out in mid 1989, follows a similar withdrawal from plans to develop a medium to high end VAX processor, codenamed Argonaut. Electronics News reports that DEC is particularly interested in the recently launched MIPS 2000 minicomputer (UX No 187), said to already offer comparable performance to DEC's own projected systems. MIPS is also said to be currently working on a high performance workstation. Neither company would comment on the story.

APOLLO CLAIMS FIRST WITH 33MHz 68030 IN SERIES 4500

Yesterday marked the world-wide launch of two new additions to Chelmsford, Massachusetts-based Apollo Computer's workstation family. Called the Series 4500 and the Series 3500, plugging the mid-range gap between the company's existing 4 MIPS 4000, and the top-end Prism Series, introduced by Apollo earlier this year. Both are based around the Motorola 68030 chip - rendering Apollo's proprietary memory management unit obsolete - with the 68882 maths chip, support Ethernet and Token Ring, and run under Apollo's "distributed Unix" Domain/OS, offering any combination of the Unix System V release 3, Berkeley Unix 4.3 and Apollo's own Aegis. Billed as the cheapest 4 MIPS station on the market, the Series 3500 features 25MHz CPU, 68882, 32Mb main memory, and 696Mb of disk. Prices depend upon graphics display configuration, and range from £6,600 for a mono version through to £8,330 for the two-dimensional colour model; all five models are available immediately. The company reserved the bulk of its enthusiasm for the series 4500, arguing that it represents the first workstation on the market to offer a 33MHz version of the 68030 chip - although it may well not be by the time it becomes available in September. Rated at 7 MIPS, the product boasts no wait state operation and 64Kb of physical cache, integrated to 32Mb of main memory. Apollo also argues that the series 4500 is the first desktop system to offer interleaved main memory, and a doubling of main memory capacity. The product also comes with dedicated graphics processing and floating point accelerator options, with the latter designed to up processing speeds by an estimated 300%. The Series 4500 will be available in three configurations, including the top-end eight-plane two-dimensional colour display, with mono prices starting at £15,800. The new offerings are fully compatible with its original Series 3000 and 4000 workstations, but will be making "tempting" upgrade kits for both new models available to existing customers.

... BUT WARNS OF SUBSTANTIAL SECOND QUARTER LOSS AFTER SNAGS IN GERMANY

Apollo Computer Inc, Chelmsford, Massachusetts expects to report a loss for the second quarter of between \$5m and \$8m against a profit this time last year of \$14m. The company says that the anticipated loss is down to disappointing sales and to problems with its West German subsidiary. It expects sales, at around \$145m for the quarter, to be about 10% ahead of the year ago figure. The company still looks for 1988 to be a good year overall, and that its annual results will reflect a high level of demand for its new 68030-based systems. But "given that the third quarter is seasonally weak overseas, at this point we don't expect to see full system resumption until early fall," the company said. Wall Street didn't take the news at all kindly, and sliced \$3.625 off the share price at \$11.625.

NEXT "DOING POSTSCRIPT USER INTERFACE TO AIX FOR IBM"

IBM has reportedly commissioned Next Inc, to create a user interface for IBM's AIX implementation of Unix, according to Computerwoche. The West German weekly reports that Next, run by ex-Apple founder Steve Jobs, began work on the task in April, and that a key feature of the implementation will be use of Adobe Systems' Display PostScript screen description language, which has been tipped as the basis for the graphics on the long-awaited Next workstation. The aim of the effort is presumably to provide IBM's AIX with an alternative to the Open Look user interface proposed for Unix by AT&T Co and Sun Microsystems Inc. Such a product could also be a target for the Open Software Foundation's alternative Unix environment, based around IBM's AIX kernel, although Hewlett Packard's New Wave interface has been cited as the most likely choice. Adobe has now joined the OSF: its share prices jumped from \$2.75 to \$43.50 when the story first surfaced in InfoWorld. And in January, DEC revealed that it had licensed the Adobe product as a component in its own X-Window based interface. A spokeswoman for Next Inc dismissed the story as "speculation".

FUJITSU JOINS X/OPEN

X/Open has announced its first Japanese member: the giant Fujitsu Limited, Japan's largest computer manufacturer. And in a related announcement, X/Open said it would be opening a Japanese office in Tokyo later this year. The move follows a visit to Japan by X/Open Chairman Geoff Morris earlier this year. X/Open membership now totals fourteen companies, including nine of the largest worldwide computer manufacturers. Fujitsu will assist in establishing the Japanese X/Open office, which will attempt to increase support in Japan for X/Open's Common Applications Standard. A priority will be the implementation of the CAE in Kanji. In the UK, X/Open is establishing its international headquarters in Reading, Berkshire on July 18th.

REAL WORLD EXPERTISE - AI and UNIX

Researchers at AT&T's Bell Labs have been looking at the integration of rule-based languages designed for artificial intelligence into a Unix environment. Geoff Conrad reports.

For years artificial intelligence researchers have claimed that the future lies in non-procedural languages such as Lisp, controlled by strange entities such as inference engines. Their greatest success has been in developing rule-based tools for building expert systems. But they have remained difficult to use, and integrating the expert systems into the real world has been even harder.

AI researchers at AT&T's Bell Labs realised that the problems the developing systems faced were the same experienced by more mainstream projects: communication with other systems, user interfaces, systems maintenance and administration including backup and crash recovery. They found themselves relying more and more on Unix tools. However, Lisp and the expert system tools and programming language interacted awkwardly with the Unix system, so they re-wrote most of them in the C language, with the interpreter (or inference engine) eventually producing C code. The interpreter was loaded as a C library, enabling it to be called by a C program or a C function. This led to the finished expert systems being compiled as part of larger C programs, and developers including bits of expert systems in their C programs.

Database routines

With the entire expert system being developed and run from within the Unix environment, the researchers went on to develop a collection of routines to allow the expert system to interact with the Informix relational database system and AT&T databases.

Rule-based expert systems are made up of three parts: a database or working memory; a set of rules; and the interpreter or inference mechanism. The knowledge engineer tries to ~~encapsulate the knowledge of an expert into the first two parts, with the IF...THEN...rules working on and modifying~~ the information in the working memory. The interpreter executes or fires a rule by executing the THEN clause when the IF clause matches an element in the working memory. The rules are in no particular order as they are only fired when they match the working memory. If more than one rule matches, a process called conflict resolution gives priority to one of the rules.

The form of rule-based languages makes the programs easy to modify and add to if the conditions change or if the expert remembers another bit of information. However, it is difficult to perform operations such as recursion with them, and debugging can be very difficult as the working memory changes as each rule is fired.

The AT&T workers started out using OPS4, a popular rule-based language developed at Carnegie-Mellon University and written in Lisp. Then they added the C language and the Unix system's Awk language, shell programming and other development tools such as an internal database language.

They then rewrote a later version of OPS, OPS5, into the C language, calling it C5 and giving it an interface to the C language to allow a single program both procedural and rule-based capabilities. The C5 interpreter also allows rule-based programs to be debugged (backed up) as well as allowing C functions to be called by the THEN clauses in the rules. The final program can be compiled into a C program allowing the programmer to use all the powerful Unix tools. The routines that allow the expert system to interact with a database called OD permit developers to load an entire database, or part of it, into the working memory with a single command. The developer can also update the database from a C5 rule.

Portable and Lisp

AT&T have also developed a version of Common Lisp (the most widely accepted dialect of Lisp) called Portable Lisp or Plisp. The kernel of the Plisp interpreter and some functions were written in C, while the Plisp compiler was written in Common Lisp to produce C code that is compiled by the standard C compiler. The version is less than half the size of a Common Lisp system and runs much faster. It will run Common Lisp programs, which allows developers to produce their programs on powerful AI workstations, then transfer them to a Unix machine to run in the real world.

It also allows Unix-based developers to use Lisp for quick prototyping of applications requiring artificial intelligence techniques, and to use Lisp with C, while still retaining the power and familiarity of Unix.

MIPS' SYNTHESIS TO DO MICRO FOCUS COBOL FOR MIPS RISC

After the Newbury company's long spell in the doldrums, Micro Focus Plc is really beginning to bubble again, and following hard on the heels of last week's agreement with Microsoft, which has dumped its own Cobol for Micro Focus' Cobol/2, the company has won a contract worth an initial \$500,000 from MIPS Computer's newly formed software acquisition company Synthesis Software Solutions Inc of Sunnyvale, California. Synthesis wants to distribute a version of Micro Focus Cobol/2 - which is to the ANSI X3.23- 1985 High Level standard - for machines based on the MIPS Computer Inc RISC chip. It will use the UK company's proprietary Template Native Code Generator to develop a code generator and run-time system tailored for the MIPS CPU under Unix System V. It will enable Cobol programs to compile right down to machine code for maximum execution speed. The new implementation should be ready first quarter 1989.

MICROSOFT DUMPS ITS OWN COBOL, FOLLOWS IBM TO MICRO FOCUS

Last year's decision by IBM to drop Microsoft Corp's Cobol compiler in favour of a Micro Focus Plc version, seems to have prompted Microsoft itself into following suit. According to details of the "strategic" marketing alliance released by Micro Focus yesterday, the Newbury-based company has now agreed to license the new Version 1.1 of its Cobol/2 compiler for OS/2 and MS-DOS machines to Microsoft, which will distribute the product as the Microsoft Cobol Optimising Compiler version 3.0, in place of its proprietary Cobol offering. Micro Focus bases its "true 1988 status" claims for the product - and Microsoft's decision to adopt it - on Cobol/2's inbuilt compliance with the ANSI '85 Cobol standard, the X/Open standard, and IBM's own Systems Application Architecture standard, together with the support it provides for a range of mini, micro and IBM mainframe dialects. Royalty payments aside, the deal will also provide Micro Focus with an entrée to new corporate data-processing departments and a significantly expanded customer base, which the company also plans to target with its range of add-on software development tools such as the VS Cobol Workbench development environment. For its part, Microsoft believes that the introduction of the Cobol 3.0 product will enable it to provide across-the-range Cobol technology, and cash in on the move away from mainframes to MS-DOS micros for the development of applications. Under terms of the alliance, the pair have also agreed to regular technology exchanges, and plan short-term to ensure compatibility with Presentation Manager, LAN Manager and SQL Server.

"SIGNIFICANT" VENTURE FUNDING FOR ON TECHNOLOGY

On Technology Inc, the Cambridge, Massachusetts company formed by Lotus Development Corp founder Mitch Kapor to create a new class of computer software that mimics more exactly the way people work, has landed significant venture capital backers in the shape of the Cole Gilburne Fund of Berkeley, California, and Kleiner Perkins Caufield & Byers, each getting a representative onto the board. But anyone wanting to know how much money has been invested is out of luck - no-one is prepared to say.

On Technology was established in November to foster the creation of a new class of software designed to be more compatible with the way people actually work and think, both as individuals and in groups. It is designing a new development platform that will integrate a set of powerful, flexible building blocks such as an object-oriented database for structuring information, a user interface management system, a knowledge representation component, and high level languages for customising and specialising programs. The platform is intended to be used by On and other application developers as the foundation for software designed to run on the computers of the 1990s. On's products are being developed to take advantage of new computer systems such as the Macintosh II and Unix computers. Groupware, defined as applications that allow multiple people to share and exchange information in a natural way, is one of the key focuses of On. The Gilburne Fund is the one that was formed in January 1986 by David Cole, who surprised the world by quitting as chairman and chief executive of Ashton-Tate Corp to become president of Ziff, and surprised it again by leaving to form the fund.

YALE PERFECTS SYSTEM TO RUN MANY DEC VAXes IN PARALLEL

A parallelising programming language that enables tasks to be distributed over multiple DEC VAX computers to simulate a parallel processing supercomputer will soon be available from Scientific Computing Associates, New Haven, Connecticut. The language, called Linda, was developed by researchers working at Yale University in New Haven, in partnership with engineers from the Sandia National Laboratory. Use of Linda is claimed to have enabled a scientist at the Sandia laboratory to create a complex simulation of a rocket exhaust plume using a network of 14 VAX computers at two locations more than 1,000 miles apart, and the simulation took 143 minutes to produce, half the time it took on the lab's ageing Cray-1 supercomputer. The developers are promoting the idea that where multiple similar machines, such as VAXes, are installed in different departments of an organisation, they should be kept busy for a much higher proportion of the time by harnessing their spare moments to participate in co-operative parallel processing tasks. United Press International reports that researchers have begun developing applications for the networked VAXes, including a monitoring system for patients in cardiac intensive care units and faster searches through huge computer databases. As it was developed with government funding, Linda is not copyrightable, and is at least theoretically in the public domain to any US company.

NO GROWTH IN PROFITS AT ALL ON THE CARDS AT NIXDORF THIS YEAR

Is yet another erstwhile high-flyer about to bite the dust? Nixdorf Computer AG's problems do not yet look nearly as bad as those that have plunged Norsk Data A/S into losses after years of high double digit profits growth, but the Paderborner acknowledges that its customary growth in profits of 20% or more will not be repeated this year, and that there may well be no growth at all in profits. Year after year, Nixdorf has highlighted the rising level of employment in the company to underline the fact that the computer industry could be a solid job creator and not the job destroyer that some lobbies assume it to be, but after taking on 3,864 people last year to bring its total to 29,440, the company has imposed a hiring freeze this year. Main problem, according to the Wall Street Journal, seems to be saturation in key West German markets, notably automatic teller machines for banks, and among the small and medium-sized businesses that are Nixdorf's bread and butter, plus a fall-off in investment in new telecommunications equipment. At the same time, US competitors are riding high on the back of the fadeaway dollar, and costs are rising, not least because of the remorseless shortage and hence high prices of memory chips. Nixdorf's costs have typically risen by 15% to 18% a year, and have been comfortably outpaced by sales growth, but turnover is likely to rise no more than 13% this year, which is why the company is instituting other cost cutting measures in addition to the hiring freeze. And some minor businesses may close.

ON TO 1992: ICL AIMS TO BUY 70% OF ITS PARTS IN EUROPE

STC Plc's ICL unit hopes to procure 70% of its peripherals and components from within the European Community by the time the Single Market opens for business in 1992 - but the target is a steep one: at present, only 30% of the company's £300m annual procurement of chips and OEM peripherals is done within Europe. Back in 1980, most of the company's spending was done in the US, but following its still growing links with Fujitsu Ltd, a large proportion, including point-of-sale terminals as well as central processing units for its mainframes, comes from Japan. The benefits of buying in Europe will include the absence of tariff or customs barriers, proximity, leading to shorter lead times, and the spin-off benefit of being seen to support locally-based manufacturers and thus being regarded as a "good European".

OPTIM £2.4m PLACING FOR UNLISTED SECURITIES MARKET

VALUES THE COMPANY AT £7.1m

Optim Group Plc, the Letchworth, Hertfordshire, UK based turnkey systems house is looking to raise £2.4m of new money net of expenses through a placing on the Unlisted Securities Market. The company is placing 4.0m ordinary 10p shares - 34.0% of the enlarged equity - at 60 pence, valuing the company at £7.1m. Optim employs over 200 people and provides software for a number of vertical markets including hotels and leisure, retailing, manufacturing process control, office automation and field service management. Following losses of £1.8m and £197,000 in 1984 and 1985 respectively, the company showed profits of £301,000 and £342,000 in the last two years - on turnover of £6.2m and £7.9m respectively - and forecasts profits of £500,000 for the year to October 31, 1988 which would put it on a prospective price-earnings ratio of 11.7. Optim Computers Ltd came into being via a management buyout of Monotype Communications back in 1982 and originally marketed the Z80 microcomputers from Ontel. The business was financed by a private syndicate led by Mike Burden, ex-managing director of Singer Business Machines and Nixdorf UK, and John Richards, who was Monotype's general manager. The following year saw a merger between Optim and MCS UK, which had been trading in England since 1976, achieving a turnover of £2.0m in 1982. The new company acquired the maintenance arm of Digico Ltd later in the same year. In 1984 the group ran into severe trading problems, mainly as a result of a decision to enter the general purpose computer market and three main board directors plus three directors of subsidiaries resigned that Autumn. The new management team made a decision to redirect the group back into its traditional service-orientated markets, a decision that has been met with some success. MCS Inc's Dutch subsidiary, Optim BV, was acquired in 1985; Butel and Lange Computer GmbH's maintenance business were acquired in 1987 and in February of this year the company acquired an ICL trader, QCL. The European head-office is based in Amsterdam and there are three further offices in Germany. Approximately 50% of turnover is derived from vertical markets and 36% from engineering and software support. In the current year approximately 85% of business is forecast to be from the UK and 15% from the rest of Western Europe. The company says that it plans to use the new money to help reduce its debt, and in due course to effect still further acquisitions. The placing is the first in London to be handled by Canada's Continental Securities.

ADVANCED MICRO DEVICES HAS DATABASE CO-PROCESSOR CHIP

A content addressable data manager microprocessor that implements in hardware many of the search functions of a database management system has been introduced by Advanced Micro Devices Inc, Sunnyvale, California. Called the Am95C85 Content Addressable Data Manager co-processor, it is designed to offload from the main processor tasks such as sorting, searching, inserting and deleting records. The part, in 1.6 micron CMOS, includes 1Kb of random access memory on-chip, and a control unit which accesses the part's memory with a single command, without the need to provide physical addresses. Advanced Micro claims that the chip can do content-addressable searches for 8-byte fields in 10 microseconds, and up to 16 of the parts can be linked together where big databases are to be searched. The company sees applications for the part in networking and communications, file servers and high-speed graphics systems. The 16MHz version is \$66.50 for 100-up, the 12MHz costs \$49.20, and the Am95C85 is available now in production quantities.

INMOS HAS HIGH HOPES FOR TRANSPUTER IN MILITARY MARKET

FOLLOWING DEAL ON ALSYS ADA

Henley, Oxford based Alsys Ltd and Thorn EMI Plc's Inmos International are to supply validated Ada compilers for the Inmos Transputer as Inmos seeks to expand further into the military marketplace. There are currently 60 Transputer-based products on the market, another 250 are being developed and 700 are under evaluation. Inmos has been successful in selling into the graphics, control and telecommunications markets, and although defence accounts for only a tiny proportion of sales at the moment, Inmos looks for the market will represent 25% of total sales in two years. It also says that Transputers qualified to Military Standard 883C will be available next year. The first, available in the first quarter, will be the military version of the IMS T800, to be followed by military versions of the 32-bit and 16-bit integer Transputers later in the year. Defence applications include embedded avionic control systems, satellite surveillance systems, image recognition, distributed orbital control systems and simulation. The new Ada compilation system for the Transputer is based on the Alsys Root Technology which has been applied to the Intel 80086, Motorola 68000, DEC VAX, HP1000 and IBM 370 and is the outcome of a design study carried out by Alsys, Inmos and Meiko Ltd, Bristol. The first two products, due for delivery in July 1989, will be a cross-compiler to run on DEC VAXes under VMS, and a host compiler running on an IMS T800 Transputer on an MS-DOS co-processor board. In both cases code will be targeted to the range of 16-bit and 32-bit Transputers, including the IMS T800 floating point Transputer. Alsys says development work can begin immediately with its currently available validated compiler which runs on the VAX host. The resulting application software can then be recompiled with the Transputer Ada compiler when it arrives. The Transputer microprocessor has RISC instruction set, on-chip memory and fast point-to-point communications links that can pass data to other Transputers.

STRATUS FORMS PICK DIVISION

There is already an implementation of Pick for Tandem Computers' Non-Stops, and now Stratus Computer Inc is following suit with plans for a Pick implementation integrated with its VOS operating system for the XA2000 Continuous Processing Systems. The Marlboro, Massachusetts company has formed a new division in Laguna Hills, California to do the Pick implementation and to market it through resellers worldwide.

BRUSSELS FORUM - IBM'S LATEST TRY AT GLASNOST

Last week IBM threw caution to the wind and invited some 220 European journalists to its management training centre in La Hulpe, near Brussels in Belgium. The assembled line of business managers included C Michael Armstrong, IBM Senior Vice President and Directeur General Europe; Data Systems Division President James Cannavino; and Personal Systems General Manager Georges Conrades. But despite a promise of "straight talk" from Michael Armstrong, there was a decidedly guarded mood amongst the speakers, and a number of responses in the question and answer session sounded suspiciously like elaborate re-phrasings of "no comment".

IBM WILL ENFORCE "FUNDAMENTAL" 12 RISC PATENTS

The fact that IBM currently holds a portfolio of some 33,000 patents, and issues a new patent application once every 30 minutes is a topical issue at the moment: Personal Systems Manager George Conrades said that IBM was "currently holding twelve patents that are essential to implementations of RISC today, and has applied for another hundred". But he also emphasised that RISC and the technology of the PS/2 range were not the only areas where IBM was looking to protect its patent rights. "We are looking across our entire product line and will be holding a series of discussions with other manufacturers. IBM spends around 10% of its income annually on research and development and engineering, and we want a fair return to the degree that other vendors are taking advantage of that work".

MEMORY DENSITY, PARALLELISM AND SUPERCONDUCTIVITY AT IBM R&D

Just where some of that R&D money (which totals around \$5 billion) is being spent was revealed by the Director of IBM's Research Division, John Armstrong. According to Armstrong, the fast pace of experiments in increasing memory density seen over the past 25 years - which is the root cause of increased price performance - shows no sign of decreasing in the next 25 years, and is actually accelerating. Armstrong predicted single-chip CPUs "operating at several tens of MIPS". IBM is currently working on transistor circuits with the critical parts less than a tenth of a micron, or a few hundred atoms wide, produced with the aid of electron-beam lithography. And he predicted similar growth for the magnetic storage medium, with the labs now working on the storage of 1Gb per square inch in an exploratory project. Parallel processing is another major area of effort. Armstrong revealed that at least a dozen projects were continuing, building various forms of tightly coupled configurations, cache, and message passing etc. Those revealed include the Tokyo TOP1 project, which has eight Intel 80386 processors tightly coupled within a high performance engineering workstation; the EVE engineering verification engine with 220 logic processors and 4 array processors (used in the development of the AS/400); and a prototype massively parallel machine called the RP3, which uses 64 RISC processors for general purpose parallel computing, expandable to up to 512 processors (CI No 966). IBM was also demonstrating a Yttrium based superconductor, by floating it on top of a permanent magnet at the temperature of liquid nitrogen. Since that breakthrough (in January 1987), IBM's research labs in San Jose has claimed the current high temperature record of -148 degrees C by using a ceramic oxide and Thallium, a cheap and well known cooling mechanism.

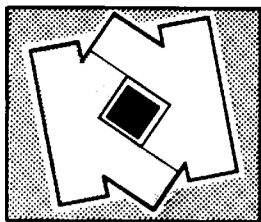
6150 TO TOP INTEL RANGE - WILL SHARE MICRO CHANNEL ARCHITECTURE

Although it was fairly plain that IBM's AIX "family definition" was to take a firm "back seat" to SAA, IBM revealed plans for the future major development of its primary AIX platform, the 6150 workstation. Personal Systems Manager George Conrades said that IBM would in the future position the 6150 as "the answer for workstation processing power beyond the Intel-based range". He also confirmed the long-term rumours that the 6150 would in future share the Micro Channel architecture and I/O subsystems with the PS/2 Series, including common keyboards and screens. C and Fortran languages will be common across AIX and SAA environments. AIX Release 3, the so called "advanced AIX" that is to be the basis of the Open Software Foundations alternative Unix implementation, is due to be released as a product from IBM next July, when it will be offered as an IBM product until the OSF version is completed. Then, according to Application Business Systems Manager Steven Schwartz, IBM will replace its proprietary AIX offerings with the OSF version across its product lines. And Conrades predicted that "in the not too distant future", the 6150 Series would "be grown to a family of systems with the processing power of today's 3090 - but on the desk". And, he added, functions such as telephone, copier and fax facilities would be incorporated into the workstations of the 1990s.

SAA IS "HERE AND NOW";

PLI, ARTIFICIAL INTELLIGENCE TO BE INCLUDED

Obviously upset by reports that claim its Systems Applications Architecture strategy is years away from being any practical use, IBM's VP and General Manager Programming Systems, Earl Wheeler tried hard to convince his audience that key elements of SAA are already proving their use, claiming that thirty customers and software vendors in Europe participating with IBM in SAA implementation programs. Four IBM operating systems, OS/2, OS/400, VM and MVS will be the supporting platforms for SAA, along with standard SAA versions of REXX, Cobol, Fortran, C, CSP and now RPG for the AS/400. Wheeler also revealed that plans for PL/1, and a language and supporting facilities for expert system applications were now underway. IBM will also be introducing the capability for distributed data in SAA, using its relational database SQL interface to provide a "single data image" across an organisation: this will be the basis for distributed services and distributed applications across SAA systems. Wheeler later admitted that real SAA applications were "about a year away", and that the first software products to take advantage of SAA would probably be mainframe oriented software.

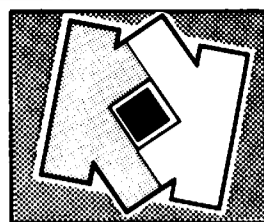


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One of the least surprising revelations at IBM's Glasnost bash in La Hulpe last week was that the Open Systems Interconnection model as well as Systems Network Architecture would be incorporated into Systems Application Architecture: IBM could hardly afford not to, since 100% of public and at least 50% of large private sector business in Europe would be closed to the company without OSI, and it's IBM that wants users to implement SAA, so it can hardly afford not embrace the Open Systems Interconnection model within it - one day and at a price.

And US sources are now concurring with the suggestion that the next mid-life kicker for the IBM 3090 series - the one that has been dubbed the F Model - may come later this month - but they prefer July 26th to the July 21 date suggested over here.

If you have bad news to divulge, what better day to choose than the eve of a major national holiday: Alliant Computer Systems Corp, Littleton, Massachusetts chose the Friday before the July 4th Independence day celebrations in the US to report an operating loss of for its second quarter to June 30th, 1988; the company says that while preliminary results indicate that international revenues exceeded expectations for the quarter, sales in the home market were well below expectations, and in addition the company will have to take a non-recurring charge in the second quarter for acquisition and restructuring costs arising from its takeover of Raster Technology Inc: for the three months to June 1987, Alliant reported operating profit of \$1.15m on \$13.3m sales.

And the Norwegian erstwhile high-flying minimaker Norsk Data A/S, which last year acquired Wordplex Plc here, shocked London, New York and Oslo with warnings of further bad news last week, saying that preliminary indications are that it will report a first half loss of about \$19m against a profit last time of \$27m, and blames tough conditions in its home market, where it has run into an investment strike in the private sector.

Televideo Systems Inc, Sunnyvale California, which owns Microport Systems Inc, has announced a phased restructuring plan to cut its operational overheads by 20% - but carefully avoided mentioning that this would involve the lay-offs of 95 people, nearly 20% of its US compliment of about 500 employees: some products may also be dropped.

Siemens AG has begun sampling its forthcoming 4M-bit memory chip, and hopes to go into volume next year.

Look out for DEC to add enhancements to its on-line transaction processing products next Tuesday.

Cray Research Inc and Control Data's ETA Systems Inc are "disappointed" that the Japanese have not bought more supercomputers since the bilateral accord in which the government agreed to encourage purchase of US systems was signed last year: according to the Commerce department, the three government procurements since the accord have all again gone to Japanese manufacturers NEC Corp and Hitachi Ltd.

That leaves a gap for third parties, such as Batavia, Illinois-based Uniq Digital Services, which says that AT&T has visited and "qualified" Uniq technical resources and ability to provide the support, although Uniq is careful to say that this does not constitute an endorsement: Uniq currently sells Unix System V Release 3 for DEC computers, and its Passage TCP/IP networking software product available in source or binary form.

Mission Technologies Plc, Huntingdon, Cambridgeshire, was showing its 25MHz 80386-based 25386 system at the recent PC User Show at London's Olympia, saying it was compatible with MS-DOS, OS/2, Unix, VP/IX and DOSMerge, Xenix V and Novell Netware software: well known for its high quality audio equipment, Mission entered the Intel-based computer business last year (UX No 143), and has a manufacturing and technology agreement with Anaheim, California-based Advanced Logic Research.

Raindrop Data Systems, based in London's Golden Square, has developed a power supply backup system for Unix, AIX and Xenix users: called Rollback, the product can restore up to 40 users to the exact point they were at prior to a loss of power - the software automatically switches to backup supply when power is lost, warns users that it is about to shut down, and when power is restored it boots itself back up: if power loss is only temporary, the system keeps going, and users are unaware of any problems, says Raindrop, which says it tailor-made the product for IBM's 6150.

AT&T's termination of Unix software support for DEC VAX and PDP computers came into effect at the end of June: it will no longer provide future releases or further development of Unix for DEC hardware.

Scientific Micro Systems, Mountain View, California, has launched a ruggedised 80386-based AT system for the industrial and OEM marketplace: the SMS 3000 Model 40 is said to have been designed to resist high temperatures, the various types of vibration, and electromagnetic interference commonly found on the factory floor, and runs MS-DOS and Unix: a base configuration is priced at £4,100 in the UK.

Apollo Computer has announced its support for Microsoft Corp's OS/2 LAN Manager as an interconnect solution between OS/2 PCs and Apollo workstations: the product will become part of Apollo's Domain networking environment.

Meanwhile, criticisms over the Apollo founded Networking Computing Forum, which now has over 125 members, is beginning to surface: NCS meets only once every six months, and has apparently achieved little since it began back in March 1987.

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IBM LAUNCHES NEW RTs - AND AIMS FOR BUSINESS USERS

IBM hosted an AIX Forum in Washington DC on Tuesday for 250 software developers, and took the opportunity to make its next set of enhancements to the RT PC, now re-named as the RT System. IBM introduced three new models; the desktop Model 130 and floor-standing Model 135 and B35, all with 16Mb of CMOS memory, four times the amount previously offered. The expected integration of the PS/2s micro-channel architecture was not forthcoming, but IBM did introduce faster processors for the range, claimed to increase systems throughput by up to 25%. At the same time, all models were given an enhanced version of the IBM Advanced Floating Point accelerator and 114Mb of disk storage as standard. Up to three of a new 310Mb disk drive can be supported on the larger RTs. Significantly, the company told its audience that it aims to become a leader in AIX solutions not only in the technical, engineering and scientific markets it always targeted before, but also to commercial multi-user customers, a move backed up by the inclusion of the AIX/RT VS COBOL compiler within the announcements. Prices in the US are /423,220 for the 130, \$30,595 for the 135, and \$32,165 for the B35 - no word yet on a launch in Europe. Full details on page five.

AT&T "WILL ALTER STATUS OF UNIX WITH UNIX INC CO"

Despite Robert Kavner's statement that any spin-off of Unix into a separate company was years away, there is persistent speculation that major changes in the organisation of Unix within AT&T Co are on the way, Reuters reports from Boston. The newswire quotes one industry consultant who asked not to be named saying that the new company even has a name, Unix Inc, and a letterhead with a red hourglass as the logo. Unix Inc would be AT&T's answer to the IBM-led Open Software Foundation, and while Data Systems Group John Skalko denied categorically that there were plans for an independent Unix Inc, he said that AT&T wants to be as "co-operative as possible" with Unix licensees and that some licensees had suggested the company separate the software development from its hardware division, so that the company's machines would not have an edge over Unix-based hardware from other vendors. "That's a consideration: we want to assuage any concerns" that Unix is not independent, he said.

EDGE AND MOTOROLA SIGN JOINT TECHNOLOGY DEAL

Few details have surfaced yet, but Edge Computer, Scottsdale, Arizona is now understood to have signed a joint technology and marketing agreement with Motorola Inc, as predicted in UX No 185. The deal was signed by Jim Norling, Vice President in charge of Semiconductors. The deal is expected to provide Motorola 68020 and 68030 users with an upgrade path to the 68000 compatible Edge processor series. Motorola confirmed that it had signed with Edge, but neither company were ready to elaborate on the terms as we went to press.

DEC CONFIRMS TALK WITH MIPS
Confronted by the New York Times, DEC stopped no-commenting on reports that it had followed cancellation of its Argonaut VAX project with ending of the Prism RISC development, and it confirmed that it was holding talks with MIPS Computer Systems Inc about the Sunnyvale company's RISC processor (UX No 188). On cancellation of the projects, it said that such efforts get terminated all the time, adding that the engineers working on the projects had all been redeployed.

...BUT NO ULTRIX YET IN TP PUSH
Making what it claims is its most strategic announcement since the VAX itself, DEC has thrown itself into the transaction processing market with a number of new offerings and upgrades, but so far the emphasis is all on VMS, with DEC saying it is currently considering Ultrix versions, but with no dates planned. Under the umbrella of a programme entitled DECtp, the company released Version 3 of its Application Control and Management System (ACMS) transaction processing monitor, with a performance increase from 6tps to 30 tps (using the debit/credit benchmarks). But it also launched DECintact, an alternative TP monitor designed to appeal to users more used to a CICS environment, and based on a product from Advanced Systems Concepts. Also introduced was an upgraded version of the VAX Rdb/VMS, said to be five times faster than previous versions. DEC says it hopes to expand its current 5% share of the market to between 10 and 15% by 1991.

DIAB WINS US OEM DEAL

Swedish computer manufacturer Diab Data has won an OEM contract from ISC Systems Corporation, Spokane, Washington, for its DS90-21 68020-base multi-processors. ISC has placed an initial order of 100 systems, but will soon begin manufacturing the systems itself to sell into banking and financial applications. Diab saw a 40% increase in sales last year, and through another OEM, Norsk Data, has sold many systems to the Swedish Department of Defence.

ENCORE OFFERS PARALLEL FORTRAN PACKAGE

Encore Computer, Marlborough, Massachusetts, is now offering a parallel Fortran package with its Encore Multimax system, allowing developers to implement both automatic and user directed parallelism in Fortran programs. The product consists of a parallel optimiser developed by Kuck and Associates, providing optimal execution of vector type operations, and scalar computations such as DO loops, array constructs and others. Also included is a parallel compiler originally developed by Green Hills Software: both components have been further developed by Encore. According to Product Marketing Manager Jim Spoerl, the Encore's shared memory architecture is very compatible with Fortran. "Because Fortran provides a single, uniform address space, parallel extensions to Fortran can be easily mapped to the architecture", he said.

SYSTIME PLANS PRESENTATION MANAGER PC CONNECT

Systime first revealed its plans to move away from hardware manufacturing towards software technology solutions back in January (UX No 161): by then it had already de-emphasised its own hardware with an extensive OEM deal to re-badge Altos kit. Six months on, the company says it has signed up 20 VARS reselling Systime vertical market applications: "we've moved from a lock-in company to an open strategy", said third party sales director John Arnold. One line of business has been conversion of software for ICL and Wang Cobol users to run under Unix, and the company is still working on what Arnold still calls "our own user base" of DEC PDP customers, a legacy from the days when Systime was DEC's largest commercial distributor in the UK: these are encouraged to make the transition to Unix via Systime's Trans Basic product.

But the real effort has been saved for a newer line of ~~technical software, dubbed "visionware"~~. PC-Connect, launched last year is the first in the line, and uses Microsoft Windows running on a PC to display user data from a Unix system. Unix applications can be run as windows on screen alongside MS-DOS programs. Already the product has been taken up by Altos Computer Systems Inc for its Workstation 100 (UX No 184), and Computer Consoles Inc and UK micro-maker Jarogate are also working to incorporate the software into future products. The UK Government's Central Computer Services Agency and Manpower Services Commission have also taken PC-Connect for in-house use. Future product developments include support for X-Windows - to be demonstrated at the X Windows show in Boston next month - and a Presentation Manager version that will also support X, due out in the first quarter of next year: the company says it is working with Cambridge-based X experts IXI Ltd on the developments. The aim, said Arnold, is to have some Systime software bundled in with 30% of the world's computer products by 1990.

CONSORTIUM PUBLISHES BINARY STANDARD FOR 88000

88Open, the group of hardware and software vendors committed to the Motorola 88000 RISC chip, has issued a binary compatibility standard for the new processor. The BCS calls for all software written for the 88000 to employ a common interface to executable or binary programs, allowing all software to be easily transportable between different hardware based on the 88000. By not specifying an operating system, the BCS, implemented at a basic system call level, is potentially applicable to any variant of Unix, or a non Unix operating system. 88Open's binary standard committee, headed by Data General's senior technical consultant Donald Lewine, used the proposed 68000 family standard document produced by Motorola and Unisoft Corp as a model, and the 88000 standard is similarly compatible with POSIX, X/Open and the AT&T System V Interface Definition. According to Lewine, the BCS incorporates 90% of the specifications developed for the proposed 68000, which should ease the portability of applications between the two architectures. The BCS is also said to be a subset of AT&T's proposed application binary interface for the chip, which will add extensions such as shared library support, network interface, and the "look and feel" of the windowing system, using Open Look. 88Open says it will be working with AT&T to extend the BCS to full ABI standard in the future. A full membership list to 88Open has not yet been published, but known members include Convergent Technologies, Data General, Encore, Integrated Micro Products, Tadpole Technology and Tektronics.

SIA TO DISTRIBUTE DUTCH 4GL UNIFACE FOR UNIX AND VMS

Dutch software house Inside Automation BV has found a UK distributor for its Uniface database-independent set of development tools in the form of London systems house SIA. The product, in line with a trend being followed by an increasing number of vendors, provides a variety of tools that work under Unix or VAX VMS and are said to be able to interface with file management systems such as RMS or C-ISAM, ~~or with database management systems including~~ Oracle, Sybase, Ingres and DEC's Rdb. SIA notes that Uniface can also provide referential integrity for relational databases, and includes a windowing interface and a data dictionary. Amsterdam based Inside Automation also has distributors in Belgium, Germany and France. SIA quotes UK prices as ranging from)Lb5,000 - 50,000: Unix machines supported include NCR, Hewlett-Packard and Unisys products.

MICHAEL BUSINESS SYSTEMS DOUBLES IN SIZE, MOVES INTO XENIX WITH VEGA MERGER

Following the finalisation of merger arrangements, the Burges-Hill-based IBM Business Centre, Michael Business Systems Plc, has acquired Vega Computers Ltd, a Croydon-based firm specialising in Xenix and Unix installations in an exchange of shares; the parties declined to give any details of the transaction. Mike Robers of Michael says that the acquisition doubles its size, and combined annual turnover will be £6m - Vega is running at about £2.9m.

NEW COMMUNICATIONS SERVER FROM BRIDGE

The Bridge Communications division of 3Com Corp, Santa Clara, California has added a new model to its Communications Server/ line. The Server/210 is the second communications processor from 3Com that runs a Bridge-developed implementation of the entire seven layer Open Systems Interconnection protocol specification. The new 10-port 210, designed for smaller networks of up to 20 servers, costs \$3,300, against \$16,000 for the existing 64-port CS/1-OSI. In addition to the Open Systems standards, the CS/210 supports Transmission Control Protocol/Internet Protocol, used extensively in Unix environments and within the US Federal government, and the Xerox Network Systems standard. It features a local booting capability allowing it to be operated without a Bridge Network Control Server. The Server is Bridge's network management workstation which enables network monitoring and remote booting of Bridge server products. Users who want to migrate from TCP/IP or XNS to the Open Systems standards simply have to change the server's software. The CS/200 is \$2,800; an additional licence fee of \$50 is assessed for each CS/200.

MEMORY SHORTAGE "ABOUT TO EASE"

The acute memory chip shortage may be beginning to ease a bit according to Dataquest. The market research firm says that spot prices for 256Ks have fallen by 40% to \$10 a time over the past few weeks, and that contract prices - where you can get contracts - are 21% down at \$3.50. In 1Ms, where yields are now thought to be around 50% against as low as 5% at the start of the year, contract prices are down 20% to \$22. "There's light at the end of the tunnel now and it doesn't look like it's coming from a freight train," Dataquest's Mark Guidici advised the Wall Street Journal.

ORACLE VERSION 6 TOPS 110 TPIs

Oracle Corp yesterday claimed a number of performance records at the official launch in New York of Oracle Version 6, the new on-line transaction processing version of its relational data base management system. Using the standard TPI benchmark, Oracle set records by running 265 TPI transactions per second on an IBM 3090-600E mainframe running MVS, 49 TPI transactions per second on a DEC VAX 6240 running VMS, and 110 TPI transactions per second on a large supermicro from Sequent running Unix; the company also claims dramatic gains in cost-per-transaction; the full production release of Version 6 will be out within 90 days in each of the benchmarked environments and releases for VM/CMS, Sun, Pyramid, Hewlett-Packard, Data General, Macintoshes and MS-DOS and PS/2 micros will follow shortly.

IBM PROMISES TWO MAINFRAME-POWER RISC CPUs

The fact that the RT Personal Computer has been a modest commercial success for IBM in Europe - albeit in large part running business rather than the technical applications for which it was intended - completely escapes most US industry observers, who see only the dismal failure of the machine in the US, where most of the installed base is thought to be within IBM itself. Nevertheless, making it clear that IBM has by no means lost faith in its Unix workstation, Advanced Engineering Systems director Arthur Goldberg lifted the veil a little further on IBM's future plans for the line earlier this month - and confirmed news gathered at IBM's recent Glasnost session in La Hulpe, Belgium (UX No 188). Speaking at a conference in Boston, Goldberg revealed that IBM is working on a RISC-based engineering workstation that will have the power of the 3081, yet cost under \$100,000, and that it will be followed by one with the power of a 3090/200 with Vector Facilities fitted, also to go for under \$100,000. Future models of the RT are expected to standardise on the Micro Channel Architecture bus of the PS/2 line.

DATAVISION RESTRUCTURES TO MAJOR ON DEC MIGRATION AID

Blackpool-based Datavision Ltd, which developed and sells the Universe Basic compiler used for migrating Basic-Plus software from DEC PDP-11s to Unix, has restructured its business following the departure of managing director Barry Bullen. Bullen is to buy the company's third party computer maintenance business, leaving general manager Laurie Clarke in charge of the compiler business. According to Clarke "the time had come to decide precisely where our future priorities must lie". It will be expanding its sales and development teams both in the UK and at its US offices in Hartford, Wisconsin.

PROBLEMS IN GERMANY - BUT EUROPEAN MARKET STILL BOUYANT

There has been a growing chorus of concern in the US that the sturdy growth in the European market that for many computer companies has offset dull conditions back home, may be coming to an end - Apollo's German problem is cited, alongside the concern voiced at Nixdorf Computer AG that profits will grow little if at all this year - but a more detailed look by the Wall Street Journal suggests that it is very specifically the West German market that seems to have gone ex-growth and that the other major European markets - the UK, France, Italy - remain buoyant: the problems in Germany are put down to the strengthening Deutschmark, which has made life tougher for exporters and made them less willing to invest in new equipment, coupled with the fact that the accountants have taken over from DP managers in specifying computer equipment, which has led to a widespread attitude that "we don't need any more computers", and a near-saturated market.

INFORMIX CHANGES DISTRIBUTION POLICY - PROMISES OBJECT ORIENTED DATABASE LINE

Informix Software Ltd, the result of a recent merger between Informix Corporation and Innovative Software, has announced its withdrawal from direct customer sales in order to concentrate on the support and development of its dealer and third party resellers. Previously, the company - and particularly the Innovative Software side of the organisation which was heavily involved in MS-DOS sales with its Smart integrated office automation package - was selling in direct competition with its distributors and dealers. Informix UK Managing Director Ken Coulter said that as from August 1st Informix would sell only to distributors, including First Software Ltd, Basingstoke, Quartz of Basingstoke, Softsel of Brentford, Software Limited of Cental London, Sphinx Ltd of Maidenhead, and Tamarisk of Maidenhead. The company says it will still work direct on OEM business - it has deals in place with ICL, NCR, Olivetti and Unisys - and to the "small percentage" of major accounts that insist on dealing direct. Coulter predicted that Informix would achieve turnover of \$100 million this year, and that a fully integrated product line would be ready by July 1989, including graphical word processing and database software linked up with an object oriented database, communications, and Presentation Manager, X- Windows and Open Look interfaces. Coulter said the company was aiming for "a significant part of the Xenix office automation market for 286/386-based machines".

...AND WINGZ READY BY SEPTEMBER - SUN VERSION "ON THE WAY"

Sun Microsystems struck up a deal with Innovative Software Inc back in January (UX No 162) just before its merger with Informix Corp, and were said to be working together on the development of software that would take advantage of the graphics and windowing facilities of the Sun. The result will be a version of Wingz for Sun, which is to be implemented into its forthcoming range of office automation software. Industry sources suggest that the software will be launched by the end of this year. Wingz has been developed for the Apple A/UX environment and runs under Apple's windowing system: it features 3-dimensional graphics, and is claimed to be the first merger of electronic worksheet and desktop publishing technologies. According to Informix's UK Managing Director, Ken Coulter, that version will be ready by September.

SPHINX ON ACQUISITION TRAIL

Sphinx Ltd, the UK's largest distributor of Unix software, is looking to double its size over the next six months, with up to three acquisitions, according to Sales and Marketing Director Jon Morgan. The company is rationalising its product lines, and concentrating more on the integration of database, operating system and networking products, for both end-users and oems. Morgan said that Sphinx is currently working on "over five" major oem deals.

PYRAMID BUILDS ON RISC PERFORMANCE WITH CACHE, OPERATING SYSTEM ENHANCEMENTS

Pyramid Technology responded to our suggestion (UX No 187) that it had been rather quiet of late with the news that it had now sold over 1200 systems worldwide - but nevertheless, the perception has been growing that rival systems from the likes of Sequent and MIPS were starting to steal some of the RISC pioneer's thunder. Now the company has come out with enhancements to its hardware and software that result in an average doubling of performance on commercial applications, according to Pyramid. The Series 9000 TA (for throughput accelerator) systems include a fine-tuned cache subsystem designed "to work in closer harmony with the cpu". This has been done by adding interleaved virtual caches, operating system controlled space allocation, and hardware- controlled dynamic sizing for kernel and user processes. The second area of enhancement is closely tied to database software. Last year (UX No 144), Pyramid announced an OEM and technology exchange agreement with database vendor Sybase Inc, which resulted in a series of Pyramid machines specially customised to run faster using Sybase software. These enhancements have now been carried through to benefit the company's other database partners, which include Oracle Corp, Informix Software, Relational Technology, and Unify Corp: the performance gains largely result from the inclusion in the new operating system - OSx 4.4 - of asynchronous non-blocking disk input/output, which removes one of the remaining major bottlenecks on database applications. TA is available as an upgrade for existing Pyramid users - and the company already claims eight orders, including London-based investment bank County NatWest with a 9825, and the US Western National Warranty Corporation. Pyramid also took the opportunity of lowering its base-level price for the Model 8810 system by 28% - which means it is now available for £87,530. And the company is about to open its third European office, in Amsterdam, Holland, which joins its established operations in the UK and Switzerland.

SEQUENT WINS FIST GOVERNMENT ORDER

Sequent Europe Ltd has been chosen from ten tenders by the UK Government's Central Statistical Office (CSO), where it will replace a Sperry 1100 the CSO previously shared with the Treasury. The Sequent S81 will run the Ingres relational database, and will be configured with four 80386 processors, 16 Mb memory and 1.5 Gb disk storage. Using Ethernet and TCP/IP, the system will be linked to around 80 IBM compatible PCs (mostly Amstrad and Sperry PC/ITs) running MS-DOS. The machine will be used to hold the CSO database of economic statistics, but conversion from the Sperry will not be completed until March 1989. CSO Computer Services head John Ludley said the Sequent had been chosen as it was "the most cost-effective" of the systems tendered.

IBM CHANGES ITS MIND - UNIX IS GOOD FOR BUSINESS

In a quite remarkable volte face, IBM on Tuesday abandoned its stance that Unix was only for technical and engineering applications, and that the RT - or 6150 as some Europeans call it - was purely a technical workstation, and surprised an audience of software developers in Washington by inviting them to please implement multi-user commercial applications under the AIX implementation of Unix.

This just might have something to do with the fact that Uncle Sam is rather impressed with the portability and machine independence of Unix and has no difficulty in taking on board the idea of using it for administrative data processing - in Europe, of course, most resellers of the RT sell it for business applications anyway - but the change of tack nevertheless represents a major policy swing at Armonk. Turning to the products, the three new RT models, built around a 25% faster version of IBM's RISC, are the desktop Model 130 and floorstanding 135 and B35. They also feature an enhanced level of the Advanced Floating Point Accelerator and 114Mb of fixed disk storage. The processor board also comes packed with 16Mb memory as standard, up from 4Mb on existing models. The machines have a 114Mb disk with Extended ESDI Fixed Disk and Adaptor as standard, and if you pay more, you can have the new 310Mb disk installed in the first drive position instead; two additional drives can be installed on the 135 and B35 for a total of 930Mb. The 6151 RT System Model 130 - it's the RT System, not the RT Personal Computer now - is \$23,220 in standard configuration, the 6150 Model 135 is \$30,595 and the B35 is \$32,165, and they're available on July 29 in the US - IBM UK "won't speculate" on when they might or might not be announced here. And it's RIP for the original RT models: the 6151-10, 6150-20 and 6150-A25 will all be withdrawn from marketing on October 21.

Business means Cobol

Now that IBM is encouraging people to see the RT as a multi-user business computer, it has to provide some of the appropriate software tools, and what could be more appropriate than the latest Micro Focus Plc Cobol compiler. IBM doesn't come right out and say that it is the Micro Focus product through and thorough, but as it is offered with the UK company's Forms 2 and Animator, we can assume that it is. IBM says that the AIX/RT VS Cobol Compiler and Run Time Environment are designed to provide a complete Cobol development system and application support environment for the RT, and that the Cobol implements the Systems Application Architecture Cobol Common Programming Interface language definition. The compiler can produce both intermediate and native code and is to ANSI X3.23-1985 and 1974, both at the high level. The compiler has a one-time charge of \$2,000 and the run-time system is a one-time \$500, both to be available September 30 in the US. And to make Cobol even more at home on the RT, there's an embedded SQL Cobol preprocessor for Relational Technology Inc's Ingres relational database on the RT. The Embedded SQL Preprocessor for Cobol enables Cobol applications to access Ingres, and Ingres/Net is enhanced with protocol support for SNA LU 6.2, so that the database manager can support a distributed database using SNA. The single user preprocessor is a one-time \$300, the LU 6.2 enhancement is free, the first arrives at the end of September, the second follows at the end of October. And, not to be out done, Oracle Corp also contributes Oracle Pro*Cobol Programming Interface for Cobol applications requiring SQL database access, and the Oracle

SQL*Net SNA LU 6.2 Protocol Device Driver to achieve the same ends as the Ingres product - and at a one-time \$450, Oracle undercuts Relational Technology, but charges the same amount for the LU 6.2 implementation. The device driver is out July 28, Pro*Cobol follows at the end of October. And effective October 19, IBM withdraws SQL/RT 2.1 from marketing.

Disk drives

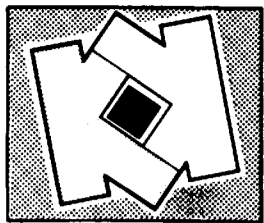
IBM is very proud of its new 310Mb disk drive for the RT, and points out that it is available as a model in the 6156 Portable Disk Drive line as well as an internal drive. The RT System can now have up to 7.46Gb when three of the new 310Mb drives are installed, the 6156 Portable Disk and a 9332 are all used. Customers can substitute, at the time of initial order, an 114Mb or 310Mb fixed disk drive in place of the standard 70Mb or 114Mb drive in the 100 Series models of the RT, and a 310Mb drive in place of a standard 114Mb drive in the 6156 Portable Disk Drive and on the new RT Models 130, 135 and B35. The company gives only a price range of \$1,100 to \$6,895 for the new options, but the 114Mb and 310Mb options, the 310Mb second and third drive and the 70Mb and 310Mb Portable Disk Drive Modules are all available at the end of the month.

CAEDS software

On the software front, IBM announced CAEDS v3 for the RT, saying that the product - the full name is Computer Aided Engineering Design System - provides drafting, design, and engineering facilities for dimensioning, solid modelling, and finite element analysis - and each can either operate independently or be fully integrated using a set of common graphics and user interface services. The new release supports enhancements to the IBM 5080 Graphics System, including advanced imaging, shading, and reflections. It offers interactive solid model editing; unified and adaptive meshing; geometry-based loads and boundary conditions; an integrated thermal and laminate composite modelling and analysis feature; a mechanism design system modelling feature; and a structural optimisation feature. The base system is \$3,150 plus \$380 a year if you want enhancements; the object modeller is \$7,770 and \$930 a year; the system modeller is \$11,130 and \$1,335 a year; the graphics finite element modeller is \$11,340 and \$1,360 a year; the Integrated finite element solver is \$7,200 and \$865 a year; and the dimensioning facility is \$5,040 and \$605 a year. All are planned to be available on August 26.

Graphics display

And finally, if you want to use computer aided design and modelling programs such as CAEDS on the RT, IBM reckons that you'll really be much happier sitting at a 5085 graphics processor and a 5081 graphics display, and to encourage you to take the plunge, it has reduced their prices, with effect from last Tuesday. The 5085 is now 12% cheaper at \$14,210, and the 5081 is reduced by 7% to \$4,000.

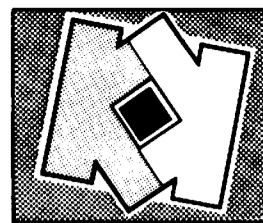


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Rapacious Hull-based Radius Plc this week announced its acquisition for July, that of Slinn Computer Group Ltd, a South Yorkshire Unix software and systems house. In June, the company agreed to acquire ICL software house MGB Computers and has made a string of other acquisitions since its flotation: Slinn's main business was the sale of its Progress fourth generation language.

- 0 -

The UK's Information Technology Plc (ITL) was quick to announce the availability of Oracle Version 6 and the Oracle Transaction Processing Subsystem on its Unix-based Momentum Series 21 Model 96 fault tolerant systems - the ones it buys in from Sequoia - UK PC hardware and software distributor First Software, which has recently diversified into the Unix and 80386-based "power software" markets, has changed its name to Frontline Distribution Ltd: Frontline director John Weatherhead said the name change was primarily made because of the company's increased emphasis on peripheral hardware, along with its software distributorships for products such as Informix, Uniplex, SCO Xenix, Frame, and Unity.

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For anyone considering a move to fourth generation languages, it could be worth while following up an offer from Minerva Open Systems Ltd of South Ruislip in Middlesex: the company, which now does all its own development work in 4GLs, says it spent three man-months preparing a comparative study of all the main players (Oracle, Ingres, Empress, Sybase etc) and says it is willing to share the results with others free of charge, on the understanding that the documents are for internal use only: contact Philip Page on 01 842 0061.

- 0 -

Stellar Computer UK officially opened its doors this week on its new offices in Guildford, Surrey: the company, under the direction of Ian Gilbert, will be showing off its GS1000 computer to the press and potential customers for the first time in the UK.

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Active Memory Technology, the company working to exploit the Distributed Array Processor (DAP) technology it inherited from ICL, has won an additional £1 million funding from venture capitalists the Schroder Group in London, bringing its total funding to £9 million: the company says it will use the money to strengthen its European base, and develop new products (look out for new hardware around October).

Apollo Computer Inc, making rather a habit of delivering shock announcements just now, said Friday that its highly-regarded president and chief operating officer Roland Pampel had resigned with immediate effect - and no explanation was offered: chairman and chief executive Tom Vanderslice will reassume control of day-to-day operations.

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Hewlett-Packard Co has finally answered Apple's copyright infringement suit over the NewWave graphical interface by denying all charges and counter-suing Apple for alleged unfair business practices and violation of anti-trust law.

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Datapoint Corp has laid off between 60 and 70 manufacturing staff at its San Antonio, Texas plant, reports Electronic News: the company says there has not been a slowdown in sales, but an increase in the number of systems it buys in from other manufacturers, such as the Scandinavian Norsk Computer Industrie machines for its Unix-based line (UX No 165).

- 0 -

The Whittle Laboratory at the University of Cambridge, England, is the first UK customer for the Alliant FX/80 parallel minisupercomputer: the lab will upgrade its current FX/8 system to a four-processor FX/80 next month, using the system for turbo machinery simulation.

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The Usenix Corporation is to hold a Unix Security workshop in Portland, Oregon between August 29th and 30th; it will feature speakers from the US Navy, Pacific Bell, Prime Computer and The Santa Cruz Operation.

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And Uniform DC is fast approaching: the Washington-based Unix show is not the major trade show held in February each year, but is recommended for those interested in US Federal and Government business - it takes place between August 2nd and 4th.

- 0 -

Ing C Olivetti and DEC have struck up a technology exchange agreement to ensure that Olivetti PCs can be fully integrated into DEC's OSI-based Network Application Support networking environment, allowing electronic mail, filesharing, and access to database and peripherals: the move follows a similar agreement earlier this year with Apple Computer, from which further news is expected this October.

Toshiba America Inc has set up a new division to handle Unix sales and distribution in the US: it is reportedly seeking business from OEMs and VARS for its 80386-based systems running Unix System V.

- 0 -

Televideo Systems Inc claims it is first out with a clone of DEC's recently launched VT320 terminal - its new 9320 system costs £425 - and while the majority of its sales will go to DEC owners, Televideo expects that Unix users will also show an interest in the character-based terminals.

- 0 -

Sony Microsystems is making headway in building up a European distributor network for its NEWS workstations, and following Logitek's announcement that it has been appointed UK distributor, Sony now says it has signed up Eindhoven company SIMAC to cover the Netherlands and Lucerne based ACU Informatik AG to cover Switzerland.

- 0 -

Informix Corp has signed an agreement with the MIPS Computer Systems software consortium Synthesis Software Solutions of Sunnyvale, California; Synthesis will make the Informix range of products available to computer systems using the MIPS RISC chip range.

- 0 -

Along with its RT announcements on Tuesday, IBM also announced the release of DOS 4.0, which includes support for expanded memory and very large files: it was not, however, to be confused with the restricted edition DOS 4.0 that was circulated in Europe a few years back: the clash was explained by a Microsoft spokesman to be "a co-incidence of version numbers".

- 0 -

Remember Yarc Systems Inc, the Fremont, California company with the Am29000 McCray co-processor for the Apple Macintosh? We wrote about the company back in May (UX No 180), but we are now in a position to reveal that while Yarc is Cray backwards, it is actually intended to stand for Yet Another Ruddy Co-processor - leastwise, that's the story the company is sticking to.

- 0 -

The reason this issue is a little late is because we held it back to include the IBM announcements on Tuesday afternoon. And if you rang to find out where your copy was, you would have noticed that the telephone number has changed; we're now on the Mercury Communications telephone network, so please note our new number - 01 528 7083; our fax number remains 01 439 1105.

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IBM BOOSTS X/OPEN CONSORTIUM

Open software consortium X/Open has now announced that IBM is the latest company to join, boosting the combined revenues of member companies to \$108 billion. IBM applied to join X/Open back in May (UX No 180) following the formation of the Open Software Foundation, which has included conformance to X/Open's Common Applications Environment within its charter. Of the eight OSF members, only Apollo Computer is not a member of X/Open, and despite the company's assurances in May that it had applied for membership, X/Open says it has not yet received an application. IBM brings X/Open membership up to 15, including Fujitsu, which joined two weeks ago: the other members are AT&T, Bull, DEC, Hewlett Packard, ICL, NCR, Nixdorf, Nokia Data, Olivetti, Philips, Siemens, Sun Microsystems and Unisys Corp.

OPEN SOFTWARE FOUNDATION ASKS FOR UNIX USER INTERFACES

The Open Software Foundation alternative Unix club, currently operating out of temporary premises in Lawrence, Massachusetts, this week issued its first Request For Technology, asking all software and hardware vendors worldwide to submit their graphical user interface technologies for consideration (and if chosen, licensing) as part of the Foundation's Level One Unix implementation. Interested parties have until September 16 to make their proposals, and those putting up qualifying technologies will get the opportunity to present their material at a Foundation meeting in the last week of September. Foundation members will then discuss the offerings with development staff early in November, after which the chosen technologies for the User Environment Foundation will be announced - which means that while IBM may well want Next Inc's graphical user interface for AIX, it is by no means certain to be adopted by the Foundation. The Request specifies conformance with the X Window System v11: X Window defines the underlying technology but not the screen appearance or interactive behaviour; with IEEE 1003.1 Posix; ANSI C; portability; readiness to ship by first half 1989, and portability. The Foundation has named Henning Oldenburg, formerly computer-integrated manufacturing chief at Nixdorf Computer to be Director of European Operations. The European office of the Foundation will be in Brussels.

CONVERGENT REGROUPS FOR COMMERCIAL UNIX

With IBM capitulating with its latest RT releases, the tide running for Unix in commercial environments is becoming well-nigh irresistible, and yesterday Convergent Technologies Inc, San Jose, moved to strengthen its pitch in the commercial Unix market. The company has formed two new Unix divisions - a Unix Systems Division, which merges the company's two existing Unix products groups, the Network Systems Division and the Server Products Division; and a new Telecom Systems Division to focus on integrating and optimising Convergent products for the telecommunications market - including Unix computers "which are well accepted in this market". The company says it expects its revenues from Unix products to grow 275% to \$120m next year. The new Unix Systems Division will develop a high-end multi-processor server for use with all the company's product lines, and a "customer-oriented" application-tool development and portation centre extension of the company's "Passport to Unix" programme. Eric Carlson, previously head of the Cluster Systems Division becomes senior vice president and general manager of the new Unix division - but the Cluster unit is also receiving attention. It is responsible for an installed base of over 500,000 CTOS processors, and Convergent is looking to extend the Intel iAPX-86 based line with highly integrated ASICs, snap-together packaging, and new software to enable CTOS to access other application environments. On the telecommunications front, Convergent says it already has strong alliances with two firms, BellSouth and Bell Canada.

DEC "MAY TAKE MIPS STAKE"

US reports suggest that DEC may be looking for more than just an OEM agreement from RISC systems manufacturer MIPS Computer Systems Inc of Sunnyvale, California. The two companies are currently in the early stages of negotiations for DEC to buy an equity stake in MIPS, according to Computer Systems News. Such a deal would provide both valuable funding for MIPS and increased influence and security for DEC if it uses MIPS hardware with future product lines. DEC recently cancelled two projects designed to boost the speed and power of its VAX series, including a RISC-based project codenamed Prism, and a re-implementation of the VAX 8800 ECL processor, known as Argonaut. It now appears to be concentrating on another high-end project - codenamed Aquarius - and may concentrate its RISC efforts into a separate line of processors running Unix/Ultix, distinct from the VAX architecture. Such a policy fits in with DEC founder Ken Olsen's comments at the European Unix User Show last month (UX No 183) that the company would use "specialist Unix processors" for applications where raw processor speed is the most important factor".

PRIME WITHDRAWS FROM CYDRONE MINISUPER VENTURE

Several small and innovative companies in the minisupercomputer field have fallen by the wayside, but the shakeout in the market has now hit the first major: Prime Computer Inc has decided to get out of what it sees as an over-competitive market and take a \$5m bath on its venture, which involved marketing machines built by privately-held Cydrome Inc of Milpitas, California. The Natick, Massachusetts minimaker holds over 12% of Cydrome, and says that it is writing down its investment in the company. Prime warns that the write-down will bring net per share for the second quarter down to between 13 and 17 cents a share, compared with 32 cents this time last year. Cydrome launched its Cydra 5 minisupercomputer in January, characterising it as the first Directed Dataflow symmetrical multiprocessor, running the Cydrix 5.3 symmetrical multiprocessing version of Unix V.3, and Prime launched the machine as the MXCL 5 (UX No 164).

UNDERSTANDING TRON - PART 1

THE THINKING BEHIND THE JAPANESE OPERATING SYSTEM

by Geoff Conrad

While the West was dazzled by the inference engines, knowledge engineering and other exotic concepts from Japan's Fifth Generation Project and has tended to write it off as a failure, over 50 Japanese companies (including Fujitsu, Hitachi, NTT, Matsushita, Oki and Toshiba) joined up with a number of universities and "independent organisations" to work on the more down to earth Tron Project. Perhaps because the Fifth Generation project has failed to live up to the the ridiculous hype it received in the West (but not in Japan), the Tron Project has been either ignored or dismissed as being of little interest outside Japan.

Total architecture

Although the name stands for The Real-time Operating system Nucleus, the project is much more wide-ranging, covering almost every aspect of computer design and use. This "total architecture" is open - anyone can use the Tron specifications at no cost, but the implementation must conform to the standards. As different applications may have very different requirements, it would be wasteful and unwieldy to take the Ada language approach and put everything into a single implementation. So the Tron designers decided to develop a family of closely related architectures, operating system kernels and VLSI processor chips, but all would have a common man-machine interface. This results in a range of machines tailored to different tasks that all look alike and work the same way for the user. The specifications provide a guideline for a whole range of high-performance machines, from personal workstations and embedded systems to powerful mainframes and network file servers, all conforming to a single family of open-systems computer architectures and with a uniform man-machine interface. A lot of attention has been paid to the way the machines and applications are presented to the user, right down to the level of ensuring that, for example, if one program uses a particular icon on a bit-mapped display to represent a certain parameter, then every program on the whole range of machines use the same icon to represent that parameter. It provides a general framework for computer system design as well as specifications for specific system components from VLSI chips to a mainframe operating system kernel. There are separate but related versions for embedded industrial systems, workstations, business systems, large file servers, networking and for controlling "intelligent objects" - any machine or appliance under microprocessor control. As originator Ken Sakamura explains: "After discussing the many shortcomings of existing systems with many designers and users, we concluded that the only way we were going to get satisfactory computer systems in the 1990s was to develop a completely new architecture. In this way we could address all the problems of existing systems at once and fix them now before carrying them into another generation of machines." Tron is not a specific product but a framework of direction for the Japanese computer industry. It is rather like a greatly expanded version of the X/Open Common Applications Environment, which is designed to allow users to mix'n'match components from the different manufacturers in the group. But the Common Applications Environment only really concerns hardware and its interfaces, with the different components held together by Unix. Tron's open specification is layered rather like the Open System Interconnection model for data communications, with separate specifications for each layer and for the interfaces between them. The layers are:

- * The instruction-set processor or ISP layer;
- * The operating system kernel layer;
- * The operating system shell layer;
- * The application and man-machine interface layer.

Only the instruction set processor layer deals with hardware, the other three layers being concerned solely with software. The operating system has been divided into two layers, the kernel layer and the shell layer. The latter is not a command interpreter like the Unix shell, but a collection of extended system service calls that can be regarded as optional extensions to the operating system. For example, in an architecture that includes a bit-mapped display (such as a workstation), the shell layer might include a collection of system calls for the sophisticated control and management of the bit-mapped display. As they are part of the kernel, they would be much faster and more efficient than if they were implemented as part of an application, and would help to ensure a uniform user interface. However, in architectures such as embedded systems that do not include bitmapped displays, the shell layer would not include these system calls, allowing the operating system to be kept small and efficient. The main objection the Tron team has against Unix is that encourages people to build their own "user-friendly" shells around applications for non-programmers to use.

Anarchy

They conceded that it can be a good operating system for workstations and that it has been very successful. But they strongly disapprove of the "anarchy" where almost every application has a different end-user shell or man-machine interface, making it difficult for the programmer to use different programs. While many people in the West find this an annoyance, it is enough to make Unix completely unacceptable to the Japanese designers. As Tron's inventor, Ken Sakamura (a professor at Tokyo University) put it: "Imagine having to deal with a set of application programs in which each program offers a different user interface!" (Note the exclamation mark!) Because computers are used for such a wide range of applications, the Tron designers have had to define four initial versions of the Tron architecture:

- * I-Tron for embedded industrial systems;
- * B-Tron for workstations and business systems;
- * C-Tron for large file servers and networking environments;
- * M-Tron for interconnecting "intelligent objects."

The Tron designers consider that the most important difference in the demands the four classes of applications make on their architectures is in real-time response (hence the acronym). Industrial systems are considered to require a response time of a millisecond or less, while most business applications only require a response time of the order of a second. Each of these architectures has its own operating system kernel and a family of VLSI processor chips is under development with an instruction set designed to execute the operating system and application code efficiently. Processor architecture, instruction set, operating system, compilers, system software were all designed and optimised together.

SOFTWARE LABS AND PRECISION AGREE OVER UNIGEM DISPUTE

In an out of court settlement, UK software distributors Precision Software of Worcester Park, Surrey, has resolved its copyright dispute with the developers of the Unigem "real time" accounting package, Software Laboratories of Bray in Co. Wicklow, Ireland. Precision began proceedings against Software Labs back in March (UX No 172) following a number of large OEM deals for the package in Europe and Australia, including a #17 million contract from NEC in Australia (UX No 146). Precision claimed that it had carried out some of the original development work on Unigem, and had sub-contracted development work to Software Labs whilst retaining product rights. But following discussions between the parties, an agreement was signed on Monday "giving recognition to the important part that Precision played in the early days of the development of the product", according to a statement issued by Software Labs. The agreement awards an undisclosed settlement to Precision Software, and allows Software Labs "the unencumbered ability to further develop, market and sell Unigem".

UNISYS TREADS MIDDLE GROUND OVER OSF

On July 12th, Unisys Corp placed full page adverts in the International Herald Tribune and the Financial Times extolling the virtues of open systems and castigating the two sides for not coming together and settling their differences. The advert described the feuding between the two sides as "disgraceful" and advised users: "If you think a unified Unix is important, tell your computer company". And last week, Unisys issued a carefully worded statement on the Open Software Foundation to journalists attending its Open Systems seminar in Nice, France last week. According to the statement, the company recognises the concern of OSF founder members that AT&T was moving Unix towards a "restricted hardware technology" through its relationship with Sun Microsystems, but says that the use of IBM's AIX as the basis for OSF's future product is an equally serious concern. "In the period between the release of the next version of AIX and the first release of the OSF product - at least nine months - a concern is that IBM would enjoy a substantial competitive advantage". Unisys said it was working "behind the scenes" to re-unify the industry around "a single, vendor-neutral development activity for the Unix operating system". The company says it will maintain its relationship with AT&T - it struck up a joint deal to develop commercial software with AT&T back in March, when it also announced its intentions to use Sun's SPARC processor for a new series of products (UX No 171) - but will also maintain a continuing dialogue with OSF.

MEGATEK ADDS WORKSTATION RANGE FROM SUN

Following an initial introduction in the US last month, the Megatek Corporation of San Diego is launching a new range of workstations to the European market. The Sigma 20 workstations mark Megatek's first venture into Unix, and are based on Sun Microsystems' 3/60, 3/200 and 4/200 workstations. Megatek Ltd, which has recently opened a UK office in Basingstoke, Hampshire, says it is targeting the workstations at real-time graphics users in the military fields of C3I (command, control, communication and intelligence), mission planning, simulation, training and data analysis, where there is a requirement for high system throughput and rapid screen updating. Megatek has designed and manufactured the Sigma 20 range, but by using a Sun CPU subsystem and Sun's SunOS version of Unix, has given its users access to general purpose programs designed for Sun to be run on the systems. The company, founded in 1972 and part of the United Telecom Group, recently won a contract from the UK's Ministry of Defence for its proprietary 9300 graphics systems for the MOD's Sea Systems Controllerate in Bath.

ENCORE MOVES DOWN UNDER WITH DISC

Encore Computer Corp, which is in negotiations with several potential UK distributors, has extended its overseas presence Down Under with the signing of an exclusive \$21m, three year agreement with Australian company Disc Computer Systems Pty. Encore also announced a Canadian wholly owned subsidiary, based near Toronto. Marlborough, Massachusetts based Encore now says it has representation in eight countries, not including its strategic agreement with Matra Datasysteme which covers France and Italy - and given the doubts currently being cast by the French press over the success of Matra's computer strategy, it seems possible that Encore will also seek additional representation in those countries. In Australia, Adelaide-based Disc was chosen for its experience in selling into VAX markets, according to Encore. Encore expects to finalise UK representation for its Multimax range of multiprocessors "within three months".

SHARE BLOODBATH FOLLOWS POOR IT RESULTS

The big technology sector on Wall Street went into a near tailspin over the last few weeks in an otherwise very mixed but not conclusively bearish market, as one by one, companies reporting figures less good than expected were greeted with a near bloodbath in their shares. After poor figures from Seagate and Silicon Graphics, it was the turn of Tandem Computers Inc, whose 33% decline in third quarter profit caused a late opening in the shares to avert disorderly trading, followed by a \$2.75 tumble to \$14.625. Data General, despite a return to profit, saw its shares shed \$2.125 to \$20.25; an IBM has lost all the gains won by the excitement over the AS/400 launch and shed another \$2.25 to \$121.75 on Thursday; and DEC lost \$3.125 to \$104.50. On balance the negative tone in Wall Street's technology sector is probably justified because all the signs are that the US market for computers, not at its brightest for a couple of years, looks as if it is if anything getting soggy - and companies that do have full order books are constrained by the semiconductor shortage. The problem by the latter factor is that these imbalances seldom work out of the system cleanly, and history suggests that supply and demand for memory chips will come into balance just as the market goes decisively ex-growth, leaving manufacturers with big stock surpluses.

PIXAR ADDS MAC II INTERFACE

Steve Jobs' acquisition Pixar Corp has announced an interface between its Pixar II image computer and Apple's Macintosh II workstation in an attempt to address a wider market, reports the Microbytes newswire. The interface allows the Mac II running under Apple's version of Unix (A/UX) to act as the user interface for the Pixar II, a machine optimised for real-time image processing. The system includes graphics routines written in C for use in graphic arts, scientific visualization, remote sensing and mapping, and medical imaging, but was previously only accessible through high-performance professional workstations from Sun, Apollo, and Silicon Graphics. Pixar Company President Ed Catmull said the move was intended to bring high-performance graphics to the low cost area: "That's how you make an impact on the world", said Catmull. Using the Mac II as a front end, a Pixar system can be had for "under \$50,000", said Catmull, although pricing is dependent on the amount of memory (from 12Mb to 108Mb). The Pixar II's "channel processor" architecture allows it to execute graphics routines at up to 200 times the speed of a VAX 11/780, according to Pixar, and has a video resolution of 1280 by 1024. Connection to the Mac is via SCSI interface. But a rival for the Mac may be just around the corner, once the long-awaited Next Inc workstation from Steve Jobs' other company finally materialises.

OCEAN OFFERS VOICE INPUT WITH MULTI-FEATURE RISC WORKSTATION

The latest entry in the competitive and overcrowded world of graphics workstations is small company Ocean Electronic Systems, Sunnyvale, California, which has at least worked harder than most to ensure its products have a distinct identity. The recently introduced Mach line of RISC-based workstations, use the Fairchild Clipper processor running at 33 MHz. Claimed to run AutoCAD Version 9 at a rate of 9 MIPS, the Mach Series offloads I/O by using an Intel 80286 or optional 386 processor, which also gives it the ability to run Unix and DOS concurrently. Both Unix V3 and Dos 3.3 operating systems are included. The machine offers "true" virtual memory, limited only by the size of the disk, and also includes voice input as a standard feature via the Vox Pop package, developed by Circle Computer Consultants of Orinda, California. Using a headset or hand held microphone, hardware interface card and VoiceCAD software, users can speak up to 500 command words to control a package such as AutoCAD. After seven to ten training cycles, voice recognition is said to be achieved in 98% of cases. Ocean has also worked on the workstation housing, with an integral anti-static footrest, design workstation with built in 12 by 12 digitizer, keyboard stand, uninterruptible power supply, and 20 inch monitor. Prices start from \$24,950.00. Privately-funded Ocean, which also produces 286 and 386-based PCs, says it has already had some success with "major auto manufacturers", says it is looking for European representatives aside from an existing agreement set up in Belgium. Its defence against workstation giants such as Sun and Apollo is simply "to be faster and offer more features".

EVENTWORKS TURNS UNIX WORKSTATIONS REAL-TIME

A real-time server for UNIX-based workstations has been introduced by Waltham, Massachusetts-based Event Technologies Inc. The product, EventWorks, is an integrated hardware and software subsystem designed to allow users of Unix-based workstations to develop real-time applications and execute them in a real-time environment. EventWorks can be used with workstations from Sun Microsystems. "These workstations have minimal real-time capabilities of their own," said Michael Powell, Event Technologies' president. "EventWorks enables end-users and OEMs equipment manufacturers to use these workstations in applications such as laboratory data acquisition, real-time graphics, communications, process automation, and high-performance, closed-loop control." EventWorks system prices begin at \$24,900, with hardware and software components available separately. Event Technologies' first product, announced in April 1988, was the LVI, a high-speed interconnect between the Symbolics 3600 family of computers and the standard VMEbus.

WANG CANCELS ELECTRONIC PUBLISHING VENTURE

The intentions of Wang Laboratories to push into the high-end integrated electronic publishing via an OEM deal struck up in September 1986 with Sun Microsystems, looks to have faltered with the demise of the main software partner, Text Corp of Arlington, Massachusetts, early in July. Wang intended to sell a package in which Sun 3s, supporting the composition software from Text, would be linked via Ethernet to a Wang VS computer acting as a host and communications server (UX No 131). But the package, originally intended to be launched by the end of last year, was delayed for technical reasons, and according to Computer Systems News, was cancelled late last month following a re-think of Wang's strategy. Text issued a statement saying it had closed down due to a lack of working capital: the source code for the Text software has been bought by Compu-graphic of Wilmington, Massachusetts, which had an investment in the company.

"WINDOWS FOR ALL" FROM CARNEGIE MELLON

Developers at Carnegie Mellon University in Pittsburgh have developed a computer language that is claimed will allow non-professionals to write graphical interfaces to applications software, including windows, pull-down menus, and multifold text. Called cT, or CMU Tutor, the new language is described as a general purpose language for any situation where a modern user interface is required, and is designed for font and graphics rescaling, with the same source code able to run on a Mac, Sun, IBM RT or a DEC microVAX. One of the languages developers, Bruce Sherwood, said the language's goals and methods were reminiscent of "a very good BASIC", when quoted by the Microbytes newswire. At Carnegie Mellon, cT has been in use for a year, is now becoming commercially available for the Mac, with IBM PS/2 and Unix versions (running under X-Windows) available later this year.

X/OPEN GEARS UP FOR PRODUCT BRANDING

X/Open officially compliant systems should be available some time in August, according to John Totman, Director of European Programmes. "We hope that compliant delivery systems will be available before September", said Totman "and we are currently putting together a list of products for a software directory of X/Open compliant software, due out at the end of September". Totman said that the delay in bringing out officially branded X/Open products were in sorting out the legal agreements, which were now "making good progress". X/Open's verification suite, developed by Unisoft Corp under project management from Nixdorf, has been ready for the last two months. Totman also revealed that X/Open would be holding a series of major seminars for European software developers, following its Independent Software Vendors conference in Brussels last month, attended by 160 ISVs. First stop will be Hanover in September, followed by similar events in Italy, Holland, Sweden, France and the UK.

TEAM WORK ON NETWORK MANAGEMENT

A total of eight computer and telecommunication companies are to join forces in an effort to speed up of the specification of network management standards. The line-up to date numbers AT&T Co, British Telecommunications Plc, Amdahl Corp, Northern Telecom Ltd, STC Plc, Telecom Canada, Hewlett-Packard Co and Unisys Corp. Work on network management definition has lagged behind other aspects of open systems interconnection standardisation due partly to the complexity of the area, but also because of a lack of foresight. Users today can interlink their multi-vendor networks but are unable to manage data flows with sufficient accuracy. Work on critical areas including security, configuration and fault management is still at an early draft stage with an estimated three years to go before product comes onto the market. Within the eight companies there are already a couple of ~~network management alliances - Hewlett-Packard is teamed with Northern Telecom on Hewlett's OpenView; while AT&T is close to Amdahl on telecommunications,~~ and has an agreement with Cincom Systems Inc - not in the group at present - to add SNA compatibility with AT&T's own Unified Network Management Architecture (CI No 950), to make it more competitive with the current market leader, IBM's NetView.

CONTROL DATA TO CLOSE FIVE COMPUTER PLANTS FOR A WEEK

Mainframe and supercomputer sales are so soggy that Control Data Corp is to close five plants for one week next month to reduce costs - but it doesn't expect to have to make any permanent layoffs. The week off without pay will affect some 2,500 employees at three of its plants in the Minneapolis area, along with plants in Sunnyvale, California, and Kansas City, Missouri. Although supercomputer sales are apparently not strong either, work will continue at ETA Systems Corp.

GOULD HAS FAST LINK TO CRAY

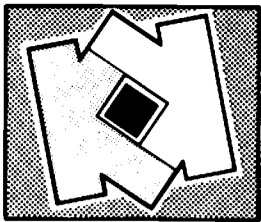
Gould Inc's Computer Systems Division in Fort Lauderdale, Florida has become the second minimaker after DEC to sign up with Cray Research Inc, to market a special high-speed communications link between its own computers and those made by the Chippewa Falls supercomputer maker. The communications link is described as part of a new product that Gould Computer calls the Supercomputer Front-End Processor, which is built around the company's NPL supermini. Called - take a deep breath - the Universal Input/Output Microengine/High Speed External Interface Adaptor, the link provides point-to-point connection between the NPL System Bus and Cray-2, X-MP and MP EA, and Y-MP Unicos systems. Tests suggest that the adaptor can transfer data, via the Cray HSX channel to the NPL, at 51Mbytes per second sustained and from the NPL, to the X-MP at up to 46Mbytes per second sustained, using 256Kb blocks. Forthcoming memory boards with 128-bit data paths should enable the system to improve performance 30% to 90% over that achieved in the tests. Gould says it is working with Cray and customers to define high-level software requirements that will enhance applications such as software development, mass storage management, pre- and post-processing, network management and scientific engineering visualisation applications. The new SFE computer system with U/IOM/HSX Adaptor is on 90-day delivery and costs \$285,000 in standard configuration.

.. AND GOULD'S VAX IMAGE PROCESSOR NOW SUPPORTED ON SUN 3

The Fremont, California-based Imaging and Graphics Division of Gould Electronics Inc says its IP9000 series image processor is now supported on Sun Microsystems Inc's Sun-3 workstation line. The IP9000 connects via Gould's optimised interface, which the company claims gives an input-output capability of 6Mbytes-per-second to Sun's VMEbus, "about six times faster than other image processors". Gould says that 1,024 by 1,024 colour images can thus be called up in half a second. The two-year-old IP9000 was developed primarily for use with DEC VAXes, but the Gould Base software and Library of Image Processing Software have now been adapted for SunOS Unix. The IP9000 image processor is from \$40,000 to \$150,000 depending on options; deliveries for the Sun-3 begin in September.

SLINN COMPUTER GROUP IS LATEST MORSEL FOR RAPACIOUS RADIUS Plc

As reported briefly last week (UX No 189), the UK's Radius Plc, based in Hull, has acquired Slinn Computer Group Ltd, a South Yorkshire Unix software and systems house. In June, the company agreed to acquire ICL software house MGB Computers and has made a string of other acquisitions since its flotation. Radius is paying with 708,230 new shares, 218,720 of which have already been placed on behalf of the vendor at 138 pence, to satisfy the initial consideration of £1m. An additional consideration, limited to £200,000 and related to profits for the year to December 31 1988 may also be paid. Radius has applied to the Unlisted Securities Market for permission to deal in the new shares issue. Slinn reported pre-tax profits of £111,442 on £2.1m for the year to December 1987 with a large part of its business being generated by sales of the Progress Unix generator.

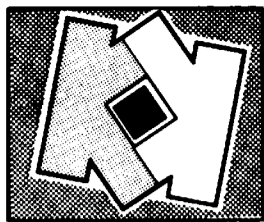


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No hard news yet on just what Intel Corp and Siemens AG joint venture Biin (UX No 183) is up to, but it is now boosting its 200-plus staff by recruiting from the two companies as well as outside, including another Unisys man - Edwin Gilbert - as vice president, worldwide marketing, who joins Biin chief and ex Unisys chairman Joseph Kroger: the joint venture is thought to be working on a line of fault tolerant computer systems using chip technology derived from Intel's object-oriented iAPX-432 microprocessor.

To the disappointment of resident supplier Northern Telecom Inc, the Deutsche Bundespost has named Siemens' EWSP for the \$37m expansion of its X25 packet switched net.

IBM's series of announcements last week included the shipment date of OS/2 Extended Edition, which is this Friday, July 29th: Extended Edition 1.0 includes the IBM designed Database Manager and Communications Manager to the already available Standard Edition 1.0.

Citing the still punitive memory chip prices, and customer demand for large configurations, Stellar Computer is raising price-tags for the GS1000 by 7 per-cent.

Commenting on its superb figures - net up 71% at \$91.3m on sales up 56% to \$993.1m, so that it just missed its first billion dollar quarter - an event now certain for the current, fiscal fourth, quarter, Apple Computer Inc says that 38% of its business in the third quarter was done outside the US, against just 26% a year ago.

And commenting on its second quarter figures - net up 16% at \$1.4m - Sequent Computer Systems Inc, Beaverton, Oregon says that it shipped 84 systems in the quarter just ended, all but one of them the top-end Symmetry system, where in the year-ago quarter, it sold 38 of the cheaper, National Semiconductor-based Balance systems.

Compaq Computer Corp has signed an agreement with Valid Logic Systems to use Valid's electronic design automation software, in order to build application specific integrated circuits for future Compaq products: Valid is currently porting its design and validation tools to run on Compaq's 386 series of micros.

Oracle Corp and Harris Corp's computer services division in Fort Lauderdale, Florida, have announced a new strategic relationship for joint marketing development and customer support, said to be valued at over \$1 million in Oracle products and services: Harris will offer Oracle's new Version 6 transaction processing database on its HCX and MCX Unix-based computers.

And Oracle Corp says it has placed an order, and will serve as a beta test site for a new high-end Harris Computer System that will be introduced later this year.

Apollo Computer Inc, whose second quarter loss of \$7.9m was right at the top end of its forecast range, said it was uncertain about the outlook for the third quarter, which is traditionally weak for the Chelmsford, Massachusetts workstation builder: the company, which lost \$2.9m in the third quarter last year, says that it will maintain its rate of funding for product development because it believes the long-term outlook to be bright.

Sun Microsystems Inc. and Auto-trol Technology Corp. have signed an OEM manufacturing agreement valued at \$10 million over the next 18 months: Auto-trol will market its Tech Illustrator and Integrated Digitiser electronic publishing systems on the Sun-3, Sun-4, and the new Sun386i workstation platforms: the Auto-trol software interfaces to publishing systems from such companies as Interleaf, Compugraphic and Frame Technology, and device interfaces such as the PostScript page description language are also be available on the Sun platform.

And Sun Microsystems has signed up with Polygen Corp for its research automation software products aimed at the chemical and pharmaceutical research industries, under Sun's third party Catalyst vendor program: the Polygen software offers molecular modeling, mechanics, dynamics and management services, and as part of the agreement, Polygen will adapt the Open Look user interface designed for AT&T by Sun, and move its software to the SunScalable Processor Architecture (SPARC) microprocessor technology.

Interphase Corp of Dallas, Texas has signed a two year contract with Convex Computer Corp valued at approximately \$2.5 million: under the contract, Convex will purchase the Interphase V/ESDI 4201 Panther, a high performance controller for ESDI disk drives and VMEbus-based computer systems: Interphase has signed a similar agreement with MIPS Computer Systems for disc controllers and the Jaguar host bus adaptor in its recently announced M/2000 machine.

There was widespread surprise that Roland Pampel should suddenly resign what looked like a plum job as president and chief operating officer of Apollo Computer last week - but all was explained on Friday when Honeywell Bull Inc announced that he was to succeed Jerome Meyer as its president and chief executive. Meyer is returning to Honeywell Inc, which operates in the US, the UK and Italy.

ICL has added a Direct Connect for VAX to its Oslan Open Systems localnet. It runs on a VAX host and enables users at terminals on a managed Oslan to use DEC VAX programs.

Following the example set by IBM, AT&T Co has set a virtual hiring freeze company wide and plans to move 3,000 people into sales and marketing from administrative and other positions. It took on 25,000 staff in 1987, 1,100 from college.

Despite disappointing worldwide results Alliant Computer Systems managed to surpass sales targets in the first two quarters of independent operation in Europe, according to a company spokesman; Alliant now has direct representation in seven European countries and shipped 15 systems to nine different countries in the first six months of 1988; as a result of the first half growth Alliant has announced it is moving its European headquarters to larger offices in Camberley, Surrey.

Making it clear that OS/2 still has a big credibility gap to bridge, in a poll of 5,000 professionals conducted by Byte Magazine at Comdex in Atlanta, 32% thought that the top personal computer operating system in 1992 would be OS/2, but 30% said it would still be MS-DOS.

On Monday July 18, IBM abolished the North-Central and South-West marketing divisions in the US: on Tuesday - or Tuesday, as the flackery preferred to call it - July 19, the company announced a string of RT products and signed off with "these products will be marketed through IBM's North-Central and South-West marketing divisions".

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MASSCOMP TO BUY CONCURRENT PERKIN-ELMER EXITS COMPUTERS

Fourteen years after it entered the computer business with the acquisitions of Interdata Corp and Wangtek Inc, Perkin-Elmer Corp has thought better of the decision and has agreed to pass its 82% shareholding in Concurrent Computer Corp, direct descendent of Interdata, on to Massachusetts Computer Corp, Westford, Massachusetts. Perkin-Elmer floated its computer business off as Concurrent two years ago to give the operation better visibility, but performance of the 32-bit minicomputer builder has remained lacklustre. The much smaller Masscomp, which specialises in high-performance scientific Unix supermicros, is offering \$20 a share for the Tinton Falls, New Jersey company: it proposes to change its name to Concurrent Computer and move its headquarters to Tinton Falls. Concurrent president and chief executive James Sims will become chairman, president and chief executive of the new company at the merger, which is expected to occur in late September. Masscomp's president Russell Planitzer, who is a partner in the venture capital firm of J H Whitney & Co, will reduce his role to board member. The acquisition will cost Masscomp some \$229m and there is no indication of where it expects to find the cash: the agreement is contingent on, among other things, its finding the cash it needs. Both companies are strong in real-time computing - Masscomp with its real-time extensions to Unix, Concurrent with the OS/32 operating system on its 3200 series of minis, which are widely used in the simulation business, where the main competition comes from Gould Computer Systems. Masscomp, with 700 employees, did \$74.6m in the year to June 1987, and reported a profit of \$2.5m on sales of \$58.4m in the nine months to end-March; Concurrent, with some 2,800 employees, did \$247.7m in the year to July 1987 and did \$10.9m net on turnover of \$201.8m in the nine-months to end-April, so the combined company should have annual sales of between \$350m and \$400m this year. Perkin-Elmer, which will revert to a pure instruments and semiconductor capital equipment company after the sale, will get \$188m for its Concurrent shares, and says that it will use the cash to buy in some of its own shares and for general purposes. It will post only a "very small gain" on the transaction.

ALLIANT LAUNCHES "VISUAL SUPERCOMPUTER"

Alliant Computer Systems is hoping to reap the rewards of its acquisition of graphics specialists Raster Technology Inc last February (UX No 168), with the launch of what it calls the Visualisation Series of visual supercomputers at the Siggraph graphics show in Atlanta, Georgia this week. The company claims that the new systems are the first to support simultaneous compute-intensive applications and high performance 3-D graphics, and by supporting automatic parallel processing of both applications and graphics, Alliant is claiming peak applications performance of up to 377 Mflops and graphics performance of up to 640 Mflops. Aware of the recent trend towards graphics superworkstations from the likes of Ardent, Stellar and Apollo, Alliant says that the four Visualisation models - VFX/4, VFX/40, VFX/80 and VFX/82 - will support simultaneous video displays for team-oriented environments, such as a team of engineers working on an aircraft, or chemists designing a new module. Applications processing is handled by Alliant's parallel vector computational elements (CEs), with simultaneous graphics processing carried out by graphics arithmetic processors (GAPs), tightly coupled to the CEs. Up to eight GAPs can be added; each GAP executes PHIGS (Programmer's Hierarchical Interactive Graphics Standard) and PHIGS+ as its native graphics instruction set. Alliant also introduced its VISEEDGE software package for 3D modelling, allowing various rendering, rotation, resizing and lighting options. The VFX Series runs Sun Microsystems' X11/NeWS windowing system, and Alliant is also offering a software compatible single-user model based on the Sun-4 workstation and Raster's GX4000 graphics accelerator. Prices range from \$75,000 to \$125,000 per graphics seat (£54,000 to £89,000 in the UK); add-ons from the FX/series are also available.

SUN-FUJITSU LINK UNDER NEGOTIATION

As we went to press, news came through that Fujitsu Ltd was negotiating marketing links with Sun Microsystems Inc, for rights to market Sun workstations in Japan under the Fujitsu name: but a report in the New York Times suggested that "a deeper relationship" between the two companies could be on the cards.

88OPEN PLANS MAJOR SOFTWARE PUSH

Motorola 88000 consortium 88open is planning a major software initiative, to be launched by the end of the Summer, according to 88open spokesman David Downing. Proposals for the venture were presented to the Group, which includes 34 hardware, software, embedded controller and telecommunications vendors, at the recent members meeting in Boston on July 21st, but have since "gone back to the drawing board for modification" according to Downing. Put together at Data General's Westboro, Massachusetts headquarters, the project is understood to be aimed at both the encouragement of software developers looking at the chip through providing technical expertise, and at more effective marketing of the new software, probably along the lines of the recently formed MIPS Computers Systems software consortium, Synthesis (UX No 173). 88open has already published a binary compatibility standard for software developers to ensure compatibility between different 88000-based software. Next month, 88open is expected to announce a new executive director, to replace the current acting executive director Roger Cady, and says it now has 34 members, although only eighteen have so far revealed themselves. Those who have declared their interest since the chip's launch back in April (UX No 176) are: Absoft Corp, Auburn Hills, Michigan; Incremental Systems Corp, Pittsburgh, Pennsylvania; Language Processors Inc, Framingham, Massachusetts; Flashpoint Computer Corp (McLean, Virginia); and Sanyo-owned Icon International, of Orem, Utah.

CYDRONE LAYS OFF 42%

Prime Computer's decision to abandon the minisupercomputer market is a body blow to its partner Cydrome Inc in Milpitas, California, which laid off 59 of its 140 staff on Monday. Our man on the spot adds that Cydrome insiders are saying that if the company cannot cut a deal with another company similar to the one with Prime within 90 days, or find another bid source of sales - in Japan perhaps, it will likely have to close its doors.

ORACLE CORP EXPLAINS WHY IT BELIEVES RELEASE 6 WILL BEST ALL COMERS

By Sophie Hanscombe

In the week that saw the launch of DEC's new DECtp transaction processing environment, Belmont-based Oracle Corp decided to add further confusion to the current benchmark brouhaha by releasing the "record busting" Version 6.0 of its relational database. Clearly captivated by claims of being in the fastest growing segment in the world's fastest growing market, the company chose to describe the latest release as the world's fastest relational database - and proceeded to expend considerable amounts of time and energy justifying the tag. Describing the product as the solution to the great database dichotomy - the good performance-low productivity of the "heaving, wheezy" old database versus the greater productivity-lower performance of the existing relational database products - Oracle argued that Version 6 had set a new series of world record performance levels in all the major transaction processing environments.

Cost-performance

On an IBM 3090 mainframe running under MVS, for example, the company claimed processing speeds of 265 tps, clearly knocking the Tandem NonStop SQL record of 241 tps from the top spot. In a DEC environment, Oracle claims Version 6 clocked up 49 tps on a VAX 6240, beating the Sybase 29 tps track record, achieved on the more powerful 8800/8700 VAX cluster. Oracle also claims the all-time Unix record, registering speeds of 110 tps on a large Sequent supermicro, eclipsing even the 104 tps of Sequent's experimental Silver Bullet prototype. Equally challenging are the company's cost-performance claims. With dollars per transaction figures for Version 6.0 ranging from \$7,000 for the Sequent box, to \$47,000 on the Amdahl 5890-600E, Oracle's product certainly appears a cheaper bet than rival Tandem's NonStop - \$48,000 on the 1601 - or IBM's quoted \$57,000 for DB2 on a 3090-600E. Oracle appeared at pains to reinforce the validity of its performance achievements by offering an in-depth explanation of the TP1 benchmark. The TP1 test is modelled on what happens when one customer deposits money in an account - essentially three updates and one insert - and lays down a number of testing specifications. According to Oracle, however, all kinds of tricks can be employed to make performance results appear more impressive than they really are, with size of database, choice of languages, the use - or not - of multi-processors and the way in which the percentage of transactions meeting the sub one second response time target is measured being the most obvious criteria open to manipulation.

Oracle's clear conscience is based upon its use - as stipulated - of a fully scaled, 5m row database, SQL DBMS and C non-proprietary application language, a four-way multi-processor, and the auditing of the 99.9% sub second response rate by the "reputable" Codd and Date. The company explained the estimated five to ten times performance improvement over Version 5.0 by a series of technical feats, which also enhance the product's real-world application credibility. The aim of the three year Version 6 development programme, explained Oracle's David Martin, was to provide simultaneous support for both transaction processing and ad hoc managerial type enquiries. Key and unique feature to this end is the development of row-level locking - a "sophisticated" mechanism that removes the most common of database bottlenecks by ensuring that when a data row is being changed, or reserved for subsequent modification, only that particular row is actually locked. Competing products currently use page level locking, blocking other users from access to a whole page of data at a time. Similarly, the introduction of a multi-version read-consistency con-

-trol technique ensures that, by automatically reading a "snapshot" of old data, Version 6.0 users are always able to query or report without delay.

The "elimination of the last real world bottleneck" comes in the shape of the no-wait sequence number generator, which presents every user with a new order number as and when they access the database. Normally, order numbers are redistributed from user to user, with number release dependent upon the completion of the "first" user's operation. Oracle admits one disadvantage - namely that when users change their minds, gaps are created - but argues that this is outweighed by the obvious advantages. The product's high processing output - and portability - is also ensured via its multi-server architecture. Essentially, the fifteen database servers within each central processing unit can be spread between users, allowing performance levels to be maintained as loads change.

Fast Commit

Tests run on the DEC VAX 6240 show near linear scalability with the introduction of additional processors; the 11 tps recorded on a single processor increases from 21.7 tps on two processors, to reach 32.0 tps on three, and 42.0 tps with the maximum four. Finally, Oracle claims that it has "substantially" reduced input-output contention - the downfall of Version 5.0 - with the introduction of "fast commit" - one disk write to perform one or more transactions - and "piggy backing", allowing data to assemble and stay in memory for as long as possible before being moved as a whole page. As far as fault-tolerance is concerned, the product now offers on-line database administration facilities, comprising on-line back-up and recovery, and provision to perform functions without shutting the system down and interrupting users. Operations continue on other disks if one disk fails, and a failed disk can be brought back into service by the administrator if it isn't too far gone; mirror disks are also supported by Oracle if the operating system supports them - VAX/VMS does. If a processor fails in a loosely-coupled multiprocessor, Oracle supports transfer of the workload over to another CPU in the cluster running Oracle. And if a network or network node fails, operations automatically continue to function on a distributed system. Version 6 is in limited distribution release, with full production anticipated in three months time. OEM deals have already been signed with Sequent, Prime Computer, Harris Corp, Arix Corp and Control Data. Oracle is now concentrating on developing releases for VM/CMS, Sun Microsystems, Pyramid Technology, Hewlett-Packard MPE, Data General AOS/VS, Apple Macintosh, and for MS-DOS and OS/2.

HP ADDS ENTRY-LEVEL GRAPHICS SYSTEM

Hewlett Packard is moving its graphics accelerator technology down to its low-end workstations, beginning with the launch this week of an 3D SRX version of its HP 9000 Model 319. With a standard list price of £20,000, HP claims that the 68020-based systems half the price of entry to SRX technology, which is also available on the 9000 Model 350 and 68030-based 360 workstations, and top-end 825 and 835 Risc workstations. Included is a 16" colour monitor, eight planes of frame buffer memory, 4Mb RAM, 16-bit Z buffer, keyboard and software licences to use HP-UX (Unix) Network File System and NS/ARPA. Performance is rated at 70,000 3D vectors per second. HP Product Manager David Lyon said that the 2D CRX accelerator and Turbo-SRX ray-tracing extensions would be offered on the Model 319 over the next few months.

...AND PLANS 33Mhz 68030 WORKSTATION

Hewlett Packard is to follow rivals Apollo with its own top-end 68030 workstation using a 33Mhz 68030 processor. The HP 9000 Model 370, running HP-UX Unix, will be rated at 7 MIPS, and is due out "later this year", said the company. Plans for the new system were revealed at the recent Design Automation Conference in Anaheim, California, where HP said it would be broadening its HP DesignCenter range of design automation tools. HP also announced its LaserRETRIEVE package for publishing and accessing information on compact disk read-only memory, incorporating data-preparation and retrieval techniques from Fulcrum Technologies of Ottawa, and said it would use the system to issue a CD LaserROM containing HP-UX operating system support information and documentation.

SIEMENS WORKS ON FREE-FORM 3D CAD AT CAMBRIDGE RESEARCH CENTRE

Siemens Ltd is developing a new range of CAD/CAM software products for 3D free-form surface modelling. Based on the Romulus Parasolid algorithm library which it has bought in from Evans and Sutherland company Shape, Siemens will integrate the tools with its own Sigraph and Cadis 3D software. The work will take place at a newly establish research and development centre in Cambridge, which will employ 20 software experts working on a range of Siemens equipment, including its re-badged Apollo workstations: previously Siemens has carried out all CAD/CAM software development at its West German research centres in Munich and Nuremberg.

MEGATEK USES SUN BASE FOR MOVE INTO WORKSTATIONS

As reported briefly last week, graphics terminal specialists Megatek Corporation of San Diego, California, has made a move into stand-alone workstations by adding its own specialist hardware on top of a base from Sun Microsystems. Fifteen-year old Megatek, part of the \$6 billion United Telecom Group, revealed its OEM deal with Sun last month with the launch of its Sigma 20 workstation range - and has now opened a European office in the UK, at Basingstoke in Hampshire. Megatek president and chief executive officer Bob Benders claimed that Sun could not offer the higher level graphics functionality and performance offered in Megatek's graphics terminals - and so the company took Sun's cpu and Unix platforms and added its own specialist hardware, such as a display list memory that disassociates graphics data and system memory, and parallel frame buffer. Megatek has a range of systems, based on the Sun 3/60, 3/200 and Sparc-based 4/200 workstations, although Bender said that most future generation systems would be based on the Sparc., "We are anticipating 20 MIP devices very quickly", said Bender, who claimed that the Megatek systems "were not simply graphics accelerators". The current low-end Sigma systems will be priced at £20,000 in the UK, with Sparc-based systems starting from £35,000. The workstations will run standard Sun software, but need a graphics driver to utilise the high performance graphics subsystem. Bender anticipated that the Sigma range would generate \$5 million business over the next calendar year, and account for over half of the company's business by the following year. Megatek recently won a contract from the UK's Ministry of Defence for its proprietary 9300 graphics systems for the MOD's Sea Systems Controllerate in Bath, and is working on tempered versions of the Sigma workstations.

ICL WINS £1.2 MILLION MOD RHINE CONTRACT

ICL has won a £1.2 million contract from the Ministry of Defence for office automation systems at the British Army of the Rhine headquarters, Rheindahlen in West Germany. ICL will supply £1.2 million worth of DRS 300 hardware running OfficePower software under Unix, along with laser printers and fibre optic links between terminals and the existing Series 39 level 60 mainframe. The installation should be complete by September. ICL has already supplied a similar system, codenamed Lion, to the RAF headquarters in Germany, and has been named supplier of the MoD Landscape project to automate the British Forces' land-based equipment procurement procedures.

ALTOS WINS AKHTER OEM DEAL WORTH £7.5M

Having set up a strong VAR and dealer network in the UK over the last few years, Altos Computer Systems Ltd is increasingly looking towards OEM deals for further business - and has now signed Akhter Computers Limited of Harlow in a contract said to be worth £7.5 million over the next few years. Part of the recently re-organised Akhter Group Plc, Akhter Computers will use the Altos Series 1000 and 2000 386-based machines to extend its own Regent Series of 1-8 user systems, taking it into the 8-64 user market for the first time. The Altos hardware will be sold under the Sovereign label, and Akhter said it would be now concentrate research and development efforts on products outside the Altos range in order to extend the Sovereign series. Altos UK has an existing OEM agreement with Systime in Leeds, and Marketing Communications Manager Barry Forrest said that the eventual aim was for the company to build shipment levels up in order to make a European manufacturing operation viable. Around 50% of Altos' business now comes from Europe, claimed Forrest.

WYSE AIMS FOR MULTI-USER MARKETS WITH NEW MICROS

Wyse Technology has launched two new 80386-based multi-user systems: the WY-3216-150T for up to 12 users; and the WY-3216-85T for up to eight users. The machines have 150Mb or 85Mb ESDI disk drives, with the 150T priced at \$8,599, and the 85T priced at \$7,999 - previous Wyse machines had a top capacity of 40Mb mass storage. Both models include 60Mb cartridge tape, 1Mb main memory, and floppy disk drive. Wyse is giving its resellers the option of adding Santa Cruz Operation's Xenix operating system, which it licensed from SCO back in January, and according to Wyse vice president of marketing, Jeff Hudson, the new systems are the second step in the company's bid to become a major player in the multi-user marketplace. Wyse claimed fifth place among suppliers of 80386-based systems in 1987, according to figures from IDC.

BIG THREE CHIPMAKERS TO SHARE INMOS WITH THORN?

There was no firm sale agreement behind all the excitement in the Thorn EMI Plc share price last week, but we now believe that the company is fairly close to an agreement for the sale of a majority stake in its Inmos International Plc - and that 75% of the equity will be shared by the Big Three European chipmakers - Siemens AG, SGS-Thomson Microelectronics and Philips NV. It seems likely that the continentals will each take 25%, leaving Thorn with 25%. Agreement is expected to be reached within a couple of months. Inmos customers include Eastman Kodak Co for facsimile and printers, and for the Colour Look-Up Table graphics processor, or CLUT, both Compaq and Amstrad are thought to be committed. Nixdorf Computer AG also plans to use Inmos chips, and is now also a candidate for an equity stake. Inmos also seems set to land a new blue chip reference client in the shape of AT&T Co: word is that AT&T plans to use the Transputer in a new public telephone exchange.

BII N PRODUCTS READY "BY YEAR END"

BiiN, the joint Intel-Siemens venture to develop fault-tolerant systems, has signed a string of senior staff and is now promising product manufacture and announcement by the end of the year. The company, which now numbers some 200 people, has tapped Edwin Gilbert, formerly chief financial officer at Unisys, as vice president marketing and sales. BiiN president Joseph Kroger is also ex-Unisys. In addition, a series of executives have been drawn from Siemens and Intel into the new company: Konrad Mayer, formerly of Siemens, becomes vice president and general manager for BiiN Europe. Intel's Randolph Young becomes BiiN Operations Vice President; Hans Schwarz, already heading the Siemens part of the software design for the new machines, becomes vice president, systems engineering. Also from Siemens is new VP and chief financial officer Anthony Bamber, while James Higgs moves over from Intel to become vice president of human resources. The company says it is on schedule to announce its product range - which is likely to compete head-on with Tandem, Stratus, IBM and DEC for a wide variety of high-availability applications - before the end of 1988. Clarifying the confusion over the relationship of BiiN to an early Siemens-Intel collaboration over Intel's iAPX-432 chip, a spokesman said that that project had proved too ambitious for the technology then available, but that some of the development staff had subsequently been shifted into the project to develop the BiiN architecture. BiiN remains extremely tight-lipped about its product range, although it will include Unix to some degree. Systems are to be built in both the US and Germany - BiiN's European headquarters is in Nuremberg - and BiiN will use the manufacturing resources of Intel and/or Siemens for the purpose: it points out that the two giants already have more spare manufacturing capacity in Germany than BiiN expects to need. BiiN also expects to use the service and maintenance facilities of Intel and Siemens, but is keen to emphasise its independence, since it is likely to seek alliances with manufacturers that could well be competitors for its parent companies. It says it will be taking a wide range of different routes to market, from direct sales to probable OEM deals.

UNISOFT TO PORT CLIPPER SOFTWARE

Aware that its efforts to establish the Fairchild/Intergraph Clipper risc processor could flounder through the lack of standard software for the chip, Intergraph Corp has appointed the Unisoft Group as its porting house for systems and applications software for the chip. Unisoft will provide the software to companies developing Unix computers based on the Clipper. Current customers include Intergraph itself, Ocean Electronics, and Opus Systems in the US, Bayer in Germany, and High Level Hardware and benchMark Technologies in the UK. The Clipper is manufactured solely for Intergraph by Fujitsu.

MEMORY UK TO MARKET CONVERGENT HARDWARE

Convergent Technologies has added a third direct sales arm to its operations in the UK by an agreement with Memory Computer Systems Ltd, the UK subsidiary of Memory Computer in Dublin, Ireland. The company, which has been selling Convergent hardware since 1983, says that its volumes of shipments now justify the direct agreement, which involves the full range of products, including the NGEN line, S/Series and Server PC ranges. Memory's David Spicer said that sales would be targeted towards office publishing (with the CTOS range), communications and networking installations, and at customers migrating from non-Unix hardware. Memory has what it calls a "transformation" centre at Alderley Edge, Cheshire, and uses Universe Basic for DEC PDP users, VMark's Pick under Unix package (also called Universe), and is in the process of preparing other "IBM attack products". Convergent sees the deal as boosting its sales through Memory's specific software packages, and giving it a presence in Ireland, where Memory is the Irish member of the Sphinx Ltd inspired International Consortium for Open Software. But Spicer said the deal would not affect the company's anticipated joint marketing venture with Olivetti, with Convergent sales in the UK remaining the primary focus of the company's Unix business.

TANDY ADDS THREE MICROS

Tandy Corp has expanded its personal computer offerings with three new keenly-priced models, with new Tandy 1000s that include a speech processing feature that supports enter, record, edit, store and play back. The new Tandy 4000 LX uses the 20MHz version of the 80386 and is pitched for Xenix and MS-DOS. The AT-bus box is \$4,000 with 2Mb and no disk. For next year, the 3000 NL uses a 10MHz 80286 and is \$1,700 with seven AT slots and a 3.5" floppy is standard. The 1000 TL also uses the 80286 and costs \$1,300 with 640Kb and 3.5" floppy, while the 8086-based SL is \$900 with 384Kb and 5.25" floppy. Each has the speech processing feature. Both also have MS-DOS 3.3 and Tandy's Deskmate embedded in ROM.

CONVEX EXPANDS C SERIES

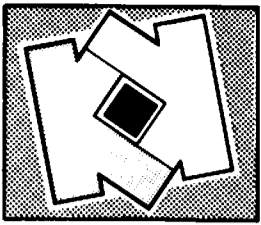
Convex Computer Corporation has added two new systems to its C Series family of supercomputers: the C201 and C202 series of mid-range parallel systems. The C201 is a single processor system, rated at 23 Whetstone MIPS, and is expandable to the C202 by adding an additional processor into the cabinet for a performance of 46 Whetstone MIPS. The processor in the C202 is coupled with main system memory via a 145 megabyte per second memory bus. Price for the C201 starts at \$495,000, and the company says that numerous orders have already been taken, and machines shipped. The C202 is set for first shipments in the fourth quarter.

WANG REVEALS FIRST TRUE UNIX MODELS IN VS5000

Unix on the Wang VS Series is at last looking like a serious option following the long-awaited replacement of the company's low-end single-digit models with the new VS5000 family. Wang Laboratories hired Interactive Systems Corp, Santa Monica, California, to port Unix to its proprietary chip, the first single chip CPU implementation of the VS processor, which was developed in conjunction with VLSI Technology Inc. (in which Wang is an investor). VLSI is currently making the chip in 2 micron CMOS, but will shrink it as the need arises. There are currently four models; the 5000/30 and 40, clocked at 25MHz, the 5000/50 at 28.6MHz, and the 5000/60 at 33MHz. The pipelined chip uses a similar design to NCR's NCR 32 with a reduced set of micro-instructions with multiple parallel operations, assembled into macro instructions to implement the VS (IBM 370) instruction set. A new 20Mbyte-per-second Information Bus is designed to maximise inter-processor communications, and is claimed to be 50% faster than the VAXBI bus. Wang uses an input/output co-processor subsystems to offload the CPU. Although the main emphasis appears to remain with Wang's proprietary VS operating systems, with key applications such as the PACE fourth generation environment not yet ported to Unix, Wang is hoping that the Unix option will come in useful for its government and defence business - and the company says it will be encouraging those VARs that want to migrate across. The new machines offer four times the power of the entry-level VS 5E, but is said to be 32% cheaper. A typical six user entry system is £13,000; for 60 users: £140,000 up.

INTERNATIONAL SALES KEEP DEC GROWTH STRONG

DEC turned in a fourth quarter substantially better than expected in volume terms last week, with turnover up a hungry 25% at \$3,340m while profits rose 6% to \$401m: the company says that while it experienced "the same lacklustre tone of business in the US", overseas performance was "particularly robust". Most striking is that the strong fourth quarter growth shot the company past Unisys Corp into second place in the US ranking, third behind Fujitsu Ltd worldwide, with turnover for the year of \$11,480m, which underlines the problems Unisys Corp faces in putting the lumbering leviathan created by the combination of Burroughs and Sperry onto a growth tack - DEC was an \$8,500m company when Unisys was born as a \$10,000m company - but two years later, Unisys is still a \$10,000 company. Commenting on the figures, DEC says that international business "flourished", and that it accounted for a full 50% of the total: the company also says that it shipped 12,000 workstations during the fourth quarter and 30,000 during the year.



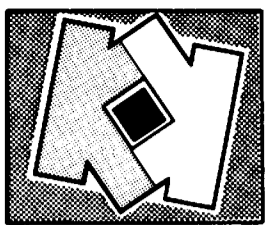
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Pixar Corp is using this week's Siggraph graphics exhibition in Atlanta, Georgia, to announce a developers programme for users of its RenderMan software, described by the company as a "three-dimensional scene description interface": Pixar hopes to encourage software developers to build products incorporating the RenderMan interface, and will demonstrate its Developers Toolkit which is claimed to enable certified developers to adapt their modeling systems to produce photorealistic renderings: the product received widespread endorsement from the workstation and graphics industry when details were first announced back in May (UX No 181).

- 0 -

Motorola Inc has pointed out that the Cypress Semiconductor figures comparing the 33Mhz Sparc and Motorola's 88000 Risc chip quoted recently (UX No 186) are inaccurate: the \$6,885 price tag of the Motorola chip refers to the Hypermodule ECL implementation rated at 50 MIPS (compared with the 20 MIPS Cyprus rating), and the standard chip costs \$2,100, against \$2,984 for the Cypress chip: Motorola also says the die size of the chip is 6 square inches, considerably smaller than the 23 square inches taken up by the Cypress Sparc.

- 0 -

Nixdorf Computer has announced a new supermicro: the Targon /31 Model 10, a 68020-based system for up to eight users, with I/O and peripheral processor to offload the cpu: a typical configuration with 4Mb memory and 80Mb disk storage, costs under £12,000, says Nixdorf.

- 0 -

The importance of Interactive Systems Corp to the computer operations of Eastman Kodak Company, Rochester, New York, has been underlined by the appointment of Dr John White, Interactive's chairman and chief executive officer, as vice president and general manager of the Kodak Software Systems Division: White will take on overall responsibility for SSD subsidiaries such as consultancy and software company Yourdon Inc, network integration specialists Enterprise Systems, federal government software suppliers Aquidneck Data Corp, and Kodak's Systems Architecture Center, as well as Interactive Systems itself.

- 0 -

Adobe Systems Europe, which currently distributes its products in the UK through Letraset Ltd, has now signed up an additional distributor, London-based Appropriate Technology: the company will distribute the Adobe Illustrator 88 desktop publishing package along with type libraries and publishing packs for IBM PC and Apple hardware: Adobe, the author of the Postscript and Display Postscript description languages, recently revealed its membership of the Open Software Foundation (UX No 188).

Privately-held Plexus Computers Inc, the San Jose firm that has moved away from the general purpose Unix marketplace to major on optical disk-backed Unix office automation systems, laid off about 50 of its 270 employees on Friday - mainly in international operations and US sales as it turns to third party resellers.

- 0 -

Altos UK has also introduced the 20Mhz version of its top-end 80386-based Series 2000, already out in the States (UX No 186): with 380Mb ESDI disk drive and streamer tape back up the price is £41,950. The company has also upgraded its Series 1000 from an eight to sixteen user system, priced at £19,450. Both systems use the Altos System V/386 operating system, which merges the functionality of Unix and Xenix.

- 0 -

Although vendor specific shows mostly seem to fall rather flat these days, we can expect at least two during the winter show season: Unisys Corp will be holding "Open Systems World" at the Kensington Exhibition Centre on November 22-25th, closely followed by Altos December 7-9th: both will include a programme of seminars.

- 0 -

Troy, Michigan-based Engineering Mechanics Research Corp (EMRC) has entered into a strategic partnering agreement with Sony Microsystems Corp: the a value-added-reseller agreement, said to be worth \$5 million in the first year, will allow EMRC to bundle its Nisa and Display finite element analysis software with Sony's News workstations selling to mechanical and structural engineers, with Sony helping with sales, support and installation.

- 0 -

Intergraph Corp has won a \$6.9 million contract from the US Air Force's Aeronautical Systems Division for computer-aided design equipment, including 54 Intergraph CLIPPER-based engineering workstations to be delivered over a three year period: the systems will support aerospace design, engineering and manufacturing applications at the Wright-Patterson Air Force Base in Ohio.

- 0 -

The Santa Cruz Operation and Archive Corp, Costa Mesa, California, have announced jointly developed Xenix 286 and 386 device drivers for Archive's 60Mb ST600/FasTape and 150Mb VP streaming tape drives for SCO Xenix System V: they are available from Archiver and SCO at no charge.

Just as BSD Unix started as a research project at the University of California at Berkeley, so might the latest field of research at the University result in software released into the public domain, according to Dr John Ousterhout, quoted in Microbyted daily: a project concerned with the storage, communication and manipulation of very large amounts of information has been the subject of a \$3.8 million award from the National Science Foundation, and projects include Ousterhout's Sprite Unix-like operating system and the Dash global high-speed network project, as well as a hierarchical storage system to be based on an experimental information server with 80 MIP processor, 1 Gb primary memory, 1 terabyte of optical disk storage, and 100 high capacity disk drives.

- 0 -

Silicon Graphics Ltd is promising extensions to its workstation range in the UK at the Computer Graphics Show in Wembley, October 11-13th: it promises a low-cost 3D graphics workstation, a multi-processor workstation to extend the range upwards, and will show the recently launched 4D 50 MIPS Risc-based workstation, which has an entry-level price of under \$40,000.

- 0 -

And the new 4DDN protocol from Silicon Graphics now allows Iris workstations to be integrated into DEC's DECnet environment: cost in the UK is £1,953.

- 0 -

Unify Corp is talking with its French distributor Oriane about setting up a joint venture operation, Unify France: the new company is likely to come into being early in 1989, and according to Unify, will boost the European market for the company's products.

- 0 -

Floating Point Systems, which recently acquired Celerity Computing Inc of San Diego (UX No 179) in a deal worth around \$2.5 million, says it will be integrating parts of the Celerity technology into existing FPS systems, and gave strong hints about "a major new product announcement" from the FPS headquarters in Oregon: apparently, the company's 100 strong worldwide sales force is to meet in Portland, Oregon for a product training course during August.

- 0 -

Quantum Information Systems, Rotherham, UK, has signed a £0.5 million deal with Integrated Micro Products Ltd to act as a distributor for the IMP JT-68030SBC range of processor boards: Quantum are also building the boards with intelligent I/O processors into a new multi-user Unix system for 8-64 users, due for launch soon.

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USERS MAY BRING OSF-AT&T SCHISM TOGETHER

TALKS IN PROGRESS-RECONCILIATION COULD BE NEAR

Pressure from federal government users with large Unix-based contracts in the pipeline is likely to bring about some sort of reconciliation between AT&T and the Open Software Foundation within the next few weeks, according to industry sources. Following last week's Uniform/DC conference and trade show in Washington, which was a focus for government and commercial business in the US, speculation has been growing that a deal is in the making. This was confirmed at Uniform by AT&T Vice President of Information Technology Development Bill O'Shea, speaking last Tuesday at the keynote speech. "We are currently in discussion with the Open Software Foundation in order to reach some sort of agreement", said O'Shea: "we would be remiss in our responsibilities to the industry if we did not actively work with the OSF to achieve a single standard". OSF spokesman Gary McCormack later agreed that discussions were taking place, but said talks were "perhaps best described as explorations, though we are seeking a common goal". The US Federal IT Budget has been estimated at \$17.4 billion in 1988, and individual contracts such as the US Treasury TMAC contract for office automation of the IRS, Secret Service, Customs and US Mint departments now specify "standard, full function Unix". Vendors in both the AT&T and OSF camps fear that a split-standard will not be acceptable to the procurement bodies. According to Dr Pamela Gray, /usr/group President and Chairman and Chief Executive of Sphinx Ltd, "the mood is that OSF and AT&T need to be working together if we are to get to one standard", said Gray. "Users are now pushing on every front to get the standards efforts done. No-one will be hanging around - the firmer and tighter the standard is the better".

NOW BRITISH TELECOM IMPLEMENTS ITS OWN MULTI-MILLION "CHOTS" PROJECT

With the Ministry of Defence close to announcing the two consortia who have won through the first evaluation for its CHOTS office automation project, British Telecom has made the timely announcement that it will be implementing its own, 60,000 user office automation system which is based firmly on the work it has been doing for CHOTS. COAST, Common Office Automation System for Telecom, will be implemented over the next ten years using the Uniplex Business Software suite - which is being bid by three of the four CHOTS contenders - and BT Fulcrum's M6000 Unix machines, Zenith-sourced M5000 PCs and M1779 terminals. In a move likely to be followed by other members of the various CHOTS consortia, BT says it will also bring the COAST system to market later this year. Systems from BT's CHOTS partners Nixdorf and Honeywell Bull are also being considered to span the necessary performance range and security requirements of COAST. The project will result in one of the largest distributed office automation systems in the world, is estimated to cost between £25m and £30m a year through the 1990s, and will provide BT users in the UK, US, Europe and elsewhere with mail, word processing and diary scheduling. They will be linked by both local areas networks and BT's Internet wide-area packet switch network, intended to carry voice as well as data. In a further resounding endorsement of OSI and Unix, BT's director of Computing and Information Systems Dr John Spackman said BT was going "all out" for OSI-compliant networks and Unix-based departmental systems and expected to cut its computing system procurement costs by at least 10%. Following a pilot implementation, COAST is set to be installed in each of BT's 28 UK districts and in the HQ of the UK Communications division. Despite its involvement with Uniplex for CHOTS, BT is also understood to have looked at Uniplex' arch-rival Quadatron's Q-Office. The MoD is said to be due later this month to announce the two consortia, out of the four original competitors, who have won the right to build competing CHOTS prototypes - only one of which will be selected as the basis of the £350m system. The other consortia are led by GEC Telecommunications, ICL - which is bidding OfficePower, and Software Sciences.

INTEL PROMISES UP-MARKET 80486 NEXT YEAR

Intel Corp officials have been talking about the next chip in the iAPX-86 family, the 80486, with senior vice president Dave House saying that it will be out next year, and chairman Gordon Moore stressing that the part will be aimed at high-end applications and not the mass market. One reason for that is that the company does not have the capacity to make the 486 in the volumes it is churning out the 80386. Intel also made clear that the 80486 is seen as a premium product with an implied premium price-tag. The CPU is believed to be tailored to large-scale parallel processing - Intel has also said in the past that it will be optimised for artificial intelligence applications (UX No 90,138,159) - and according to Electronic News, Boeing Co, Hughes Aircraft and Unisys Corp already have samples.

DECWINDOWS OPEN TO THIRD PARTIES

DEC has revealed plans to licence its X-Windows-based DECWindows user interface software to independent software vendors and other hardware manufacturers. DEC's X User Interface (XUI) software is already out in pre-release versions to ISVs, and the company says it is being used to develop X-based applications for Ultrix and VMS hardware. Interleaf, McDonnell Douglas and Relational Technology Inc are among those planning to use XUI in their applications. The tool will allow ISVs or end users who wish to develop products with a DECWindows style "look and feel" on any processor, and both software and license will be offered by DEC for the cost of the software media. DEC says it is also working with several hardware vendors interested in XUI, and has also offered the product to the Open Software Foundation as the standard user interface within OSF's open software environment. XUI includes a style guide document specifying DECWindows user interface conventions; a toolkit for building easily customised user interfaces conforming to the "look and feel", which is layered on the standard Xlib and X Toolkit libraries; a window manager for moving and resizing windows; and the user interface language, which separates the user interface from the application. The DECWindows programme will be extended across VMS, Ultrix and MS-DOS-based hardware, and will include any other hardware supporting X, such as the Apple Macintosh and OS/2-based systems.

UNDERSTANDING TRON - 2 THE CURRENT STATE OF PLAY

by Geoff Conrad

Prototypes of the I-Tron industrial variant of Japan's Tron operating system have been implemented on a number of existing chips, to test the specifications and real-time capabilities, and some have been commercially available in Japan since 1986. Hitachi has a product based on the 68000 microprocessor with a very fast - 80 microsecond - response time to external interrupts. It comes with a C language interface library to aid application development, and a task-oriented debugger. Fujitsu has a system based on the 80286 which uses the built-in memory management unit.

It implements a superset of the I-Tron specs, with added system calls to support the memory manager. Mitsubishi developed the RX116 microprocessor as a testbed for the I-Tron specification (with added functions) but had to add an external interrupt controller to handle nested interrupts. However, it became the first commercial I-Tron product, linked to a co-processor running MS-DOS, as the RX116 does not have a file system.

64-bit addressing

NEC went on to develop a 32-bit implementation for its V60 microprocessor - the 16-bit bus version of the 32-bit V70 - with added access protection and fault tolerant support. Although these implementations worked well enough to be released as commercial products, the full benefit of hardware and software being developed and optimised together will only be seen when the current range of 32-bit CMOS chips become available later this year or early next year. The Tron processor specifications will only really come into their own with a 64-bit architecture: address bus, data bus and registers. The Tron designers are convinced that 32-bit addressing - a 4Gb address space - will soon be made obsolete by increased demand for memory, especially for artificial intelligence applications. And that machines will soon have more than 4Gb of real memory: "The capacity of memory devices increases twofold every two years, so today's 1M memory chip will have developed into a 32M chip by 1997. And it will take only 1,024 of these chips to realise a 4 Gigabyte memory." But recognising the limits of current technology, the definition includes subsets for 32-bit and 48-bit architectures, but they are designed to be upgraded to 64 bits. Similarly, the standard system bus, the Tobus, can be expanded to 64 bits. It performs asynchronous transfers, uses a distributed bus arbitration method and is fault tolerant, with functions and self-diagnostics. The double and triple redundant bus Tobus is designed to take all the co-processors and support chips that will be needed until higher levels of VLSI integration have been achieved, for example a trap processor, cache memory management unit, translation lookaside buffer. An I-Tron implementation designed to be used as an embedded controller might have no use for a memory management unit or translation lookaside buffer to implement virtual memory, but would use the space on the chip for a large cache memory to speed context switching (the instruction set contains high-level instructions to support fast context switching) - vital in real-time processing. Other high-level instructions implemented for the I-Tron operating system efficiently manipulate the ready queue and wait queue to further speed up the response time. Similarly, the instruction set for the B-Tron workstation version includes high-level instructions to support the bit map processing needed to move and compute data for windows efficiently. Even if a graphics co-processor has to be used for the more advanced graphics processing, using it to control the windows on the screen would tie up a lot of the bandwidth of the Tobus, possibly slowing down memory accesses or input-output.

The Tron processor uses two types of instructions. It has normal Complex Instruction Set Computer-type instructions for the high-speed execution of frequently-used instructions. These either use simple addressing modes or involve register-to-register operations such as arithmetic. (The processor has 16 high-speed registers which can be either 32 or preferably 64 bits wide.) The Tron compiler, as part of its optimisations, tries to rewrite each instruction into a short-format RISC-type and recalculate each address into a simple mode. These relatively simple optimisations, done after the more complex structural optimisations, enable the compiler to produce compact object code that executes at high speed. When it comes to the Tron microprocessors (as opposed to the instruction sets, operating systems or simulations) commercial rivalry rears its ugly head and misinformation, obfuscation and inscrutable confusion reign. Either three companies or 50 are developing VLSI parts. They are called the G-Micro/100/200/300 or the M32/H32/F32. And either.... What is certain are the instruction set and five levels of CPU specifications:

- * Level 0 stipulates the requirements that all Tron processors must satisfy, such as register set, most of the functions of the instructions, and the bit pattern of the instructions.
- * Level 1 designates requirements that most Tron processors must meet - the only exceptions allowed are special-purpose co-processors or auxiliary Tron processors.

- * Level 2 designates specifications for functions too advanced to be implemented with current technology but will be needed in the future, such as instructions to manipulate and convert multidimensional arrays.

- * Level X stipulates the additional instructions and resources needed to extend to 48- and 64-bit environments, such as 64-bit arithmetic.

- * Level 4 contains the rest - anything that has been forgotten, and instructions or resources that turn out to be needed in the 1990s, and any control registers or privileged instructions that the extended operating systems turn out to need. Each Tron chip must comply to a certain level, and be compatible, in terms of object code, with chips from other manufacturers in the project. The specifications say nothing about whether a memory management unit, translation lookaside buffer or cache memory should be implemented on the chip, only that the chips must be able to communicate with the Tobus. The specification for the Tron memory manager, (which can be omitted or amended) provides paging and a four-level ring protection, with a 4K-byte page size. Ring protection can be specified for every page. The page table entry has bits to indicate the presence of a page in main memory, reference, modification, the status of ring protection, and read, write and execute protection. The 32-bit version requires a two-level paging table, and partitions the 4Gb address space into two regions: a shared region used mainly by the operating system and an unshared region where the multiple virtual spaces for the application programs are implemented. Mitsubishi's chip, the M32 or G-Micro/100, satisfies the Level 2 specifications and is designed for embedded systems. Hitachi and Fujitsu have jointly developed a pair of chips for general-purpose computing and supermicros, while Matsushita is developing a family of chips, the first for high-performance workstations. And at least two more companies are believed working on microprocessors.

SUN UK SIGNS \$15 MILLION OEM DEAL WITH MILES 33

Sun Microsystems UK, determined not to let its high-flying parent company have all the limelight, has signed a major OEM deal worth \$15 million over the next three years with Miles 33 Plc, a supplier of electronic composition systems for the printing and publishing industry. Miles 33, which has previously used only Data General hardware, will sell the full Sun range as Oasys file servers and workstations in conjunction with its PageView, PageFix and PageMake software: using Sun-based file servers in place of a mini brings the cost of an entry-level system down to around £30,000, according to sales director Mark Lunt, and workstations can also be connected to existing Data General-based System 400 processors, which the company says it will continue to sell. Increased graphics capabilities will also allow more effective page previewing of galleys or individual pages on the workstation, including the display of four pages on one screen for batch jobs, such as book pagination. Lunt claimed that software is 95% common between the Data General and Sun versions: it was developed in the BCPL language, a forerunner of C that originated from Cambridge University and is similarly portable. But Managing Director Nick Jones said that future product development would be centered around the Sun hardware. "We have to develop and enhance the products in the right direction - and that direction is Sun", he said. The company, part of the £142 million UEI Group, is planning closer links with graphics specialists Quantel, also owned by UEI: data transfer between Miles 33 systems and the Quantel Paintbox graphics computer is likely to be shown at the nine-day IPEX printing exhibition in Birmingham this September. Miles 33 also offers PC-level connectivity through technology from Pagitek Systems, which it acquired last August: it hopes to increase last year's £10 million turnover by increasing its European and US business, and has recently opened a Paris office. Existing customers include Oxford University Press, Her Majesty's Stationary Office in London, and the US financial printers Pandick.

ALTOS, STRATUS, TOSHIBA AMONGST NEW OSF MEMBERS

Amongst the announcements at Uniforum/DC last week was the signing up of six more members by the Open Software Foundation - the organisation now has around 25 members, but it hasn't yet got the go-ahead to reveal all of them. Those that have let on include Adobe Systems (which revealed its membership a few weeks back - UX No 188), Altos Computer Systems, The Mitre Corporation, Stratus Computer Inc, Tecsiel SpA, and Toshiba America Inc (Advanced Systems). Amongst the less familiar names are Mitre Corp, a non-profitmaking system engineering firm - it pays only \$5,000 rather than the full \$25,000 OSF membership fee - which is working on technical developments for US government agencies, including the Department of Defense; and the Italian Tecsiel SpA, part of the IRI-Finsiel Group, a research corporation developing software technology in the fields of artificial intelligence, computer networks and system software. The Advanced Systems Division of Toshiba America markets the company's T5100 Unix portable - but Toshiba seems eager to keep a foot in both camps, as it is also working with Sun Microsystems on a SPARC-based laptop (UX No 182). Meanwhile, Stratus Computer took the opportunity of the announcement to talk officially for the first time about its own future Unix plans (see this issue).

NOW FUJITSU COSIES UP TO SUN MICROSYSTEMS

As reported briefly last week, Fujitsu Ltd, the world's second largest computer company, is negotiating a major marketing agreement with Sun Microsystems Inc that would put it firmly into the AT&T Co Unix camp that opposes the IBM-DEC-Hewlett-Packard Open Software Foundation. According to a report from Reuters, the Japanese company is seeking rights to market Sun Sparc-based workstations in Japan under the Fujitsu name. Some kind of investment in Sun similar to the agreement in which AT&T is entitled to accumulate 20% over time is also hinted at. Fujitsu already has a relationship with Sun, but only as one of three foundries making different versions of the Sparc microprocessor. At present, Sun's biggest reseller in Japan is Toshiba Corp, but C Itoh & Co, Tokyo Electron Ltd and Sophia Systems Co also market some Sun workstations there. Sun is believed to be looking for an assured supply of key chips, memories in particular, out of the relationship, and any tie-up would strengthen the loose association between AT&T and Fujitsu: AT&T is already close to Amdahl Corp, 46%-owned by Fujitsu, both as its largest customer for IBM-compatible mainframes, and as a major user of Amdahl's UTS implementations of Unix for IBM 370 architecture. Fujitsu also wants a knockout product with which to go after the undeveloped Japanese market for engineering workstations, and does not regard its Motorola 68000 family G series of machines as adequate on its own. A Sun spokesman confirmed that an agreement between the two was imminent, and likely to be reached by mid-month.

GENERAL AUTOMATION SELLS PARALLEL TO IMP

General Automation, Anaheim, California, says it now has definitive agreement for the sale of the technology and assets of its Santa Cruz-based acquisition, Parallel Computer Inc, to the UK high-flyer Integrated Micro Products Ltd of Consett, County Durham. GA only acquired Parallel at the end of 1986 (UX no 109), with the intention of expanding its markets from Pick towards Unix, and of incorporating Parallel's fault-tolerant technology onto its own Zebra range. The company later acquired Pick and Unix vendor Aston Technology Ltd of Birmingham, UK. Now, the company looks set to stay in the mainstream computer market. IMP, which develops and manufactures Unix boards and systems (and which numbers General Auto's Aston amongst its customers), recently launched its own Magi symmetrical multi-processor, using up to 16 MC68030 processors, with a specially developed port of Unix from Unisoft Corp, and looks more suitably equipped to take advantage of the Parallel technology. With annual sales set at around £6 million, IMP is a similar size to Parallel: it will pay an undisclosed sum for the company in cash, notes and securities for the assets. IMP said it was not yet ready to comment on the deal.

\$16m TO COMPUTER CONSOLES IN UK ON-LINE DIRECTORIES PLAN

British Telecommunications Plc was considering a plan to follow France Telecom into cheapo cheapo mass market Minitel terminals for directory inquiries and Prestel viewdata as long ago as May 1986, and as of this week it was still considering. But it has decided to go ahead with the other electronic telephone directory plan, the one that will enable businesses to look up telephone numbers over a computer link without the need to trouble the operator. Telecom is going to its existing supplier of directory systems, Computer Consoles Inc, for the kit, giving the Waltham, Massachusetts company a \$16m contract. STC Plc installed the earlier Computer Consoles directory computer systems.

LINDA LANGUAGE ENABLES COLOMBIANS TO CREATE PARALLEL MAC

The intriguing Linda language, developed at the Yale Department of Computer Science, is reportedly being used in, of all places, Bogota, Colombia to create a parallel processor out of a network of Apple Macintosh SE computers. Linda first surfaced with the news that researchers at the Sandia National Laboratory had used the parallel language to create a complex of 14 DEC VAXes at two sites over 1,000 miles apart that outperformed the lab's Cray 1 supercomputer on a modelling problem (UX No 188). According to David Gelernter, who developed the language at Yale, Linda is both machine-and language-independent, and there are currently versions for use with programs written in C, Fortran, Lisp, and Modula II. According to the Newsbytes newswire Linda adds extensions to the language that speed up communications and co-ordination in the program, using a concept called "tuple space." Tuple space, says Gelernter, is more like a bulletin board than conventional communication within programs, which he describes as more like a telephone. "You don't have to dial a number or have an address, and you don't have to synchronise with the recipient of the message. You can tack the data to the bulletin board whenever you want, and the reader can read it whenever he wants." Linda is to be marketed as a product by Scientific Computing Associates, New Haven, Connecticut.

WEST GERMAN APPLIX RESELLER mbp LANDS MAJOR SWISS, GERMAN PACTS FOR ALIS

Applix' West German value-added reseller, the 20-year old Hoescht-owned mbp Software and Systems GmbH in Dortmund, has managed to score big and secure contracts worth \$250,000 this year and perhaps \$850,000 overall from Ciba-Geigy, the Swiss pharmaceutical maker, and Munich's prestigious research consortium, the Fraunhofer Institute, for Applix' office automation software, Alis. The Swiss will install Alis on 70 Sun Microsystems workstations, using an mbp-developed gateway to IBM DisOSS and SNA host systems, in its scientific computing centre and in its Project Stars, a data processing system used by biologists and chemists in the company's agricultural research department. The Fraunhofer Institute will use Alis in a multi-vendor environment across 200 workstations and minis from DEC, Hewlett, IBM and Germany's own Unix specialist PCS, now owned by Mannesmann.

DEC AIMS FIREFOX AT MID-RANGE WORKSTATIONS

DEC might be looking to RISC technology and MIPS Computer Systems Inc for specialist, high-powered workstations, but for general-purpose systems it prefers to stick closer to home: the company is due to unveil a mid-range workstation, codenamed Firefox, according to an internal DEC memo that found its way into the hands of Computer Systems News recently. The memo describes the workstation as a follow-on to the VAXstation II/GPX system, using symmetrical multi-processing to give a 5 MIPS performance with two processors, and a top-end four processor configuration delivering 10 MIPS. Firefox, primarily designed for networked environments, will run both VMS and Ultrix, according to the memo, and will be priced between \$26,000 and \$50,000. Target date for the product launch was the fourth quarter of fiscal year 1988, which closed at the end of July; one suggestion is that the machine might see the light of day at DECWorld France in September.

FUJITSU CLAIMS FIRST WITH OPEN SYSTEMS INTERCONNECTION ON ENTIRE PRODUCT LINE

Underlining the Japanese industry's commitment to standards, Fujitsu Ltd claims that next spring, it will become the first computer manufacturer in the world to provide an implementation of the Open Systems Interconnection protocols on its entire product line, from personal computers to mainframes and scientific supercomputers. The claim is likely to be disputed, but Fujitsu has done a very comprehensive implementation, combining the OSI definitions with its own Fujitsu Network Architecture, which is a superset of IBM's SNA. The company says that as well as providing backwards compatibility with earlier versions of FNA, and running on its entire product line, FNA5 will provide compatibility with and connections to IBM's SNA; will conform to the US Defense Department's TCP/IP protocol; and will support connection to Integrated Services Digital Networks, ISDN, and high-speed token bus local area networks. Fujitsu will also implement the Open Systems model on its Fenics value-added network service. Monthly rentals for the file transfer software for large machines will be \$450; on workstations, personal and small business computers it will be \$225.

IBM'S FASTER RT WINS US FEDERAL ADMIN CONTRACT

The RT Unix workstation is now right at the top of IBM's list of products that must at all costs be rescued from the US market's perception of them as dogs. The company reveals that its \$3,550m Federal Aviation Administration contract was won in large part on the strength of an unannounced version of the RISC CPU that delivers twice the integer and many times the floating point performance of the present RT - to go into 12,000 to 15,000 display stations. The new RT is set for next year, and IBM says the RT had its best month ever in June, 50% are going into commercial applications, and the support team will grow tenfold next year.

GHRAFSTONE RATING AIMS TO SIMPLIFY GRAPHICS BENCHMARK CHAOS

For those who have trouble finding their way through the myriad methods used by workstation makers to measure graphics performance - each method, naturally, carefully selected to show off the good points of a particular product - the new benchmark produced by Dallas company Workstation Laboratories may be of use. Dubbed the Ghrafstone (just how many more hideous derivations of Whetstone are there?), the rating is designed for 2D graphics systems and measures the speed of a system in drawing some 13 types of basic graphic elements - lines, rectangles, circles and so on. The company uses primarily the C language but says the ratings have proved relatively language independent, and adds that it uses graphics libraries resident on each machine - such as GKS - rather than trying to take advantage of very low-level graphics features. Workstation Laboratories gives two types of rating: display Ghrafstones, which ignores the screen resolution, and Pixel Ghrafstones which take screen resolution into account and are therefore considered by the company to be most important. A benchmark for 3D graphics systems, which will add measurement of shading and other features, is under development. A few Pixel Ghrafstone ratings supplied by the company are listed below (the higher the number, the better).

Microcomputer	Screen	Pixel Gs
Apollo DN4000	1280 x 1024	111000
IBM 6150	720 x 512	4082
Apollo DN3000	1024 x 800	4074
Sun 3/160	1152 x 900	2126
Sun 3/50	1152 x 900	1677
Compaq 386/20 (DOS)	640 x 480	1463
IBM PS/2-70 (20MHz, DOS)	640 x 480	1059
IBM PS/2-80 (16MHz, DOS)	640 x 480	913

HEWLETT-PACKARD LAUNCHES ANIMATION VERSION OF HP9000 835

Hewlett-Packard Co reckons its new HP9000 Model 835ASW, launched Monday, is the first general-purpose superworkstation that can animate still images for applications requiring the user to see motion - and that at from \$67,600 in the US, it is the lowest-priced animation superstation on the market. It sees the new model in its Unix line finding favour in applications such as commercial animation, weather forecasting, medical imaging, fluid-flow analysis and molecular modelling. The company also announced graphics imaging software from Wavefront Technologies, and a board set from Folsom Research Inc, of Folsom, California, which enables users to transfer their animated images to videotape. The new computer, based on the Spectrum RISC, combines an HP9000 Series 800 TurboSRX with a high-speed animation interface that transfers data from main memory to the TurboSRX at up to 13Mbytes-per-second, enabling animated images to be played back rapidly. There is also a \$5,000 video scan converter, developed by Folsom Research, that enables users to transfer images from HP9000 Series 300 stations to video format; 835ASW ships start November.

STELLAR ADDS VISUALISATION SOFTWARE TO GS1000

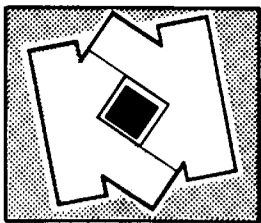
With the threat of yet more competition in the high-performance graphics market from Alliant Computer Systems' new visualisation range (UX No 191), super-workstation maker Stellar Computer has boosted its own graphics capabilities by announcing strategic agreements with graphics software vendors Wavefront Technologies, Intelligent Light Inc, Media Logic, Paragon Imaging and the University of Lowell. The move, revealed at last week's Siggraph exhibition in Atlanta, Georgia, brings more animation and image processing applications onto the company's GS1000 "graphics supercomputer", with Stellar now claiming over 40 applications since the GS1000's launch four months ago. Animation and visualisation software specialists Wavefront will work with Stellar to port its Model, Preview an Image software modules to Stellar hardware, and will joint market them on the GS1000. For aerospace and automotive companies attempting realistic renderings of complex scientific problems and product styling, Stellar will use Intelligent Light Inc's NTSC/PAL video animation subsystem and Geotrans packages. Artisan, from Media Logic, is a full colour paint and illustration system for 2D images. Stellar will also be remarketing Paragon Imaging's IL imaging library of around 100 algorithms. And the company is also porting an object oriented imaging kernel system developed by the University of Lowell for resale to its customers.

STRATUS CONFIRMS FAULT TOLERANT UNIX PLANS

It will come as no surprise to Unigram.X subscribers to hear that new Open Software Foundation member Stratus Computer is working on a multi-processor, fault-tolerant version of the Unix operating system for its XA2000 continuous processing system - we revealed it back in December last year (UX No 159). But the company has only now officially acknowledged the development program, which it says will be used as a vehicle to expanding its presence in the telecommunications industry and in government, where there is a strong demand for both Unix and fault tolerant computers. Stratus revealed that the Unix development team, based in Saratoga, California, was chartered late in 1987, and is enhancing Unix to make it suitable for on-line transaction processing applications. Development work is currently based on Unix V.3, and will incorporate kernel code developed by Olivetti, which markets Stratus systems as part of its LSX range. Features will include multi-processor support, automatic system diagnosis, on-line maintenance, on-line service through Stratus' remote service network, fast power failure recovery, and disk mirroring. The resulting product will be compliant with Posix and AT&T's System V Interface Definition, said Stratus. The OSF Unix would be implemented "in a future product", said UK Managing Director David Taylor.

NEW 68030 VMEbus BOARD FROM RADSTONE

Radstone Technology, formerly Plessey Microsystems, has followed its earlier launch of the 68-32 processor board with a second, more complex VMEbus 68030 board. The 68-31 features a VME sub-system bus interface, suiting it for multiprocessor systems where the sub-system bus can be used as a private bus freeing the VMEbus of much of the traffic. It includes 33MHz 68030, 4Mb RAM, optional 68882 co-processor, and two synchronous or asynchronous ports.

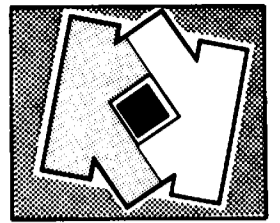


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Mosaic Software is now shipping the first Unix versions of its Lotus 1-2-3 compatible spreadsheet, Twin/UX, and Mosaic says it will also include a complimentary copy of the PC/DOS version with every product - the first versions to be released are for the AT&T 3B2 series, Prime EXL, Xenix 386, and Microport 386, with NCR Tower and Interactive's 386/IX versions to follow: the Microport and Xenix 386 versions are priced at \$695.

- 0 -

Mentor Graphics says it will take on the new Motorola 68030-based 3500 and 4500 workstations from Apollo Computer as the basis for its latest Idea workstations, with 3500 Series shipments due for shipment in the third quarter of this year, and Series 4500 systems available "this year" with a 25MHz 68030, and cpu upgrade to the full speed 33MHz chip in the first quarter of 1989: Mentor claims a user base of more than 12,000 Apollo workstations worldwide.

- 0 -

Amongst the four consortia so far bidding for the UK Home Office's pilot scheme for an automatic fingerprint recognition (AFR) system - to be put on test by the Metropolitan Police and Hertfordshire Constabulary - is a group led by De la Rue Printek, part of the De La Rue Group which specialises in AFR systems: the other members are Crossfield Electronics (also part of De la Rue) which will provide its high performance Unix workstations, Digitus Ltd, working on the database, and transputer accelerator specialists Niche Technology of Bristol: the consortium's main competition comes from the Logica/CAP AFTEC group.

- 0 -

Sales per employee is a poor guide to performance if you are comparing a company like ICL that still does a substantial amount of its own manufacturing with one like Amstrad that contracts most of it out, but it can be useful where the profiles of companies are similar - and the Japanese are way out in front in the world league, although IBM's position has improved since it began offering early retirement and other inducements to cut its workforce: Quantum Consultants Inc puts Hitachi Ltd top of the tree amongst big electronic firms with \$244,550 per employee in 1987; Toshiba did \$222,421; NEC, \$139,251; IBM, \$139,251; AT&T, \$110,884; Siemens, \$90,329; and Philips, \$87,682, with GEC Marconi down at \$80,000 per employee.

- 0 -

Data Access Corporation is moving into the IBM sector with the launch of AIX and OS/2 versions of its Dataflex database management system.

Hewlett-Packard Co has restructured top management in recognition of the fact that computers have now grown to represent nearly two thirds of its business: president and chief executive John Young, HP will take over one of the business sectors and all three departments previously handled by executive vice-president and chief operating officer Dean Morton so that Morton can concentrate on the computers.

- 0 -

And Siemens AG is restructuring its US operations, turning its New York-based Siemens Capital Corp into the US headquarters and service centre for the company's 26,000-employee, \$3,000m US ops: the unit will be come Siemens Corp, and take over from Siemens Corporate Research & Support Inc, Iselin, New Jersey.

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Sony Corp is to offer the Artisan graphics paint and illustration software system from Media Logic Inc, Santa Clara, California, on its News range of workstations, for sale to the illustration and publishing industries.

- 0 -

Encore Computer Corp, Marlborough, Massachusetts looks for fiscal third quarter turnover to the end of last month to be up about 150% on the figure of a year ago, and that it will show a profit - "Record revenues for the third quarter result from shipments of the Encore Multimax 310 and 320 parallel processing systems and the Annex communication products" it says.

- 0 -

Gould Inc has reported second quarter net profit up to \$62.3m from \$3.5m, after extraordinary credits of \$29.5m this time, \$1.4m last time, after extraordinary credits of \$29.1m this time, \$3.4m last time, on turnover up 3.7% at \$196.4m; mid-term net profit rose 530.6% to \$70.0m, on turnover up 8.0% at \$403.0m. Earnings per share rose to \$1.37 from \$0.08 in the quarter, 516% to \$1.54 in the half.

- 0 -

Stepstone Corporation, Sandy Hook, Connecticut, has introduced version 4 of its object-oriented extension of the C language: Objective-C version 4 offers Ansi C support, full function and method prototyping, extensive type-checking, enhanced error handling, and dynamic and static binding options: product suite deliveries (including compiler, interpreter, foundation class set and graphical user interface class set) will begin in September for Apollo and Sun workstations, followed by HP 9000 Series, DEC VAX and IBM PC-AT and compatible versions.

London-based MF Systems, author of the MetaFour fourth generation language, has announced an open-ended deal with Systime Computer, Leeds: written in C, the product runs on both Systime's proprietary MPS operating system and under Unix, C-DOS, MS-DOS and Xenix: Systime now has the rights to distribute the product to its dealers for software development.

- 0 -

National Semiconductor has announced a C compiler for its DP8500 raster graphics processor, and now also offers a graphics kernel, a full implementation of a real-time, multi-tasking device independent graphics interface: the announcements, made at Atlanta's Siggraph show, was accompanied by price-cuts in the graphics chipset, bringing the cost for an eight-plane colour graphics system down to \$98 at volumes of 10,000 per year.

- 0 -

Apple Computer Inc says its A/UX operating system software will support the IEEE Posix standard to meet the requirements of the federal government market: a draft 12 compliant version was demonstrated at Washington's Uniform/DC show: also demonstrated was X- Windows, Release 11 for A/UX.

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And Apple is offering its US customers free 90-day "hot-line" support with every A/UX system sold between September 1st and December 31st of this year.

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The popular press has moved on a bit since the days when it perpetrated howlers like software and silicone chips whenever it wrote about the industry, but there are still a few elephant traps out there for the unwary, and a report in the Wall Street Journal apropos the RT that IBM had only 3.9% of the workstation market caught out the New York Daily News good and proper yesterday: "IBM," it boldly proclaimed, "has vowed to become king of the hill in office workstation furniture by 1991; it now has only 3.9%, and needs 30% to be tops".

- 0 -

Sun Microsystems Inc successfully blasted its way through the billion dollar barrier for its fiscal 1988 results - the company reported fourth quarter net profits 132% ahead at \$25.3m on turnover that rose 96% at \$365.1m; net profit for the year to June 30 was up 83% at \$66.4m on turnover that rose 96% to \$1,050m. Net earnings per share rose 113% to \$0.66 in the quarter, 61% to \$1.79 in the year, much better than the 41 cents to 53 cents analysts had been expecting. The company also improved sales per employee, which hit a healthy \$150,000 on the nail.

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FUJITSU IN \$280m FIVE-YEAR PACT WITH SUN MICROSYSTEMS

Sun Microsystems and Fujitsu Ltd announced last week that their discussions (UX No 192) had culminated in an enormous five-year OEM agreement valued at a minimum of \$280m, under which Fujitsu will market the 68000 family Sun-3 and Sparc- based Sun-4 workstations and servers as the Fujitsu S Family. Fujitsu is looking to sell about 15,000 systems in the first three years of the agreement, initially in Japan, although the pact covers the entire world. Fujitsu manufactures one version of the Sparc chip at its US plant, and was keen to get the Sun workstations because of the broad range of 1,500 packages that runs under the SunOS version of Unix. But Fujitsu has refuted speculation that the agreement will give Sun privileged access to memory chips.

ELY TO HEAD UNISYS UNIX EFFORT FOLLOWING \$332m CONVERGENT BUY

Continuing its campaign to become a \$20,000m-a-year company by the early 1990s by fair means or acquisition, Unisys Corp late last Tuesday announced agreement in principle to acquire Convergent Inc, the San Jose firm that already gets some 20% of its \$400m-a-year plus business from Unisys, for \$332m in cash and shares. The offer is \$7 a share, a whopping premium on the \$3.4375 at which the shares closed on Tuesday ahead of the offer being made public. The consideration is expected to be 45% cash, 55% Unisys shares, but the details have not yet been settled. The transaction will involve the merger of Convergent with a wholly-owned Unisys subsidiary in which either Convergent or the Unisys subsidiary will be the survivor and Unisys reserves the right to alter the structure to be all cash or all stock. "Convergent will become a cornerstone of our rapidly growing business in distributed systems based on open industry standards and state of the art networking technologies. Convergent's skills and expertise in engineering, manufacturing and third-party sales, will allow us to play a broader role in this market," said Unisys chief executive Michael Blumenthal. A key feature of the agreement is that Convergent chairman Paul Ely, who took on that position after holding very senior positions at Hewlett-Packard Co, will become Mr Unix at Unisys, joining the Unisys board and run Unisys' worldwide distributed systems business, helping to guide the design, engineering, manufacturing, procurement, logistics, third-party sales and marketing strategies for Unisys systems based on CTOS/BTOS, Unix and MS-DOS and OS-2. Unisys will seek to expand Convergent's OEM business, no doubt putting some of its own products through the same channels, and will continue the vertical market systems integration businesses that are grouped under the Convergent Business Systems banner, no doubt again adding its own products where appropriate. Unisys projects that its distributed systems business will generate \$1,700m in revenue in 1988, including systems, peripherals, software and services, and that adding Convergent will take the operations over the \$2,000m mark. Unisys said it foresees no material impact from the acquisition to 1989 earnings - although Convergent lost \$2.1m on sales of \$199m in the first half of the current year - and expects a positive earnings impact thereafter from Convergent's revenue growth and synergies in engineering, manufacturing, and third-party sales flowing from the merger. Burroughs was one of Convergent's first two major OEM customers for its CTOS workstations, the other being NCR, and about 500,000 of these are installed worldwide, 300,000 of them by Burroughs and by Unisys.

\$8.5m AT&T KORBX SYSTEM SOLVES THE UNSOLVABLE

Having now patented what it calls the "breakthrough" discovery of an algorithm designed four years ago to solve major operational problems, AT&T has this week unveiled an \$8.5 million decision support system based on the work. The algorithm was invented in 1984 by Indian born Bell Laboratories mathematician Narendra Karmarker, and caused a great deal of excitement within AT&T at the time. The new system, dubbed Korbx, will be marketed through a new AT&T Advanced Decision Support Systems (ADSS) division, looking for custom from Fortune 100 companies and government customers with "extremely difficult or previously unsolvable resource allocation problems". Included within the massive price tag is the hardware: an 8 processor parallel/vector FX80 minisupercomputer bought in from Alliant Computer Systems, which costs "below two million dollars" according to Alliant's vice president of marketing, Dave Rolme; and software technology, terminals and services from AT&T, which according to ADSS president Aristides C Fronistas, will help design customer systems in areas such as personnel planning, vendor selection and equipment scheduling. "This includes expediting solutions to time-consuming linear programming problems with thousands of variables and constraints", said Fronistas. AT&T is already using a system internally at Kansas, where it is used in conjunction with an Amdahl mainframe running UTS to optimise AT&T's worldwide telecommunications network, and says Fronistas says there are already has "between one and ten" customers for Korbx systems.

DEC TO FABRICATE MIPS' RISC?

DEC's proposed investment in MIPS Computer Inc, Sunnyvale, California (UX No 190) is now expected to involve MIPS granting the Maynard minimaker the rights to fabricate its RISC microprocessor line. DEC reportedly abandoned its own RISC hardware development in order to take on the MIPS technology

TECHNICAL SHOWDOWN OR BOSTON TEA PARTY?

Next month, the Open Software Foundation takes its first practical step towards implementing its Level One operating environment standard. The result will either be a fierce technical and marketing battle, or an irrelevant non-event. Mike Faden reports.

A three-day pitched battle next month between suppliers of graphical user interfaces will be used to determine the features of the Open Software Foundation's standard user interface. The OSF wants suppliers to make their pitch during a Boston conference starting September 25th, which will be open to OSF members and non-members alike. By the end of the year, OSF hopes to have distilled from the available products an acceptable, achievable specification which may take features from several different products and can be implemented for the OSF Level 1 product, due in the first quarter 1990.

Force the issue

"We are sick and tired of waiting for standards", said OSF director of European Operations Henning Oldenburg *"We want to force the issue"*. This radical departure from the OSF's previous stance as solely an implementor, rather than a specifier, of standards, underlines the need for OSF to be seen to come up with product in a hurry - not least because the opposition, AT&T and Sun Microsystems, have a considerable head start in developing System V, Release 4.0. The conference, during which selected suppliers will present their products *"in any way they choose"*, will be repeated in Brussels on October 6-8. By September 16, would-be contenders have to submit a five-page document outlining their product, from which a shortlist of those which implemented the greatest number of desired features will be selected as candidates for presentation at the conference. By the end of the conference, OSF staff should have a vast range of likes and dislikes - votes, effectively - from attendees; and remember, the conference is open to both OSF members and non-members.

The most widely liked features, picked out from attendees' votes, will be combined into a specification of the ideal OSF user interface (*"We know we're not going to get it"*, comments Oldenburg). OSF then plans to take the specification back to the shortlisted companies and compare their ideal with the existing products, discuss whether it is possible and the companies are willing to add the OSF features to their software, and get them to say how much it will cost. OSF *"should have the responses by the end of November"*, and will then hold another conference to decide what is achievable and desirable based on both technical considerations and business factors such as the cost and timescales of development. The aim is that by the end of the year, OSF should have not only a final specification, complete with clear description of the applications programming interface, of what is achievable for Level 1 - and probably what will come with succeeding Levels - but also should be able to contract the development of the product. Oldenburg said OSF will give the reasons for its selection of the winner and for the rejection of the others. *"I believe that the user doesn't care if the user interface is slightly better or worse"*, he said *"What matters is that there is a standard"*.

Nevertheless, he freely admitted that the OSF approach of combining features from different products to form a more or less instant standard may turn out to be over-idealistic. In particular, he conceded that the desperately tight timescales may well overrun - but as he pointed out, setting an early deadline at least pushes the process harder towards a conclusion. The list of prerequisites for user interface technology may ensure that some products that would otherwise be prime candidates are not submitted at all: besides the obvious requirements that the software be X-Windows based, written in C, Unix compatible and *"hardware independent"*, there have to be *"no licencing restrictions"* apart from royalty considerations - companies have to make the source code available to any OSF customer - and it has to be *"commercially available by the end of Q1 1989"*.

Look and feel

Because the selection of the base technology is announced at the same time as the specification is published, Oldenburg hopes to be able to encourage the companies that were not selected to change their products to become compatible with the specification (they all have an equal time during which to implement the changes). He also hopes that applications developers will start writing software to meet the spec so that by the time the user interface is shipped, there should be applications software available. These are high hopes indeed, since the "look and feel" provided by graphical user interfaces is the next method that many manufacturers hope to use to entice users into the proprietary fold - and an indication of the importance of the issue is the number of lawsuits that are currently flying back and forth between major suppliers. If the user interface selection process proves reasonably successful, OSF hopes to use a similar mechanism to select other technologies, although as OSF membership grows, future conferences will probably be restricted to members. The next technology in line is database management systems.

However, as Oldenburg admits, with OSF membership standing today at a mere 25-odd, the decision to open the first conference to the world at large was essential if OSF is to have any hope of achieving a market consensus in the selection of the user interface technology. The Boston conference should be an acid test of industry and user opinion; if OSF is viewed as sufficiently relevant, the three day conference could be the scene of a ferocious technical and marketing battle between competing vendors. If, on the other hand, the conference is characterised by restraint, a lack of controversy, cups of tea and cucumber sandwiches, then the credibility of OSF as a source of vital technology could be seriously jeopardised.

COMPUTER CONSOLES "FOR SALE" - CUNNINGHAM: PRIZE FOR STC?

In a remarkable interview in the US edition of the Wall Street Journal this week, chairman and chief executive John Cunningham effectively hung a "for sale" sign out over Computer Consoles Inc, declaring that he was looking to sell the company, in which he holds a 10% stake, within the next four or five years.

Such a statement however, is certain to precipitate action by any company that has eyed the Waltham, Massachusetts firm as a possible takeover candidate on the basis that if it doesn't move quickly it may lose the prize. And as the world leader in the manufacture of computer-based directory inquiry systems, as well as a major player in the small but fast-growing market for office and business systems under the Unix operating system, the company looks a remarkably attractive target for STC Plc and its ICL subsidiary. STC markets the directory systems in Europe, and ICL buys Computer Consoles Unix machines OEM, as well as offering the company's well-regarded Officepower office automation software on all its Unix machines. Cunningham says that he wants another four or five years with the company, and then sell out for three to four times what he paid for his 10% stake and go off and do something completely different. He was once tipped as a possible chief for ICL, and if those years could be put at ICL's disposal, it would be a very fancy feather in the company's cap: Cunningham was responsible for much of the phenomenal growth of Wang Laboratories in the late 1970s and early 1980s, and has emphatically turned Computer Consoles around, a fact that has not yet registered in the share price. He bought in at \$6.625, and the shares are now at \$7.875 - but any would-be acquirer would have to think in terms of \$16 to \$20 a share, valuing the company at \$208m to \$260m, or 18.6 to 23.2 times prospective earnings - the company is expected to do \$11.3m or so net, 86 cents a share, on sales up about 21% at \$180m. The item boosted Computer Consoles shares first thing - albeit by only 12.5 cents - but that was more than it sounds because the Dow was off 24 points at the time, and all the major computer plays were showing falls of \$1 or more.

STARNINE ADDS UNIX UTILITIES AND MAIL

BRIDGE TO APPLE'S AUX

Amongst the companies exhibiting at last week's Mac World exhibition at Boston, Massachusetts was Berkeley, California - based StarNine, a company founded by several members of the original A/UX development project. StarNine specialises in utilities for the Apple product, including the TOPS publishing system and Mac-like utilities for running under A/UX, such as A/UX <=> Mac, which uses a standard Macintosh dialog box to allow you to copy from A/UX to Macintosh HFS volumes. The company's latest product is a bridge between Macintosh mail packages and Unix mail. StarNine has implemented an interface between the Macintosh QuickMail product developed by CE Software Inc with the standard Unix mail system, allowing mail to be sent transparently between the two systems. Other mail packages will be supported in the future, says StarNine. Company spokesman Rusty Rahl denied that the first release of A/UX was incomplete. "A/UX is the most complete version of Unix ever released - but there are gaps in the system for those running A/UX and the Macintosh operating system - it is this area that we are addressing". Rahl predicted that many buyers were waiting for the next release of A/UX before making a purchase, and predicted that the next six months would see a large increase in orders.

SILICON GRAPHICS ADDS FASTER CHIPS AND MULTI-PROCESSOR LINE

Silicon Graphics has boosted the top-end performance of its 3D graphics workstations with a new top-end model - the 4D/80GT, and has made a move into multi-processing with a new upgrade facility for Iris workstations. The 4D/80GT uses the faster 16.7 MHz version of the R2000 RISC cpu from MIPS Computer Systems to boost performance by 30% over the previous models based on the 12.5 MHz chip - and at £68,000 in the UK has a price increase of only 10%. And the company has also introduced an upgrade option for its Iris range, which includes dual 16 MHz RISC processors and proprietary VLSI chips to boost the graphics subsystem. The GTX upgrade for Iris 4D/50, 4D/70 and 4D/80 models results in systems rated at 20 mips and 2 mflops, according to Silicon Graphics, and has doubled graphics performance, transforming 150,000 independent, gouraud shaded polygons per second, with a pixel fill rate of 8 million pixels per second. The two processors communicate through a high speed "VME-like" bus developed by Silicon Graphics, and UK Managing Director Tim Marlton hinted of further ventures into multi-processing with forthcoming products. Upgrade costs in the UK are £19,000 for the 4D/80GT, £30,000 for the 4D/70GT and £41,000 for the 4D/50GT.

SUN-3 RELEASE OF MODULAR-2 NOW READY, SAYS OREGON

Oregon Software, Portland, Oregon, says it has now completed field trials of its Modula-2 compiler for the Sun-3 workstation. Repeating the oft-forecast opinion that Modula-2 would move away from its current academic setting towards more general business and industrial use, Oregon, which made its name developing Pascal compilers, said its own version was based on the third edition of Dr Niklaus Wirth's "Programming in Modula-2" text, with Oregon extensions in areas such as packed records, packed arrays, and Forward references. Oregon Modula-2 programs can also call Pascal, C, C++, and assembler routines so that users can take advantage of existing software libraries, and has user-controllable, run-time error handling and an interactive, source-level debugger. Although the initial release is for the Sun-3, future versions scheduled include VAX/VMS/Unix/BSD and Intel iAPX86/MS-DOS/Xenix (in native and cross-compiler versions). The Oregon Modula-2 Sun-3 compiler is priced at \$2,100 for a single-user license. Network pricing is also available.

AT&T AND DEC HEAD TOP TEN UNIX COMPANIES

A new set of figures compiled by the US monthly Unix World has separated the Unix revenues of worldwide software and hardware companies in order to create a list of the top ten Unix system companies and top ten software companies. Figures have been compiled from information both from the companies themselves and from industry analysts such as International Data Corp, Dataquest, Novon Research, Hambrecht and Quist, the Yankee Group and the Gartner Group. The result shows the major players in the Unix field. Not surprisingly, AT&T heads the Unix software list, although Unix World admits that the \$50m revenue figure is "a seat of the pants" estimate, due to AT&T's refusal to confirm a specific number. Surprises in the software category include Amdahl, which doubled its number of Unix installations over the last year, and the UK company Uniplex at number 10, helped by lucrative defence projects. And despite DEC's well publicised preference for its VME operating system, the company still managed to clock up \$1.1 billion in Unix hardware revenues. The notable absence of Unisys Corp, which claimed \$500m Unix revenues last year, is explained by the inclusion of only the original hardware manufacturers on the list - Unisys buys-in the majority of its Unix hardware from third parties, including NCR. The tables listed below are printed in full in the September issue of Unix World.

Software companies	Unix revenue	Total revenue
AT&T	\$50.0	\$33.8bn
Informix	\$47.2	\$82.0
Santa Cruz Operation	\$46.2	\$46.2
Oracle	\$33.5	\$280.0
Microsoft	\$32.0	\$345.9
Amdahl	\$28.5	\$1.5bn
Relational Technology	\$24.5	\$29.2
Interactive Systems	\$21.5	\$21.5
Unify	\$15.0	\$15.0
Uniplex	\$10.0	\$10.0

Hardware companies	Unix revenue	Total revenue
DEC	\$1.1bn	\$9.4bn
Sun Microsystems	\$872.4	\$872.4
AT&T	\$789.5	\$33.56bn
IBM	\$594.5	\$54.2bn
Apollo Computer	\$553.6	\$599.2
Hewlett Packard	\$447.1	\$8.2bn
NCR	\$383.5	\$5.64bn
Cray Research	\$255.0	\$687.3
Altos Computer	\$170.6	\$170.6
Amdahl	\$138.0	\$1.5bn

Top Ten Unix Hardware & Software Companies
Revenues for the last 12 months in \$millions
(Source UNIX WORLD MAGAZINE)

C3 REPACKAGES SUN RISC WORKSTATIONS FOR NAVY USE

Defence systems integrator C3 Inc, of Herndon, Virginia, has announced three new products based on the SPARC RISC processor from Sun Microsystems. The C3 models C3 4/110, C3 4/260 and the C3 4E are repackaged and ruggedised versions of Sun's workstation line, designed for shipboard use, and allowing continued performance under the military standard specified Type 1 Vibrations. The C3 4/110 is based upon the Sun 4/100 series SPARC CPU, a single board solution that offers the CPU, up to 32 megabytes of memory, IEEE 802.3 Ethernet, SCSI interface, two RS-423 interfaces, and a colour graphics frame buffer. The C3 4/260 product will provide CPU, 8 megabytes of memory, expandable to 128 megabytes, operating at 10 MIPS, Ethernet, SCSI, and two RS-423 interfaces, keyboard/mouse interface, and a color/monochrome graphics frame buffer on a 6U board set. The C3 4E product - not available until the third quarter of 1989 - has a single-board color/monochrome graphics frame buffer. Anticipated list price for the 4/110, 4/260 and 4E are \$49,000, \$55,000, and \$65,000 respectively.

NASA'S CYDRA IS "AS FAST AS A CRAY" FOR SIGNAL DECODING

Troubled supercomputer manufacturer Cydrome Inc of Milpitas, California, still has faith in the distributed dataflow architecture of its Cydra 5 departmental systems, despite the recent withdrawal of the company's marketing partner Prime Computer Inc last month (UX No 190). The company is boasting that scientists at NASA's jet propulsion laboratory in Pasadena have reduced time spent decoding data received from deep space probes from 24 hours to ninety seconds. Seven months ago, NASA was using a VAX-750 for simulations, modeling deep-space systems and error-correcting codes, using data transmitted from probes now as far away as the planet Neptune. NASA scientist Dr Laif Swanson claims that the Lab's new Cydra 5 is up to 1000 times faster when running the custom Viterbi decoding application. "When a signal comes all the way from Neptune, there are numerous errors because the distance makes the signal weak and the noise in the receiver is large", she said. Although JPL scientists have access to a Cray supercomputer through the University of California in San Diego, Swanson said the Cydra 5 is just as fast as the Cray for this application.

SERIOUS FRAUD OFFICE LOOKS TO UNIX

The UK Central Computer and Telecommunications Agency has issued an operational requirement for a Unix-based computer system for use in the Serious Fraud Office in Central London. The office, set up by the Government in April to deal with major fraud cases such as Guinness and Barlow Clowes, says it needs the system to assist with case investigation, case tracking activities and management information relating to case progress and key performance indicators. Initially supporting 30 users, the system must be upgradable, and should have a "Unix-like" operating system that supports the Oracle database and local area network facilities. The office has a budget of some £60 million and a staff of between 80 and 100 people.

PRAXIS LANDS £1m FUNDS FOR ACQUISITIONS AHEAD OF FLOTATION, BUT ECAD DEAL DIED

Announcing a 50% growth in turnover in the year to June, Martyn Thomas, chairman of Bath, Avon software engineering house Praxis Systems Plc, revealed that the company has raised a £1m war chest to fund acquisitions and growth in the UK and other European countries. Funding has come from institutional investor Syntech and Mr Thomas said there was on average six to eight companies a month that came on the market that he was interested in - but he has not yet found a suitable partner. Praxis (UX No 98) has been in existence for the last five years and has seen turnover rise steadily from £500,000 in its first year of operation to £4.3m this year. Mr Thomas was particularly pleased with software development and consultancy sales, which were described as very strong, especially in the second half-year. However Ella, the company's hardware description language for the expression, verification and management of very large scale integrated circuit designs, enjoyed mixed fortunes. Though it accounts for 20% of the company's total business and is reported to be taking off in Europe, the distribution agreement with ECAD Inc of Santa Clara, California announced last November (UX No 155) has fallen through following ECAD's acquisition of SDA. The company presently employs 130 people, and although not listed it trades as a public company with a view to going public in the near future.

NEW DEALS FOR EMPRESS

Software development company MKC Corp has signed an agreement with Empress Software Ltd of Toronto, to become the exclusive Japanese distributor for the Empress product, which will be translated into Japanese: Empress is a relational data base development tool claimed to be particularly suitable for building databases with image and voice processing, and running under Unix; MKC is hoping to make sales worth \$1.5m in first year. And in a separate agreement, Honeywell Bull has adopted Empress to provide the network management capability for its latest networking system, called DSAPac. DSAPac is for the physical network market and the network management facility will run on the Honeywell Bull XPS100 range of Unix computers. Empress will provide a link to files that hold configuration information, menu information, status information and logging.

SUN 4 SHOWS ITS TRUE COLOURS

Sun Microsystems has introduced a high resolution 24-bit colour version of its 4/110 workstation, priced at £20,000 in its diskless configuration. The Sun 4/110TC - for true colours - includes a 24-bit frame buffer that allows a choice of 16.7 million colours. Previously only 256 colours were available. In a separate announcement, Sun enhanced the graphics capabilities of its 386i range with optional graphics add-in cards for EGA and VGA compatibility on MS-DOS sessions: the card plugs into one of the AT expansion slots on the 386i, and is priced at £700. And Sun has expanded its TAAC graphics and applications accelerator (UX no 187) by adding an image processing library and volume rendering toolkit. These, and the existing graphics library and video control routines make up the complete TAAC-1 package, which sells for £500.

AUSTRALIAN AIR FORCE INSTALLS 86 UNIPLEX SYSTEMS

The Royal Australian Air Force (RAAF), which standardised on the Uniplex office automation software suite back in 1986, has now installed Uniplex II Plus in 86 sites throughout Australasia. Hardware is a mixture of NCR Tower 32/600s, ICL Clan 4s and HP 9000/3300 and 3200 series systems. Uniplex is also providing Informix 4GL and SQL, and the training of technical staff. Uniplex will eventually be used by more than 1200 RAAF staff in sites from Townsville, Darwin, Sale in Victoria, to Butterworth in Malaysia, according to Computerworld Australia.

MASSCOMP PREPARES FOR CONCURRENT MERGE

Massachusetts Computer Corp has now started its tender offer for all the shares of Concurrent Computer Corp at \$20 per share and given a few more details of its plans for the combination following completion of the operation. Concurrent will merge into Masscomp and change its name to Concurrent Computer Corp with headquarters in Tinton Falls, New Jersey. Manufacturing operations will be combined at the New Jersey and Cork, Ireland plants of Concurrent, with Masscomp's manufacturing facility in Westford being closed down at the end of December 1988, although engineering and some marketing and support operations will stay in Massachusetts. As a result, Masscomp expects to report a one-time charge to earnings of approximately \$8m for the quarter and fiscal year ending July 2, 1988. Financing is coming from a \$75m senior loan facility from a group of banks led by Bank of New England, and Drexel Burnham Lambert is acting as placement agent for \$100m of subordinated debt financing - junk bonds - and the principal shareholders of Masscomp, Greylock Investments, Hambrecht & Quist Venture Partners and J H Whitney & Co, will buy \$10m of Masscomp common at approximately \$3.85 per share. As part of the subordinated debt financing, Masscomp will issue warrants representing 15% of the fully diluted outstanding shares for use in employee stock option programmes to run over the next five years. On the product front, meetings are continuing this week and next to work out future strategy: Concurrent's real-time systems sell in a higher price bracket than the Masscomp boxes, and Concurrent has also been branching out from scientific applications towards the commercial transaction processing world, which now accounts for around 20% of business. Both companies use Unix as a base, although Concurrent appears to have put more emphasis on its proprietary OS/32 operating system in recent years.

COUNCIL FORMED TO PUSH INDEPENDENT TRANSACTION BENCHMARK

The remedy for every computer or telecommunications problem or disagreement these days is to form a new standards body to address it, and so it is that the irritation caused by IBM's use of its proprietary RAMP-C benchmark to measure performance of transaction processing systems has led to the creation of the Transaction Processing Performance Council, whose aim is to develop standard on-line transaction processing benchmarks (in computing terms, what is off-line transaction processing?) and to explore ways in which any performance claims made under the standards can be verified. The seven founders are Control Data, DEC, Pyramid Technology, Stratus Computer; Sybase; Tandem Computers; and Wang Laboratories. Omri Serlin's Itom International Co consulting and research firm in Los Altos, will be administering the Council, which is reviewing a proposed new standard for the DebitCredit benchmark, co-authored by Serlin and Tom Sawyer, Codd & Date Consulting, San Jose.

ARDENT GETS \$25M KUBOTA FUNDING

Ardent Computer Corp, which took in \$20m in venture capital from its Japanese manufacturer and distributor Kubota Ltd of Osaka in October 1986, back in the days when the company called itself Dana Computer (UX No 109), has gone back to the same source for its third round of financing, getting another \$25m, all of it from Kubota. The graphics supercomputer designer, based in Sunnyvale, California, says that the cash will be used to build its sales, service and support staff, and reckons it will be enough to see it through to an initial public offering in the US, which it expects to make in 1990. Ardent got its initial funding in February 1986 from a group of US firms including Kleiner Perkins Caufield & Byers; L F Rothschild, Unterberg Towbin; Merrill, Pickard, Anderson & Eyre; Cable & Howse Ventures; Bay Partners; Mayfield; Battery Ventures; and Fairfield Venture Partners.

...AS NIPPON UNISYS TAKES ON STELLAR'S GS1000

In a surprise move, Nippon Unisys Corp is to assist Stellar Computer Inc in marketing its GS1000 Graphics Supercomputer in Japan, by incorporating the workstations into large mainframe computer configurations for simulation, CAD/CAM and animation. Stellar's primary Japanese reseller is Mitsui & Co, which has a lingering relationship with Nippon Unisys which dates from the days when it was a shareholder in Nippon Univac. Nippon Unisys says it will also recommend to its US parent that it offer Stellar's box.

TELEVIDEO WARNS OF THIRD QUARTER LOSS

TeleVideo Systems Inc warns that component shortages and engineering delays on its late-model 80386 and 80286 personal computers will lead to it reporting a loss for its fiscal third quarter to July 29 of between \$9.5m and \$10.5m on turnover of \$23m: the company lost \$2.5m on sales of \$19m this time last year.

PHILIPS WINS \$3 MILLION AUSTRALIAN BANK ORDER

While it is generally not seen as a general purpose Unix systems supplier, Philips Telecommunications and Data Systems is gradually placing more and more emphasis on selling its Unix-based P9000 Series systems into its traditionally strong market areas. The banking world is one such niche, and now Philips has gained its first major success in Australia. The recently established Tasmania Bank has ordered some fifty P9200 systems, with 300 workstations for its forty-five branches throughout the state. The installation is due for completion by October of this year, using software developed with Philips' Text Form and Workstation Management development tools. The P9000 Series was launched in Australia at the end of last year, but Philips says it already has ATM's and front and back office terminals installed in 39 Australian financial institutions.

GOULD DOWN TO LITTLE MORE THAN COMPUTERS AS AMI GOES; 40 JOBS GO AT HQ

Gould Inc, a shadow of its former self these days, is now selling its one-time white hope, applications-specific integrated circuit pioneer American Microsystems Inc. Buyer is California Micro Devices Corp, Milpitas, which buys the assets - including the 1.25 micron plant in Pocatello, Idaho, and name and assumes some liabilities for \$70m cash to grow its annual sales to \$130m. The agreement leaves Gould Inc with very little left from the massive acquisition spree that turned the Rolling Meadows, Illinois company into an electronic conglomerate from a low-tech electrical equipment and batteries company: indeed the Gould Computer Systems business that it built around its Systems Engineering Laboratories acquisition is now substantially the biggest units remaining in the shrinking company. Turnover for the company following the divestiture of the Semiconductor Division are expected to be in excess of \$650m, and at last count, Computer Systems was running at over \$300m, down from 1987 reported revenue of \$933.4m; worldwide employment will still be 6,500. Completion of the latest sale is expected within the next 30 to 90 days. Proceeds will be applied to the company's ongoing debt reduction and stock repurchase programmes. Gould is also reducing its corporate headquarters staff in Rolling Meadows by approximately 30% or about 40 people, with cuts being made across all functions. California Micro meanwhile gets a business with 1987 sales of approximately \$100m, employing about 1,600 people at its headquarters in Pocatello, Idaho and at its chip packaging plant in Metro Manila, Philippines. It also gets the American Microsystems Inc name: the company specialises in a range of CMOS application-specific integrated circuits in digital, analogue, and mixed-mode formats. The division also provides standard products, silicon foundry facilities, and computer-aided design resources. As a result of the new acquisition, California Micro is now expecting that its annual sales will reach \$130m; it already took over GTE's semiconductor operations based in Tempe, Arizona last year.

POWERSCOURT ALL SET TO PUT TETRA'S UNIX ACCOUNTING PACK ON IBM'S AS/400

The current wealth of Unix applications created by the rush to rewrite packages originally developed for proprietary architectures to run under Unix, has forced manufacturers to reverse the trend and start pillaging the Unix base for additional proprietary offerings. One such example is the UK's Maidenhead-based software house Powerscourt Ltd, which plans to run the Unix-based Chameleon accounting package developed by its parent company, Tetra Business Systems, on IBM's AS/400 range of small mainframe computers by the first quarter of next year. To this end, and in what appears to be a case of favoured treatment, the company claims that it has now received a "formal commitment" from IBM for the early delivery of a C compiler for the OS/400 operating system - a product which will not be available from IBM on a general basis until November. Overall, the decision represents the first serious move into the IBM market by Powerscourt, which was set up as an independent systems integrator within the Tetra Business Systems group in December 1987; the company now employs 45 staff, and reported a turnover last year of £5m. The 250 strong parent which saw a turnover last year of £18m, also contains FocalPoint Education, Programming, and Engineering divisions.

BRITISH TELECOM PLANS 68030-BASED SYSTEMS

British Telecom is to launch a 68030-based model to top its M6000 range of computer systems this October, and BT is employing Unisoft Corp to carry out a port of Uniplus+ System V.3 for the new machine, in a deal said to be worth over £150,000. Originally based on systems bought in from UK manufacturer Bleasdale Computers, BT's Fulcrum Communications Division has since taken over manufacturing and development of the line, and launched the 68020-based 6300 and 6500 systems at the end of last year. BT is now using the 6000 Series as the basis of its Common Office Automation System for Telecom (COAST) project, which will link 60,000 BT users around the country. Business development manager John Sharplin said that, having established the systems within BT itself, the company would be "looking for substantial growth in other strategic areas, particularly in Government departments". The Unisoft contract includes the porting of communications facilities such as TCP/IP and NFS.

USA AND JAPAN COLLABORATION ON WORKSTATION RESEARCH

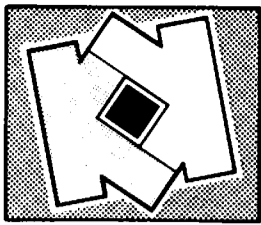
Software Research Associates Inc, one of the leading proponents of Unix in Japan, has set up a research office in Boulder, Colorado, in conjunction with ex-University of Colorado professor Lloyd Williams: the new unit will be part of the Software Development Project with US universities, and will focus on integrating workstation architectures and software for the fast-growing workstation market; the company already has a similar research office in Honolulu, which it operates in conjunction with the University of Hawaii.

HEWLETT-PACKARD GETS 10% OF OCTEL AS PART OF EUROPEAN SPEECH-PROCESSING OEM PACT

Hewlett-Packard Co is to take an initial 10% stake in voice-processing manufacturer Octel Communications Corp, Milpitas, California as part of an agreement under which Hewlett will distribute Octel's Aspen Automated Speech Exchange Network speech processing systems throughout Europe. The two will integrate Octel systems with Hewlett's computers and electronic mail systems, "enhancing the functions of both companies' offerings", and Hewlett will sell Octel systems under its own name to major European companies and US subsidiaries in Europe, and to European telephone operating companies wanting to provide enhanced services such as cellular or residential voice-messaging services. Financial terms of the OEM pact, which runs for 66 months, were not disclosed, but Hewlett is to pay \$18.87 a share, some \$13.8m, for a 5% stake and will buy another 5% on the open market over the next 18 months. After one year, it has the right to increase its stake to 20%, but Octel insists that the agreement protects its autonomy and it "is not looking to be acquired."

TELECOMPUTING ADDS FLEX JEXPERT TOOLS TO TOP-ONE TO MAKE IT MORE ACCESSIBLE

Telecomputing Plc of Oxford, UK, says the performance limitations of single-user expert systems within a mainframe environment, coupled with the failure of products to live up to over-hyped - expectations, are "substantive" obstacles to the widespread acceptance and adoption of knowledge-based techniques by the commercial data-processing world. The company's problem in getting its ideas across to users was one of the causes of its reporting a pre-tax loss of £189.0m for the six months to March 31st: it claimed that while the take-up rate for its Top-One system for IBM mainframes was satisfactory, potential customers won't come up with the full price before they have seen it at work on their own applications - Top-One is designed to enable users to develop expert systems applications that will mesh with existing applications and run alongside them at the same speed, and also applies artificial intelligence techniques to improve performance. In a bid to confront the issues - and the threat to its business - head-on, the company last week entered into a licensing agreement with Logic Programming Associates or LPA Ltd of Wandsworth, South London. Essentially, LPA's expert system toolkit Flex, which runs on an MS-DOS micro or the Apple Mac, will be made available as part of the latest release of Top-One. As both products support Prolog, developers will be able to prototype knowledge-based applications and build knowledge bases on microcomputers either off- or on-line to the mainframe, and, once fine-tuned, load them up to the mainframe. Versions of Top-One are available for ICL and IBM mainframe environments, and in an effort to make it more widely available, versions for Unix, VAX/VMS and 80386-based MS-DOS micros are in development for release in 1989.



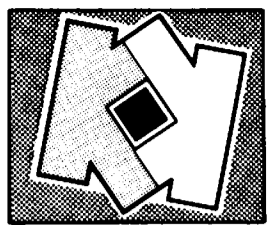
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Motorola claims that the 33MHz version of its 68882 maths co-processor is the first single chip to break the two Whetstone barrier, and now provides a two to four-fold performance increase over its predecessor, the 68881: Apollo Computer was the first to announce its use of the chip in its Series 4500 workstations (UX No 188); costs are \$708 in single quantities and availability is 60 days from order.

- 0 -

The organisers of New York's Unix Expo show (Oct 31-Nov 2) say that over 150 companies will be exhibiting: the show will include a competitive database performance review, seminars on subjects such as Streams and programming under X Windows, and has an associated Job Fair organised by Pencom Systems Inc.

- 0 -

The latest company to endorse MIT's X Windows Version 11 is Sequent Computer Systems Inc, which as announced its own X-based S Windows graphics interface for the Symmetry line: it contains the standard subroutine library (xlib) and the X toolkit, and as X is essentially a collection of multiple processes, it can take advantage of the Symmetry's multi-processor architecture: prices start from \$2,495 on an S27 to \$2,995 on an S81.

- 0 -

Gensym Corp's G2 real-time expert system will be made available on Hewlett Packard HP9000 engineering workstations, following a cooperative development and marketing arrangement between HP and the Cambridge, Massachusetts-based Gensym: G2 can be used to model, simulate and control time-critical applications that need knowledge-based monitoring and control capabilities, and is designed for direct use from engineers through its natural language and graphical user interface: the system will be targeted at manufacturing and industrial automation sectors, with prices starting from \$36,000.

- 0 -

Encore Computer Corporation has been talking about its experimental Parasight debugger, currently in use at several universities in the US: the tool is described as an advanced debugging/profiling environment suited to the control and analysis of parallel programs, including capabilities for race-detection, low-overhead conditional breakpointing and full language interpretation done concurrently with the target program.

- 0 -

NEC Corp says it plans to begin volume production of 4M-bit dynamic RAMs in 1990, from a new \$260m semiconductor plant sited in Hiroshima, which will turn out 4Ms and 1M statics at a rate of 30,000 a month.

mbp Software and Systems (UK) has begun marketing the set of Cobol tools known in the US as Visual Cobol to the UK market: sold under the name mbp COBOL-85, the product is an optimised ANSI-85 COBOL compiler for Motorola-based Unix environments running Unix V.3, and IBM's RT processor.

- 0 -

Telebit Corp of Mountain View California has entered the PS/2 modem market with a high speed internal modem card for the IBM PS/2 Models 50, 60, 70 and 80: the TrailBlazer Plus PS includes integrated support for Kermit, Xmodem, Ymodem and UUCP.

- 0 -

Gould Computer Systems has added a desk-side tempest computer, the DST, to its products meeting the NACSIM 5100A tempesting standard: Gould says it has tempested the major components of the machine rather than the enclosures, and offers either the MPX/32 or UTX/32 (Unix) operating systems, and SCSI peripherals.

- 0 -

Apollo Computer UK has struck a distribution deal with Manchester-based Mancos Computers Ltd: Mancos supplies systems to the commercial market and has a 300-strong dealer network around the UK.

- 0 -

Olivetti Corp of Japan has announced that it will be bringing in an 80386-based workstation by the end of the year and will be pitching it at the CAD/CAM, scientific and technical markets: in Japan, Olivetti specialises in systems integration; it has been in the country since 1961, now employs over 1,000 people, and 95% of its business is in computers, with typewriters making up the balance.

- 0 -

Intergraph Corp, Huntsville, Alabama has acquired ANA Tech Corp, a privately held company supplying hardware and software for scanning and image processing: ANA Tech is to become a division of Intergraph, which will distribute its products through its sales network and as well as other OEM channels - it joins Optronics Inc, another Intergraph company doing scanning and imaging kit: ANA Tech brings the the Eagle line of high-resolution scanners, the Vana Document Analyser, raster-to-vector/raster converter, and associated graphics editing software to Intergraph's line.

- 0 -

Radius Plc of Hull has sold 300,000 of its shares in Logitek Plc, taking its stake below the 5% mark.

Chiyoda Joho Kiki is to install the first Acer Counterpoint System 19K Unix machine in Japan at the Joho Kaihatsu Kenkyuujo or Information Development Research Centre software house: the machine is being pitched at the same markets as the NCR Tower family and basic price for the 19K in Japan is \$28,000.

- 0 -

Cray Electronics Holdings Plc saw net profit for the year to April 30 up 25.1% at £8.0m, including a £501,000 loss due to discontinued operations, on sales up 17.5% at £75.5m; pre-tax profit rose 23.2% to £13.1m. Earnings per share rose 19% to 10.3p.

- 0 -

Motorola Inc has consolidated development, design and marketing of its two microprocessor families, the 68000 and the new 88000 RISC chipset within its High-End Microprocessor Division.

- 0 -

Apple Computer and DEC duly moved their evolving collaboration a little further this week, the most notable development being that DEC will offer maintenance on Apple computers and related equipment - the facility should be a benefit to VAX users because 36% of DEC VAX sites also have Macs: the two also said they'd offer tools to enable applications written for one environment to be adapted to share data with those running in the other.

- 0 -

Apple also announced a 4Mb Mac II memory expansion kit for existing IIs; with console, 4Mb CPU, 40Mb Winchester and 800Kb floppy, it's \$7,269, and an upgrade kit is \$2,400.

- 0 -

The Pittsburgh Supercomputer Center has signed a \$25m order for Cray Research Inc's GaAs Cray-3 being designed by Seymour himself, despite the fact that a prototype will not be built until year-end: target ship date is third quarter 1990.

- 0 -

Altos Computer Systems saw fourth quarter net profit up 336.7% at \$13.1m, after extraordinary credits of \$11.0m this time, \$1.1m last time, on sales up 12.8% at \$45.7m; net profit for the year to June 25 was up 128.9% at \$22.2m, after extraordinary credits of \$14.1m this time, \$9.7m last time, on sales up 14.2% at \$175.8m. Net per share rose 370% to \$1.08 in the quarter, 144% to \$1.78 in the year.

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IEEE AND NBS APPROVE POSIX AND FIPS STANDARDS AT LAST

After months of delay, the Institute of Electrical and Electronics Engineers (IEEE) standards board has finally approved the 1003.1 Portable Operating System Interface (POSIX) standard, completing a long and complex balloting process that started back in November 1987. POSIX provides the specification for developing applications programs and computer operating systems that will allow for applications portability across multi-vendor, Posix-compatible machines. A trial-use POSIX standard was published in 1986, and the newly approved 1003.1 represents an update and revision of that document. And with the IEEE approval, the American National Bureau of Standards (NBS) has indicated that it will start the revision process on the interim FIPS (Federal Information Processing Standards) issued in April (UX No 180) to bring it into line with the IEEE standard. The interim FIPS, a standard that can be used in procurement contract request for proposals, was based on draft 12, while the version approved today is draft 13. "A number of minor differences exist", said P1003.1 chairperson Jim Isaak "but for government agencies, the interim FIPS, IEEE standard and NBS Posix conformance testing suite provide a solid base for systems procurement and evaluation". Isaak estimated that a full FIPS, which takes advantage of features included in Berkeley Unix, rather than System V, would be ready in around six months. Meanwhile, said Isaak, organisations beyond US federal government users could now specify POSIX conformance to insure applications portability. Next stage for POSIX is submission to ANSI (the American National Standards Institute) and to ISO (the International Standardisation Organisation) for full status as an international standard; a process which could take another year, according to Isaak. But, he said, IEEE approval gives those organisations "a very stable reference document" to work on. Actual publication of IEEE 1003.1 will take another few months.

...AND DEC IS THE FIRST TO CONFORM

ULTRIX 3.0 IS POSIX, SVID AND X/OPEN COMPATIBLE

DEC's promised POSIX and X/Open compatible Release 3 of Ultrix-32 (UX No 181), announced this week, turns out to come with some major new features and products, as well as giving the company the opportunity to beat the drum yet again about its standards commitment. DEC, which says its Unix revenues over the last year grew to \$1.1bn, added its first manifestation of the DECwindows programme in the form of the X User Interface, a clustering facility based on NFS, and a series of communications products improving links to VAX/VMS and IBM systems. Release 3.0 is claimed to be fully compliant with both the IEEE 1003.1 POSIX and with the National Bureau of Standards interim FIPS - both of which received ratification only the day before DEC's announcement on Tuesday. In addition, DEC appears to have changed its stance on providing System V compatibility to the extent that Release 3 "complies with SVID II, Volume I" - which covers the base system but not networking or terminal extensions. It also, the company says, complies with the X/Open base level portability definition and can be brought up to full Common Applications Environment and OSF Level 0 compliance with "available layered products". Further details inside.

TODAY AUTHORS BBJ IN RECEIVERSHIP

BBJ, the Sydney, Australia-based developers of the Today fourth generation language have gone into receivership following the failure of talks to provide additional funding. Rescue deals are reportedly under negotiation. (Full story Page 4).

SCO SYSTEM V/386 WILL USE UNIX TRADEMARK

The Santa Cruz Operation is to use the Unix trademark on future releases of its 80386-based operating systems, previously sold under the Xenix name, according to AT&T's system software director Mike DeFazio. The move, revealed at SCO's developers forum taking place this week in Santa Cruz, California, signals the end of a separate identity for the Xenix operating system, the most popular Unix variant in use today, which was aimed especially at the Intel-based microcomputer market by the original developers Microsoft Corp. As a result of joint work carried out by AT&T and Microsoft (UX 118,144), AT&T's System V/386 Release 2.3, previewed at the European Unix User Show (UX no 183), combines the features of both Unix and Xenix, and this week was announced by AT&T as "generally available to the industry". In addition, said AT&T, the Unix trademark is for the first time licensable to customers distributing the new release. SCO's version, the first to use the Unix name, will be available for testing "before the end of the year", with retail availability in the first quarter of 1989: it will support both AT and Micro Channel 80386-based machines, and OEM adaptations will be available.

CHOTS DECISION DUE THIS WEEK

After a four month delay, due apparently to an "over optimistic schedule" (UX No 174), the UK Ministry of Defence says it is now ready to decide on the two consortia that will be given the go-ahead to produce prototype systems for the massive CHOTS project, worth an estimated £300 million. Bids for the Corporate Headquarters Office Technology System are currently being evaluated, and a decision on the two systems to be prototyped is due this Friday, August 26th. The choice is between four consortia led by British Telecom, GEC Telecommunications, ICL, and Software Sciences, and Unix System V is a requirement for the 40 site, 24,000 user office automation system.

MICROSOFT SETS POSIX COMPATIBILITY PLAN TO "RESCUE" OS/2

The OS/2 operating system seems to be joining the 9370 and RT on IBM's list of intended-to-be-strategic products that need urgent attention if they are to be rescued from the dismal fate that befell the 8100 and the Series 1 - and Microsoft Corp's Bill Gates revealed on a couple of occasions recently that a key move for OS/2 would be a development effort to add Posix compatibility to the operating system. Posix, the Portable operating system interface standard, can either run native as an integral part of the Unix System V operating system, or hosted above the native operating system, but crucially provides an Applications Programming Interface, the promise being that if developers write to this interface, their applications will run with little or no modification on any Posix-compliant system. Commenting on the Microsoft plan, Dominic Dunlop of Sphinx Ltd declared that DEC's VMS - for which Posix compatibility is promised, could be considered a more suitable starting point than OS/2. "Posix-compatibility does not appear to have been one of Microsoft's design goals", said Dunlop, pointing out that aspects of terminal device control would be particularly fraught in the context of putting Posix on top of OS/2. According to the West German weekly Computerwoche, OS/2 Extended Edition is generating far less interest than its proponents had hoped, with software houses and dealers describing demand as desirous. A frequently-aired criticism is that the operating system is simply too big and much too expensive: if you want to vote the IBM ticket, PS/2s ain't cheap, the operating system is much more expensive than MS-DOS, and you need a minimum of about 512Kb memory and a 30Mfb hard disk to run OS/2 Extended Edition.

ZENITH PREVIEWES ITS 386 MP XENIX MACHINE

Zenith Data Systems late last week duly announced its multiprocessor 80386-based Unix machine, suggestions of which first surfaced here back in April (UX No 173). The new machine comes with up to six 80386s and, as reported (UX No 185) is based on the multiprocessor Xenix System V system developed by Corollary Inc, Irvine, California as the ATtain 386/mp. Zenith has had prototypes of the machine in beta test since February, and is describing the machine as a workgroup system capable of accommodating multiple users at both dumb terminals and a network of MS-DOS micros to create a system capable of running "virtually any existing applications software" written for Unix and MS-DOS. The launch was really a pre-announcement - needed because Zenith is bidding the thing for a major government contract - and prices and configurations will not be announced until early next year. But the company stressed that the machines will be built from standard personal computer components and will have an AT-compatible bus, removable disk drives, an open backplane with multiple expansion slots, and a fault-tolerant power supply. The shared memory multiprocessor architecture was developed by Corollary, and consists of a high-speed bus and 386 co-processor boards. Corollary also developed a microprocessor-based terminal concentrator for the box, and worked with Zenith Data and The Santa Cruz Operation on the multiprocessor version of SCO Xenix System V it uses.

SUN OPENS 386i MANUFACTURING PLANT

Sun Microsystems has opened a new manufacturing plant for its Sun386i manufacturing facility at Westford, Massachusetts, from which it will also test and distribute the 80386-based workstation line, said to have been far more successful than the company itself anticipated. Sun will employ over 150 people at the plant, which will utilise a new flexible manufacturing system integrating Sun file servers and programmable logic controllers over a network file system network.

SALES POOR, SO PRIME BATTENS HATCHES, SETS HIRING FREEZE

Prime Computer Inc had analysts scurrying to downgrade their forecasts for all minicomputer manufacturers after it came out with a shock warning that its third quarter figures would be at least 20% worse than the consensus forecast on Wall Street, on sales down 2% to 5% compared with the \$408m of the second quarter. The warning was issued after the market closed, but caused Prime shares to tumble \$1.375 to \$12.50 in early trading in New York the next day. Prime's guidance implies net of \$10.8m at the very best, against \$15.9m for the third quarter a year ago. The company accompanied the announcement with several other indications of strain, saying that it had instituted a worldwide hiring freeze which is not to be lifted until the turnover outlook becomes more favourable, and is examining operating expenses for possible delays or cancellations of projects. The company has already abandoned its marketing of the Cydrome minisupercomputer, and last week dumped the original - and hardly venerable 16MHz model in its EXL 80386-based line of low-end Unix machines. It also felt constrained to slash prices on the faster two models, with the base price for the 20MHz EXL-320 tumbling by a substantial 31% to \$17,900 and the EXL-825 falling 15.25% to \$38,900. The factors blamed by the Natick minimaker for its deteriorating outlook include the impact of the shake-up in its worldwide sales force in wake of the Computervision acquisition; a much stronger dependence on non-US business, which is historically weak during the summer months; the continuing recovery of the US dollar; and the persistent sluggishness of the US minicomputer market. The weakness is occurring in both its General Markets and Computervision divisions, although by no means uniformly across the world.

PYRAMID AND APOLLO JOIN FORCES IN NETWORK COMPUTING PACT

Pyramid Technology Corp has set up a marketing agreement with Apollo Computer Inc for the joint promotion of Pyramid minicomputers with Apollo workstations. The agreement calls for both companies to set up marketing and technical teams to develop integrated networking software to run between the two systems, using Apollo's Network Computing System (NCS). The two companies have also announced joint support for distributed applications accessing Oracle, Ingres, Informix or Sybase databases.

DEC LAUNCHES "INDUSTRY STANDARD" ULTRIX RELEASE 3

Along with a string of communications products that included a higher level network management system, three network vservers, Open Systems Interconnection file transfer, and more products for communicating with the IBM world, DEC picked Tuesday to announce its long-awaited "standard" version of Ultrix - able to boast that it is "first to comply with all key industry standards" (see front page). The new features of Ultrix-32 Version 3 include Ultrix NFS Clusters - which appears to be more of a distributed file system than a true VMS VAXcluster equivalent. It is based on the NFS protocols implemented over dual path 70Mbit links, and allows the usual 16 VAXcluster devices - VAX CPUs and HSC 70 peripheral controllers - to share a database "larger than 75 gigabytes". Also new are a gateway between the proprietary LAT and BSD Telnet terminal protocols, the BSD 4.3 Berkeley Internet Name Domain server and NFS file locking. The release is due to ship in December and UK prices are from £1,856 for the MicroVAX 2000 to £49,555 for the VAX 8820. DECwindows sees the light of day with XUI - a licence is bundled with all VAXstations - and the first release includes the User Interface Library and programmers' style guide. Other products include VMS/Ultrix connection, an implementation of NFS and TCP/IP on VMS that is said to allow VMS VAXclusters to act as large and reliable NFS servers to Unix workstations. But it's not cheap: £6,630 on a MicroVAX 3600 to £111,384 on a VAX 8978 or VAXcluster equivalent; it ships in December. Ultrix Mail Connection, already demonstrated at various shows, links Ultrix mail users to the DEC MAILbus and therefore to All-in-1, X.400 mail, IBM Profs and SNADS. Due to ship this Autumn, it costs from £580 on a VAXstation 2000 to £14,034 on an 8800. Finally, DEC has upgraded DECnet support with DECnet-Ultrix V3, allowing Ultrix systems to be linked to all operating systems supported by DECnet Phase III/IV. The VAX 6210, 6220, 8810, 8820, and VAXstation 8000 are supported, and the product includes a gateway between DECnet and Internet networks. Priced from £464 on VS 2000 to £8725, it ships in the Autumn.

DATA GENERAL SHIPS DG/UX UNIX REVISION 4

Stealing a march on its old rivals DEC, Data General Corp launched its own new Unix version the day before - and included the support for symmetrical multiprocessing. Shipments of DG's Revision 4.0 of its native DG/UX operating system is based on Unix System V.3 and includes a new kernel with complete symmetrical multiprocessor support, a "contemporary" file system that provides full recovery and high capacity storage support; and enhanced portability platform including most of the Berkeley extensions. Now available on the Eclipse MVs, it will also be implemented on the planned Motorola 88000 RISC system now under development. Like the DEC offering, it includes a full implementation of Sun's Network File System. The company implemented the Unix kernel by identifying and localising machine-dependent code to facilitate its transfer to other architectures, including RISC.

OLIVETTI DENIES DISCUSSIONS WITH NOKIA OVER ALLIANCE

Ing Olivetti SpA has "strongly and firmly" denied reports that discussions are underway between Nokia Oy's Nokia Data unit and Olivetti that might result in a comprehensive alliance and product exchange agreement. Olivetti's Danish representative on Friday insisted that the only current agreement between Nokia Data and Olivetti is a limited product exchange, and that only for the Danish market - but newspaper reports in Helsinki and Germany suggested that Nokia Oy would be front of the queue of buyers if AT&T decides to divest its 23.5% of Olivetti. It seems likely that Nokia Data would market Olivetti products in its Scandinavian stronghold - Olivetti has been making strenuous efforts this year to expand its Scandinavian subsidiaries. It is also possible that the two could agree a similar arrangement in reverse in countries where Olivetti is strong at Nokia at present is weak. Neither confirmation or denial could be obtained from Nokia, although an Olivetti spokesman said the company had denied it, but "everybody was on holiday and ignored it".

£28 MILLION MOD TRAWLERMAN CONTRACT GOES TO SOFTWARE SCIENCES

The Ministry of Defence has awarded its £28 million Trawlerman development contract to a consortium led by Thorn EMI subsidiary Software Sciences. Trawlerman is a secure database and office automation system for MOD headquarters staff, and development is scheduled to span 3 years, involving 200 man years work from a 90-strong technical team. Software Sciences has prime contractor responsibility with Honeywell Bull as its consortium partner, contributing its SCOMP Plus secure system. Main subcontractors are ICL, which will provide the database facility on Series 39 mainframes, and Lynwood Scientific providing tempered Unix workstations. Hardware for the distributed system will also be supplied by DEC, Hewlett Packard and Sun. Other consortium members are Dataguild Ltd, MSS, Logisys, Automate, and EFD, which will provide human factors skills.

METAFLOW TO MAKE ECL SPARC, USE IT IN 100 MFLOPS STATION

Metaflow Technologies Inc, owned by Elan Industries Inc, is planning to build a superworkstation rated at 100 MIPS and 100 MFLOPS for launch in April - and has signed an agreement with Sun Microsystems Inc that allows it to make an ECL version of the Sparc RISC microprocessor for use in the new machine. It has also taken a licence for Sun's SunOS Unix. The multiprocessor will be pitched at engineering users of mainframes.

60 ABAQS OUT TO SOFTWARE HOUSES

To silence the doubters, Atari says that some 60 early units of its Abaq transputer-based workstation - for which there is still no official release date - are out with software developers. The delayed development is not due to reach the market until next year, but Atari still has hopes of introducing new performance standards with the sub-£5,000 product, which will include from one to 17 Inmos T800-20 20MHz, 10MIPS transputers running under the distributed Helios operating system developed by Perihelion Software Ltd.

BBJ TO SELL TODAY 4GL TECHNOLOGY

BBJ Computers, the Australian author of the Today fourth generation language, is seeking to sell off its technology, following the breakdown of attempts to set up a friendly takeover bid from Australian companies Vertical Software Holdings and Trilogy Business Systems. Computerworld Australia reports that BBJ has placed itself under the control of a mortgagee-in-possession due to lack of funds, with daily financial flows now being controlled by accountants Deloitte, Haskins and Sells. Critics say the company diversified into applications development and overstretched its resources. BBJ was listed on the Australian market two years ago in a \$A2.3 million public float. Managing Director Max Nicholls said the most likely outcome was for BBJ to be split in half with each of its major divisions going to a separate buyer - with most interest centered on the Today division. And Australian sources were said to be confident that a strong group would emerge in the near future to take over Today, which is reported to have a worldwide user base of over 3000, and is distributed in the UK by Parsoft Ltd in Redhill, Surrey.

MOTOROLA PROMISES 68040 BOARDS BY FEBRUARY

Although there has been no word yet from Motorola's Semiconductor division about the availability of its next generation MC68040, another division of the company, Motorola Computer Systems, says it will have 68040 beta release boards as early as next February. So far, only a brief data sheet on the 15 MIP, 4 MFLOP processor has been issued: it is said to integrate integer and floating point units into a single chip that include one million active devices (UX No 176). Motorola also said it would be ready to announce products based on the Motorola 88000 RISC chip by year-end, including 17 MIPS boards in November that could be plugged into existing Motorola hardware. Full applications binary interface specifications for 68000 and 88000 users will be complete by January 1989, said Marketing Manager John Shouler, who claimed that Motorola Computer Systems was now the fifth largest supplier of Unix boxes in Europe.

PYRAMID AND INFORMIX IN PORTING AND MARKETING DEAL

Pyramid Technology has signed a strategic marketing agreement with Informix Corp of Menlo Park, California, which will allow Pyramid to resell Informix database and office automation software on its range of RISC-based superminis. Under the agreement, a full-time engineer from Pyramid will work at Informix, porting software and "fine-tuning" it to Pyramid's multiprocessor architecture in conjunction with the company's porting and research and development groups. Seven Informix products are currently running on Pyramid hardware, including Informix-Turbo, which according to Pyramid "performs particularly well on our multiprocessor systems". The SmartWare line of business software is scheduled to be ported to Pyramid's Series 9000-TA family early next year.

DYNASOFT LAUNCHES C2 SECURE SYSTEM TO WIDER EUROPEAN MARKETS

The fortunes of tiny Swedish software house Dynasoft of Stockholm have been on the up since its take over last year by the wealthy Swedish Wallenberg investment group. Dynasoft developed a C2 secure applications environment called BoKS (standing for Business Organisation Control System in Swedish) in conjunction with the Swedish Department of Defence, and is now set to market the product internationally. With newly established offices in Heathrow, UK, the company says it already has £3.5 million worth of deals in the pipeline: Managing director Philip Clarke cited the customers as NCR Austria, which recently used the software to secure it a \$25 million deal with the Austrian Volkesbank; IBM Austria; Unisys in Switzerland and Austria; and a European-wide arrangement with Honeywell Bull. According to Clarke, the product sits between the Unix operating system and applications programs, and can be installed by a novice in ten minutes. BoKS has a companion product, a security front-end system called Minuet, which provides a menu-tree system to control access. BoKS can be used to provide security for a complete system or for selective parts, such as a particular application or terminal. Other features include inactive expiry system, which logs out users after a pre-set time if the keyboard is left unattended, full logs of any trespass attempts, hiding an encryption of any secure file that is subject to unauthorised access, and a secure version of the Unix passwd command, which logs unauthorised attempts to change the password while alerting the system administrator.

READY SYSTEMS LINKS REAL-TIME VTRX WITH UNIX

Real-time specialists Ready Systems of Sunnyvale, California, has launched a new software development and run-time environment for single, multiple or networked microprocessors. VRX Velocity uses the Sun-3 as a standard hardware platform, taking advantage of Sun's windowing interface and networking architecture via TCP/IP and Sockets. VRTX Velocity links products across the software life-cycle and integrates host development and target execution, according to Ready Systems - it uses a range of modular, reusable tools specifically for linking host and target systems, such as host-resident development tools for requirements analysis, high-level and detailed design, and cross compilers for C and Ada. It also includes the Hyperlink cross-development system for writing, compiling, mapping and downloading VTRX real-time applications with high-level Unix tools. VRTX Velocity couples the real-time operating system, VRTX32, with the networking flexibility of TCP/IP and sockets via Ready Systems' TNX TCP/IP Networking Executive to provide the interface between VRTX32 applications and UNIX, or other VRTX32 systems.

AT&T SIGNS UP WITH UNIPLEX

Uniplex Ltd, based in St Albans, UK, has signed a deal with AT&T for the marketing and support of its range of business software on AT&T systems. AT&T will also provide Uniplex software, including integrated word processor, spreadsheet and relational database, to its major accounts through its traditional sales channels. The British Library and the Regional Transit Authority of New Orleans are amongst existing customers using Uniplex on AT&T kit.

UCL TO DISTRIBUTE FIRST UNIX VERSION OF STATUS

Originally developed by the UK Atomic Research Centre at Harwell, and later marketed to third parties such as Cap Gemini Sogati (UX No 60), UCL Information Systems has struck a deal with Harwell for permission to market a Unix version of the Status text retrieval package for its Fortune Formula range in the UK. Status was designed for vast amounts of scientific research on nuclear reactors and a wide range of related scientific data - and was developed so that provided you knew roughly what you were looking for, it would get you to the right documents. Status has been available on proprietary systems from IBM, DEC, Honeywell and Prime, but UCL says it has the first Unix version, having carried out the port in conjunction with Harwell itself. The Fortune range, recently strengthened at the top end by Arix Corp hardware re-badged as the 8000 Series (UX No 175), is mainly aimed at office automation applications, and director of information systems Graham Harrington says that the Status system will be a complementary product to its existing office software. However, the company is particularly looking at those applications needing a particularly large database, such as local and central government, where lengthy council minutes have to be stored and retrieved. Storage on the Arix-based 8000 Series can be expanded to 10.5 gigabytes, or more with optical disks. Harrington said he was expecting to generate £1 million in sales over the next twelve months, and would be selling the Status system through third parties as well as direct.

IBM PLANS "AT RELAUNCH" IN THE SHAPE OF PS/2 MODEL 35

IBM is believed to be set to emulate the Coca Cola company and reintroduce its equivalent of Coke Classic in the shape of the Personal Computer AT - in the guise of a PS/2 Model 35: PC Week believes that the 80286-based machine, with an AT bus but with the VGA graphics from PS/2, will come out in the US next month, at between \$2,000 and \$3,000. If the reports prove true, it will be a devastating admission by IBM that its strategy to bury the old standard Personal Computer under machines using its MicroChannel Architecture has failed - all the signs are that while the PS/2 is doing fairly well in corporate accounts, sales through dealers and retail outlets are far short of IBM's targets, if not downright dismal.

WRITS FLY AMONGST CHIP-MAKERS

Amidst claims that it is unwilling to "subsidise development for competitors", National Semiconductor Corp is seeking damages against Cypress Semiconductor, Cypress subsidiary Aspen Semiconductor, and former Aspen president Narpal Bhandari: specific grudges cover resource wasting and the misappropriation of a number of trade secrets relating to NatSemi's Aspect advanced polysilicon technology and other unspecified VSLI technologies. And Cypress is on the receiving end of further claims from Advanced Micro Devices Inc, Sunnyvale, California: AMD is suing Atmel Corp, Gazelle Microcircuits Inc and Samsung Semiconductor Inc as well as Cypress, in order to halt manufacture and sale of devices alleged to infringe patents on the Am22V10 logic array.

MORE TRON FROM MITSUBISHI AND TOSHIBA

Mitsubishi Electric Corp has developed an operating system, which it is calling MR770, for its 16-bit Tron microcontroller: the operating system is claimed to improve processing speed fourfold, and Mitsubishi will incorporate the chip in its MEPLS7700 16-bit microcomputer which it will start delivering in November: the MR7700 is the first version of Tron to implement the I-Tron specifications - I-Tron is the real-time industrial variant; task switching time is 32 microseconds, and the overall speed of the part with the operating system is about four times faster than Mitsubishi's 32-bit microprocessor; the operating system has 35 modules, including functions such as time management, input-output drivers and interrupt management, and the microcontrollers are expected to find their embedded way into anything from industrial robots to facsimile machines.

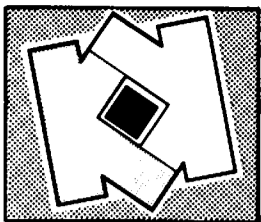
* Toshiba Corp last week unveiled its TX-1 family of 32-bit microprocessors optimised for the Tron operating system. The company says the TX-1 line is part of its commitment to expand the family of chips for the chameleon Tron environment. The microprocessors, each integrating about 450,000 transistors onto a 10-square millimetre chip, boast a speed of 5m calculations per second. Toshiba promises samples of the TX-1 by the end of December.

...AS OMRON TATEISI PLANS SIGMA PUSH

Omron Tateisi, best known for its point of sale terminals outside Japan, has decided to strengthen its office automation equipment division, hoping to bring its sales up to 10% of its total revenue within a year or two, and the first step will be to develop information systems that apply its experience in the factory automation field: amongst plans for point-of-sale data collection hardware and local area network equipment, the company says it is planning to start selling Sigma workstations more aggressively, in particular offering a computer-aided design system based on the Sigma workstation, (UX No 116) which it hopes will bring it in \$15m of business altogether; it has already sold around 500 workstations to users such as Tohoku University and the Tokyo Industry University; currently a mere 3% of Omron \$2,121m annual sales comes from the office automation market - 65% is currently control components, 23% is point-of-sale kit.

OPEN SOFTWARE FOUNDATION FINDS HOME AT SYMBOLICS HQ

The Open Software Foundation has chosen Symbolics Inc's Cambridge, Massachusetts headquarters, already half-vacated, as its permanent home. OSF says it will move from its current building nearby next month, while Symbolics will completely vacate the building a couple of months later, once it has found smaller premises more suited to its straightened means near Boston.



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Troubled computer terminal manufacturer Cifer Plc (UX No 92), which is forecasting losses of £210,000 for the year to September 30, has announced that it is to receive a £3.7m cash injection as part of a reconstruction package: Lloyds Bank and venture capitalists 3i Plc have agreed to convert £1.2m worth of debt into equity and reschedule a further £1.2m loan, and the Melksham, Wiltshire based company will also receive £2.5m worth of new funds from a consortium of new investors headed by Bill Weinstein, a director of computer suppliers MBS Group, and backed by 3i Plc, B & C Ventures Ltd and British & Commonwealth Merchant Bank Plc.

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Honeywell Bull is expected to reveal extensions to its XPS 100 line towards the end of September at the beginning of October: top-of-the-range models will extend up to 144 users, and the boxes will offer "increased connectivity and greater disk storage", according to a spokesman.

- 0 -

Cambridge Micro Computers, Cambridge, UK, has launched a new 68020-based server with 4Mb RAM, high resolution screen, tape back-up, Ethernet, X-Windows and NFS: there are desktop or deskside configurations, with the entry-level system costing £9950.

- 0 -

Sun Microsystems' Bill Joy is scheduled to speak on "The Future of Computing: The Open Systems Imperative" on the last day of the TCP/IP networking protocol, scheduled for September 26-30th at the Santa Clara Convention Centre, California.

- 0 -

Unipress Software Inc has a new version of its Ada-macs text editor for Ada: the product is a multi-window editor that understands Ada language syntax, allowing easy typing of Ada constructs and integration of subroutines: version 2.15 includes interactive help, Ada site-wide syntax style rules, and an on-line Ada-keyword database: price is \$645 for workstations, \$1590 for large systems and \$3995 for superminis running Unix.

- 0 -

Intel Scientific Computers in Swindon, UK, says it now has "second generation" LISP for its iPSC/2 hypercube systems through a three-way international development with Lucid Inc, Nenlo Park, California, for Common Lisp; and Artificial Intelligence Ltd, Watford, UK, which provided Lisp-style message passing for the 16-128 processor Intel 80386-based systems.

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Symbolics Inc, Cambridge, Massachusetts, is being hustled by an investment group sitting on its share register: the group consists of three units of the San Francisco high-tech investment house Hambrecht & Quist Inc, including H&Q London Ventures of Edinburgh and Hambrecht & Quist Venture Partners, and says it now holds 6.5% of the shares "as an investment", up from the 5.1% notified in April. The group's request for a seat on the board was denied.

- 0 -

British Telecom, intent on reaching wider markets with its hardware line (UX No 193), has taken Zenith Data Systems' latest 16MHz 386-based MS-DOS micro to expand its range of AT-compatible desk-top machines; prices for the M5330 series, which comprises two models, each with a choice of 2Mb or 4Mb of memory, will start at £3,345.

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Claiming performance of a "sustained" 1MFLOPS and integer calculations at 10 MIPS for a desk-based MS-DOS micro system, Bristol, UK-based Cesium Ltd has launched its new Scientific Accelerator; based on Inmos' latest T-800 Transputer which has a built-in floating point unit; the product comprises a slot-in board and 16Mb of memory, and comes, for £8,500, in C or Fortran versions: the company, which believes that its product will pose a serious threat to the workstation market, also offers turnkey solutions and has a range of scientific software packages.

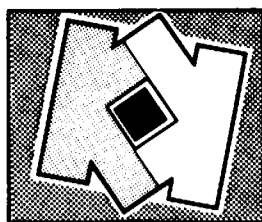
- 0 -

Look for the new generation of business personal computers from Amstrad Plc to come out as the PC2000 series - and a lot of reputations are riding on the base 80386 model costing just £1,700 with 1Mb CPU, floppy drive and a monitor: 1,000 System Centres are being lined up to market the things in the UK.

- 0 -

Informix Corp has been hit by a shareholder class action suit alleging that the company made excessively enthusiastic noises about its prospects at the time of its acquisition of Innovative Software Inc.

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Stratus Computer Inc is getting enviable backing in Japan, and a new company has been formed specifically to market networked systems based on its XA2000 Continuous Processing System, for which C Itoh is the primary distributor: the new company, JCIS, is 60% owned by Japan Systems, 30% by C Itoh Data Systems, 10% by Intelligent Wave Inc, but software development for the new firm will be done by Japan Systems and Intelligent Wave.

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Data General Corp is buying its new Dasher/386 16MHz 80386-based AT-alike from Zenith Data Systems, Glenview, Illinois: in the UK it costs £3,851 with 1Mb processor, mono monitor and 40Mb disk.

- 0 -

Apple Computer Inc has asked Judge Robert Aguilar to dismiss himself from hearing Apple's suit against Microsoft Corp and Hewlett-Packard Co on the grounds that his son works for Hewlett, and the company might be hurt by an unfavourable outcome of the suit alleging copyright infringement in a version of Windows and in Hewlett's NewWave.

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IBM's recent offer of IntelliCorp's Knowledge Engineering Environment under MVS rounds out the availability of KEE in the IBM world: it is already on the RT Unix machine, and a subset has been implemented on the AT by Technology Applications Inc.

- 0 -

And IBM has joined forces with Sumitomo Bank Capital Markets Inc and New-York-based Decision Software Inc to develop a front office system to enable securities firms to automate more of their bookkeeping, so that share and bond trades are automatically recorded in the database as they are completed, enabling them to make much more up-to-date portfolio revaluations: the expert trading system will be based on the IBM RT Unix workstation, and is being designed to enable firms that trade securities to coordinate financial transactions by using a common database containing information on all fixed income and foreign exchange instruments including bonds, futures, options and swaps: the system will be delivered first to Sumitomo Bank Capital Markets in New York and then be made generally available to the financial industry in the US and other countries, being jointly marketed by IBM and Decision.

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Number 195

TEXAS-SUN PROMISE NEXT GENERATION SPARC - AI SYSTEMS UNDER DEVELOPMENT

- SECOND SOURCE AGREEMENT WITH CYPRESS

Sun Microsystems confirmed this week that Texas Instruments is the latest manufacturer licensed to fabricate a version of the Sparc RISC microprocessor - and that it intends to use it as the basis of new high end Texas Instruments Data Systems computers. That decision is something of a blow to Motorola Inc, since Texas currently uses the 68000 family in its high-end Unix machines, but the company is clearly unhappy at having to buy in microprocessors from an arch-rival. Texas will be jointly developing an advanced EPIC-IIB version of the Sparc with Sun, and says it plans to use the Sparc for future high-end commercial Unix systems that incorporate artificial intelligence capabilities. And Texas is to second source the version of the Sparc made by Cypress Semiconductor, San Jose, which fabricates in CMOS the 25MHz version of the part used Sun in its Sun-4 workstations. Cypress has also announced a 33MHz version of the chip. Texas Instruments first hinted at its interest in the Sparc back in March when it came out with the SN74ACT8847 maths co-processor aimed at Sparc developers (UX No 173). The company has now signed a five year, alternate source agreement with Cypress, of San Jose, California, under which Cypress will licence its Sparc integer processor, memory management unit and cache controller, cache RAM, and cache tag chips. In return Texas has given Cypress the resale rights to its floating point unit, and both companies will manufacture the complete set. Texas will become the sixth manufacturer - and the second major after Fujitsu Ltd's US arm - to take a licence to manufacture the Sun chip.

...AS SOLBOURNE/MATSUSHITA OUTLINE SPARC SUPERWORKSTATION PLANS

The workstation market is not yet too crowded to allow in another player, at least not according to newcomers Solbourne Computer Inc, which revealed plans this week to launch a low cost range of superworkstations based on a highly integrated implementation of Sun's SPARC chip. In fact, the company has been working on the project for some time under the name SAE Inc, with funding and backing from Japanese industrial giant Matsushita Electric (UX No 158) - it began working on the project back at the beginning of 1987, and evidently replaced whatever proprietary arithmetic logic unit it originally had in mind with Sun's SPARC at a later stage. Solbourne says it will be launching workstations "early next year", based on the version of the Sparc it has designed with development and manufacturing assistance from Matsushita: the chip will combine integer cpu, floating point processor, instruction and data caches, and memory management unit all on a single chip, along with 64-bit data path width to speed the flow of data between memory and microprocessor. Few further details are forthcoming at this stage. But the family of workstations built around the chip will support multi-processors, and will be pitched at products such as the Sun-4, Apollo Series 10000, HP 9000 Model 835, and Silicon Graphics 4D machines - becoming the first Sparc products to directly compete with Sun's own. According to Solbourne Marketing Manager Brian Doyle the integration of the cpu will allow Solbourne to achieve the lower cost necessary for high volume sales. "The price sensitivity point is around \$15,000 per workstation", said Doyle. Sparc-ABI (applications binary interface) compatible software would give the machines a range of ready-to-run applications, according to Doyle. Matsushita is expected to sell the products in Japan, leaving Solbourne to concentrate on the US and European markets.

X WINDOWS GROUP IN BID FOR OSF INTERFACE

A committee set up within the group of companies known as the X Consortium (UX No 165) is working on a standard core components offering for X Windows. The intention, according to the project manager, Bob Miller from Hewlett Packard, is "to guide the Open Software Foundation's component selection process" for its user interface evaluation meetings, beginning next month (UX No 193). The working Group, which includes representatives from AT&T, DEC, HP, IBM, Kodak, Sony, Tektronix, and the OSF itself, will base the core component offering on the Xt Intrinsic Release 2 toolkit, based largely on work completed by DEC. The other main elements will be a set of "widgets", or functions, provided by Hewlett Packard. HP has developed two set of widgets, which specify functions for producing graphics such as scroll bars, windows and buttons: a "two-dimensional" version will be included in the core components specification, while a "three-dimensional" version will be used for HP's own systems. On the 3D version, a light border is put at the top a button, and a dark border at the bottom, which change places when the button is "pressed". Both versions have the same programming interface. If accepted, the components offering could provide a more solid base for developers of X application software. Ray Anderson, of X specialists IXI Ltd, based in Cambridge, UK, said that such a standard "would allow developers to build applications at a higher level, knowing the same components were available on any X machine". The group has set a schedule to have preliminary version distributed by September 15th, and after four draft editions, a final specification by June 15th 1989.

UNIX DEFENCE CONTRACTS MAKE PROGRESS

As the two finalists in the bid for the UK Ministry of Defence CHOTS were revealed this week as British Telecom and ICL (see page three), an even larger US contract was on the verge of being finalised. The lugubriously-named Army Command and Control System Common Hardware and Software (ACCS CHS) programme, valued at \$800 million over five years, has been narrowed down to two bidders: Magnavox Electronic Systems using Unix-based hardware from Apple Computer, and New-York-based Miltope Corporation, bidding Hewlett Packard hardware. Both companies have selected Uniplex software for the bids, which will involve the installation of some 10,000 terminals throughout US Army sites. The contract winner will be announced this week.

XEROX SPINS OFF ARTIFICIAL INTELLIGENCE INTO ENVOS CORP

Its Artificial Intelligence Systems Business Unit has turned out to be yet another disappointment for Xerox Corp, and the company is spinning the unit off into a separate company to be majority-owned by the 70 employees, with Xerox and its Rank Xerox Ltd affiliate each holding unspecified minority stakes. Unpromisingly baptised Envos Corp and based in Mountain View, California, the new company will support existing Xerox Star 1100 series workstations and to sell the 1186 model, but the move effectively marks the end of the line for the Star because the new firm is reimplementing all its viable software for the Sun-3 and Sun-4 Unix workstations from Mountain View neighbour Sun Microsystems. Envos has a two-year renewable agreement with the Xerox Palo Alto Research Center that allows it to incorporate PARC's advanced programming technologies into its products, and Rank Xerox and Fuji Xerox Co Ltd will market its products in Europe and the Far East respectively. Envos starts life with five products, all going onto Sun stations: Medley was the Xerox Artificial Intelligence Development Environment, for development in InterLisp and Common Lisp; Loops, that provides object- and access-oriented programming extensions for Medley; Rooms (UX No 185) is a user interface tool that enables expansion of a display by creating virtual work spaces; Flexis, from Savoir Inc, is used for manufacturing cell design, simulation and control within a Manufacturing Automation Protocol, MAP, environment; and Factories, from 5thGen Inc, is for modelling and controlling a complete manufacturing line. The choice of Sun reflects the fact that Xerox will use the Sparc RISC as the basis of future products, and that Sun chose Xerox graphical user interface technology as the basis of the Open Look front-end it has developed for Unix System V.4 (UX No 175).

... AS IT BUYS IN DATABASE SKILLS FROM CROWNTEK'S COMPUTER CORP OF AMERICA;

Immediately after disengaging from the artificial intelligence business, Xerox Corp made a significant expansion of its general software business by agreeing to acquire the advanced information technology division of Computer Corp of America from Canadian financial and health care conglomerate CrownX Inc of Toronto. CrownX put its Crowntek portfolio of software interests on the block in November. According to Computer Corp, trading under the CrownTek name in the UK, the division going to Xerox, which specialises in the research and development of database software systems, has no connection with Computer Corp's core Model 204 IBM relational database system. The division does research mainly related to DEC database software products. It will become part of the Xerox custom systems division, and Xerox hopes to complete the acquisition this quarter; terms were not disclosed. The intention is that the rest of Computer Corp of America and CrownTek should be acquired by the management, and negotiations are on course for financial details be given next month.

DISTRIBUTORS CLUB TOGETHER TO BUY BBJ'S TODAY TECHNOLOGY

A buyer for the Today applications generator product and technology developed by troubled Melbourne, Australia software house BBJ Computers Pty, (UX No 194) has emerged in the form of a consortium of the product's distributors, backed by an unnamed international bank. A new company, expected to be called Today 4GE, has been formed and has struck a multi-million dollar deal for the Today range of software development tools, and will be putting a "substantial investment" into further development, and marketing. Backers include UK distributor Parsoft Ltd, which said a Today European support centre would be formed. Further details have not yet been worked out. The company's initial funding included a 27.5% stake from Hewlett-Packard Australia (UX No 49).

SEPTEMBER 5 DATE FOR APRICOT'S 80386 MICROCHANNEL BOXES

Apricot Computers Plc expects to be the first UK company to ship IBM PS/2-compatible Micro Channel Architecture machines: the Birmingham company is believed to have inked in September 5 for the launch of its new family of 80386 and 80386SX-based personal computers (UX No 187). The new family will position Apricot even more firmly in the high end of the corporate market for personal computers, and the company is understood to have got very positive feedback from banks and the financial community from previews of the new machines: bankers are persuaded of the benefits of the Micro Channel, it seems. The new machines are also expected to improve substantially on the price-performance offered by IBM's PS/2 family - but they will need to if Apricot is to win the corporate business it expects: IBM gives enormous discounts to large users buying PS/2s by the score. The company is also believed to have signed up a couple of large distributors who will give it a 200-strong third party sales force dedicated to winning business from large accounts. Apricot is using the Chips & Technologies PS/2 compatibility chip set, getting the boards stuffed in Singapore - at the same shop that Apple Computer uses for stuffing - and the micros are being assembled at its Scottish factory. They will include Ethernet interface on the board, and synchronous communications are in the plan - as is a data security encryption device to enable all those bankers Apricot hopes to win sleep sounder at night. The company is still on target to have an Intel 80486-based box out early next year - no, the 80486 is not yet announced - and a lap-top, possibly bought OEM from Zenith Data or Toshiba, is also in the plan.

LSI FORMS RISC AND ASIC MICROPROCESSOR GROUP

LSI Logic Corp has established a microprocessor group and named Brian Halla, a 14-year veteran of Intel's microcomputer group, vice-president of microprocessor products at LSI Logic: the new group will develop and market "unique product solutions" - marrying RISC to applications-specific circuitry - to differentiate LSI from suppliers of general purpose microprocessors and RISC microprocessors; initially, Halla will focus on the MIPS and SPARC RISCs and the company's 16-bit 1750A microprocessor for military and aerospace users.

MOTOROLA AT LAST GIVES OFFICIAL BLESSING TO EDGE COMPUTER

The deal between Motorola Inc and Edge Computer Corporation, manufacturers of high performance systems compatible with the Motorola 68000 (first mooted over a year ago, UX No 143) has at last been finalised. The deal gives the Edge products the Motorola blessing, and effectively extends the performance span of the 68000 family from 1 to 55 mips, while giving Motorola a valuable means of stopping 68000 customers from defecting to other semiconductor manufacturers. The agreement covers the 68000 series and Edge's 2000 series machines, and includes co-operation in product development to ensure compatibility between Edge products and the 68000 family. There will also be joint marketing and patent cross-licencing. Although Motorola plans to extend the 68000 line further with the forthcoming 68040, it has not yet announced availability schedules for the part, and its own plans for high performance processors are centred firmly on the incompatible RISC 88000 Series - and 68000 customers facing the switch to RISC might equally well opt for prods from Motorola's competitors. A Motorola spokesman said the agreement was the response a need for 68000 compatible high-end systems from customers seeking "mainframe computer performance". Edge products currently provide up to 55 MIPS; Olivetti's 68000-based LSX line is already topped off with Edge products, and Philips is also thought to have signed up. In addition, Edge is thought to have attracted at least one 68000 real-time systems customer, Heiner Krapp, head of Edge's European operations in Lausanne, Switzerland, emphasised that the agreement included access to further chips in the 68000 family, including the 68040, so that the Edge products could continue to be positioned at the high end of future versions of the 68000 line.

COROLLARY LAUNCHES 80386-BASED ATTACK MULTIPROCESSOR

Irvine, California based Corollary Inc, the company which is behind the multiprocessor Zenith Data Systems is bidding for the US Air Force AFCAC project, has now announced the technology under the codename ATack. ATack, as the name suggests, is designed to be built into 80386-based, AT-bus systems to convert them into machines with up to six processors running a modified version of SCO Xenix. A key feature is a 64Mb per second, 32-bit wide C-bus connecting the processors and freeing the AT bus for peripheral handling - an approach which, when combined with high performance controllers and disk subsystems is said to prevent the AT bus becoming swamped with data. Each CPU board includes 80386 and supports the 80387, has 64Kb cache memory and C-bus interface. The other ATack hardware components are 16Mb ECC memory and a bridge board linking the C-bus to the AT-bus system. The multiprocessor kernel is claimed to be binary compatible with SCO Xenix. Corollary's earlier products emerged under the name ATtain and performed similar tricks for 80286 systems, although an upgraded 80386-based version was announced back in February (UX No 168).

BRITISH TELECOM, ICL WIN THROUGH TO CHOTS FINAL

The two finalists for the lucrative Corporate Headquarters Office Technology system (CHOTS) project were announced by the Ministry of Defence earlier this week: the winners being British Telecom, heading up a consortium comprising Honeywell Bull, Nixdorf, and Secure Information Systems Ltd (SISL), and the Topix consortium, headed by ICL with BICC, Coopers and Lybrand, Data Logic and Hewlett Packard. The award is for a prototype system for installation in January 1990, and following an evaluation period, the final choice of supplier will be made. CHOTS will eventually comprise of a large number of Unix systems supporting over 12,000 terminals and 3,000 printers. Secure office automation facilities conforming to the Orange Book B1 classification are a requirement, as access to other MOD systems will be available from desktop terminals. British Telecom successfully strengthened its own consortium by helping fund SISL last year (UX No170), set up from security specialists within parent company Systems Designers: the major office software element will come from Uniplex Ltd. ICL's TOPIX - or Trusted Office Partnership - consortium will use ICL's Officepower running on a mixture of ICL and Hewlett Packard secure systems. ICL and HP are collaborating on a secure version of the Unix, an effort being coordinated by Data Logic in accordance with Posix and X/Open standards, while BICC Data Networks will converge its 100 Mbit/second fibre-optic LANS towards the emerging FDDI standards. The eventual value of CHOTS has been estimated at some \$300 million.

NIPPON MINING BUYS GOULD FOR \$1,000m

Gould Inc has effectively been up for sale for about three years now, but the company that has moved in for the Rolling Meadows, Illinois diversified electronics concern is still a surprise: where a European, either Siemens AG or GEC Plc, had been widely expected, the suitor turns out to be Gould's long-standing Japanese partner, energetically diversifying Nippon Mining Co Ltd. Gould signed up with Nippon Mining as long ago as 1985, when the Japanese firm took on its fibre optic components for 19 Far East markets, and in July this year the two formalised their relationship in computers with the creation of Nippon Gould Computer Co Ltd. Under the agreement announced just before the New York market closed on Tuesday, Nippon Mining will pay \$23.25 a share for Gould's 45m shares outstanding - a premium of \$7.625 over the market price before the bid - valuing the company at about \$1,100m, nearly two times its book value. The Computer Systems business is now one of the largest in the group, accounting for about a third of the \$933m annual turnover - down from some \$2,000m before Gould began its spate of divestitures - and if the bid succeeds, this will be the first time a major US minicomputer manufacturer has fallen to a Japanese company. But a substantial proportion of Gould's business is still defence-related, and it is not at all clear that the US authorities will allow this to pass into foreign ownership, although it may allow Nippon Mining to take the company and then sell the defence interests.

DATABASE MACHINES: BRITTON LEE TRIES OUT NEW MARKETING APPROACH FIRST IN EUROPE

It has taken just one short year for back-end database builders Britton-Lee Inc to absorb a new management team, develop what it describes as a "focused approach", and - more recently - make a return to modest profits. The Los Gatos-based firm is now determined to extend the appeal of its "traditional" data integrity and security initiative, which will be targeted firmly at the commercial sector. At entry-level, Britton Lee hopes to address the needs of departmental networking environments - estate agents, retail chains, the petrochemical market et al - with a £37,350 package comprising its BL 300 shared database system, host software, the Freeform 4GL applications generator and the PC/SQL link. Meanwhile, at the top end of the market, the company will provide a similar BL 700-based offering, at £254,000, to be aimed at corporate network-type environments within banks, large financial institutions and government departments. The targeting of key European customers, via a series of presentations, will start at the end of the month, with plans to move the process across the Atlantic by the end of the year.

According to European chief Jan Nordhagen, it is the dedicated nature of the database machine which provides both packages with a "unique" selling point - a factor that Britton Lee, widely perceived to be caught between the likes of Oracle, Informix, Ingres and, at the other extreme, Teradata, clearly plans to play up. Young relational database software companies, claimed Nordhagen, warming to his theme, were unable to offer either the separate database concept or comparable load or performance capabilities, while Teradata was rapidly dismissed as a "filesorter" for IBM and Honeywell-Bull environments. The other side of the uniqueness coin, however, appears to be an unwillingness to provide any of the standard performance guides: the TP1 benchmark was, he concluded, "insignificant", while data transfer rates were simply "inapplicable" to the kind of software programs Britton-Lee products were built to host. Response time for a typical 50-terminal BL 300 network, was, however, eventually placed in the one-and-a-half to two second region.

Value-added resellers

With proprietary matters still firmly on the agenda, Nordhagen was able to shed some light on the RISC models development, announced last July (UC No 139). Rather than using industry-standard RISC chips, he explained, the company was applying the reduced complexity concept to the arrangement of components within a range of dedicated machines, in a manner similar to the one adopted by IBM for management environment on the RT 6150. The company's processor is built of discrete ECL components with Zilog Z8002s to handle the peripherals. The difference between the 300 and the 700 is that the 300 has a single 300Mb disk - from Control Data, whereas the 700 supports up to 16Gb of disk and includes a database accelerator. Re-packaged products and RISC aside, the company will also be concentrating its new-found energies on the launch of its Alliance programme, designed to encourage its network of European value-added resellers to exchange information between them without using the company as an intermediary. The intention is to combine the different products currently developed by individual resellers to produce an Alliance product portfolio - an idea which, if successful, will undoubtedly leave the company well-placed to benefit from the dismantling of European trade barriers in 1992.

PRIME WITHDRAWAL STUNTS CYDROME'S JAPANESE SUCCESS

Prime Computer Inc's withdrawal of its MXCL 5 version of the Cydrome Inc machine from the minisupercomputer market has implications for Japan, where Prime already has customers. It also chimes oddly with the words of Prime's representative on the US Dept of Commerce's SuperComputer Trade Mission to Japan, the most recent of which occurred in late June, when an eight-member group representing the US supercomputer industry visited Japan, and Lee Adamson, senior manager, Engineering and Scientific Sales Support for Prime in the US said that sales of its minisuper mini were going well. The total percentage of Prime's business emanating from Japan had been raised to between 3% and 5% of the company's worldwide total of about \$1,500m, claimed Lee. Prime has been in Japan 4 years, and has had its ups and downs, including change of president (from an Australian to the current Japanese ex-IBMer); it will continue to sell its engineering workstations. Japanese sources say the real reason for Prime's decision to dump the Cydrome is that the thing performed less well than it had expected - Prime had hoped the processing speed would be three to four times that of vector processing rivals. But the Japanese market is getting somewhat overcrowded, with Alliant, Convex, Gould and others setting up subsidiaries.

DEDUCTIVE SYSTEMS SAYS ITS "FIFTH GENERATION" KNOWLEDGEBASE CUTS DEVELOPMENT TIME BY 90%.

One of the highlights of the Software Tools exhibition here in the UK back in June was an intelligent knowledgebase management system from small Glasgow developers Deductive Systems Limited. The product, called Generisis, is said to integrate aspects of artificial intelligence, relational database and fourth generation language technology to provide an environment for developing, operating and maintaining knowledge-based applications. The knowledgebase holds information, and all the related rules required to interpret, draw conclusions from and take actions on that information. According to Deductive, the need for "virtually all" conventional programming is eliminated, allowing "codeless" knowledge-based applications to be developed cheaply and quickly - up to 90% faster than conventional methods, is the claim. Generisis incorporates an intelligent query language aimed at application users, which can deduce reasoned responses to "almost any enquiry, no matter how imprecise", making the resultant applications easy to use. Written in C, the software runs under VMS and Unix, on hardware from Sun, HP, Compaq, and soon the IBM PS/2 Model 80 under AIX. Honeywell Bull is said to be incorporating the product into a production application, and Deductive Systems says it already has systems out on field trial at various public and private bodies.

DEC ENDEAVOURS TO STEAL MARCH ON IBM WITH COMPREHENSIVE WIDE AREA NETWORK OFFERINGS

Along with its Ultrix announcements last week (UX No 194) DEC last week launched an Enterprise-Wide - and worldwide - marketing campaign in an attempt to raise its profile in the wide area networking arena and, it hopes, beat IBM to the corporate customer market. At the hub of the wide area net announcements is the DEC MicroServer, a MicroVAX II-based piece of hardware which is the Ethernet communications host for a clutch of new software products. DEC claims that its MicroServer runs at speeds four times faster than its ageing PDP-based predecessor and its function is to set up high speed connections for synchronous long-distance applications. A new DSV11 interface enables entry-level DEC workstations to be directly connected on a wide area network at higher speeds than supported by the Q-Bus synchronous interface - two 64Kbps lines or one at 256Kbps. Three programs, to connect DEC-to-DEC, DEC-to-X25 and DEC-to-IBM, are available to run on the MicroServer. DECrouter 2000 links DEC-to-DEC machines across a wide area net and intelligently calculates the cheapest route across the hotch-potch of PTT-governed public networks (DEC expects this to be a boon as falling tariff rates across Europe tempt users onto the public networks). The router supports traffic flow between 63 disparate areas. X25router 2000 extends the performance of the DECrouter across an X25 network to enable DECnet users to talk to Open System Interconnect environments. And DEC is enhancing its IBM interconnect capability in an effort to win the allegiance of mixed-vendor corporate customers before IBM gears up to target wide-area networks. Two versions of DECnet/SNA Gateway, also hosted by the MicroServer, are on offer to meet the differing requirements of users performing processing functions such as terminal emulation and file transfer between DEC and SNA systems. The top-end or "motorway" gateway, the Channel Transport, sidesteps the traditional front-end processor to link directly to the channel of a locally-installed 370 on an SNA network, supporting up to 255 concurrent jobs or sessions. The mid-range DECnet/SNA Gateway for Synchronous Transport also runs on the MicroServer, and supports up to 128 concurrent sessions. At the bottom-end, an enhanced version of its VMS/SNA software will provide users with a single speed system-to-network SNA link, says DEC. And the DECnet/SNA Data Transfer Facility software has been enhanced, and, using either one of the Gateways, or VMS/SNA, provides fast bidirectional file transfer and access to IBM MVS hosts. File transfer facilities now extend to Ultrix Unix and to MS-DOS. In the Open Systems Interconnection realm, DEC announced its File Transfer and Access Management, FTAM, software product which is due to be shipped this October. DEC claims their product has passed interconnectivity tests with 30 other vendors. UK Prices for the DECrouter 2000 and the X25router 2000 are £8,520 and £11,715 respectively, both out now. The DECnet/SNA Gateway for Synchronous Transport is £14,200, next month; the Channel Transport version is shipped at the same time at £14,200. Available this month, the DCV11 Synchronous Interface is £3,200; the DECnet/SNA DTF software comes at £14,200 in October. VAX FTAM prices start at £3,000 but vary according to the processor. No prices were given for MicroServers.

GENSYM SHOWS "WORLD'S FIRST" DISTRIBUTED EXPERT SYSTEMS

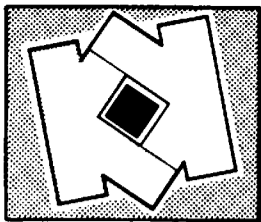
Gensym Corp, Cambridge, Massachusetts developer of the G2 Real-Time Expert System, has announced and demonstrated G2 Network, claiming it to be the first architecture to support co-operating expert systems for distributed applications. G2 Network is written for standard computer networks, enabling users to create expert systems that co-operate in real time. It was demonstrated using a TCP/IP Ethernet link between G2s running on computers from Sun Microsystems, Hewlett-Packard and Texas Instruments, and also on a DECnet connection between DEC VAXstations. G2 Network consists of four elements: G2 Real-Time Expert Systems; Intelligent Communications Protocol - ICP - networking software, Telewindows remote window system, and the G2 Standard Interface interface development package. The key addition, the Intelligent Communications Protocol, is a network protocol layer enabling knowledge-based applications to share information across a network of co-operating applications, data servers, user interfaces, and support software. It runs on top of the likes of Ethernet, DECnet, TCP/IP, and other Open nets. Telewindows enables access to any number of G2 real-time expert systems in a network with multi-user access to a knowledge base; no prices or delivery given.

CHIYODA HELPS ACER WITH UNIX CONNECTIONS

Chiyoda Joho Kiki - that's Chiyoda Information Machines - is to develop, in conjunction with the Taiwanese Acer Corp, communication software to enable the Acer AX-standard AT- alike personal computer to link to Unix supermicros: the Unix machine in question is of course the Acer Counterpoint System 19K; although Acer now owns Counterpoint, it has few Unix skills, its forte being cheapo MS-DOS and OS/2 clones, so it is anxious for all the help it can get from Chiyoda, which was already the distributor for the 19K in Japan.

SCIENTIFIC COMPUTER SYSTEMS ARRIVES IN THE UK, GERMANY

Following its formation of a French subsidiary last year, San Diego, California Cray-compatible minisupercomputer manufacturer Scientific Computer Systems Corp has set up similar operations in the UK and West Germany. And with the introduction last month of its VectorNet 1.4Gbps fibre optic local area network for linking supercomputers, the firm has tapped the gran'daddy of that technology, Network Systems Corp, for a head for its European operations. James Callaghan has been named European sales manager with responsibility for all company activities in Europe, and will be based at Scientific Computer Systems UK Ltd in Virginia Water, Surrey. Guy Goodman from AEG AG's ModComp is sales manager for Scientific Computer Systems GmbH in Grunwald, near Munich. The new units will pitch for business in computational chemistry, structural design, aerospace, oil and circuit simulation. First UK customer is described as a "major medical research institute".

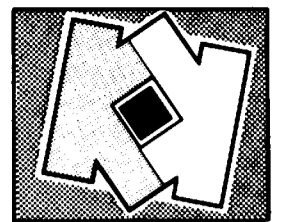


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The latest manifestation of Carnegie Mellon University's IBM-funded Project Andrew is a planned T-1 1.544-Mbps US-wide net linking universities: an Andrew File System will enable transfers at local net speeds.

- 0 -

Hitachi Ltd has upgraded its 32-bit Unix engineering workstation, the 2050/32 by adding networking functions so that the machine can be linked in as a workstation or locally networked with personal computers on a Token Ring: the HI-UX/W has also been upgraded to the Unix System V Release 3.0 level, and it also has AT&T's Remote File Sharing running.

- 0 -

Cullinet Software Inc has joined ITOM International's new Transaction Processing Performance Council (UX No 193).

- 0 -

The memory chip game has become one of oneupmanship, bluff and hype, and six companies - Hitachi Ltd, Fujitsu Ltd, Texas Instruments Inc, Toshiba Corp and Mitsubishi Electric now say they are shipping samples of 4M-bit memory chips: Matsushita Electric Industrial Co will start sampling next month, Oki Electric says it will sample in October, and Siemens AG says it will start making the chips on October 1; NEC, bested by Toshiba in 1Ms parts, wants to be the first with volume production, and is talking of starting to make commercial shipments in December.

- 0 -

If you want to represent a made-up American name in Japanese, all you can do is try and come up with phonetics that match the sound - which can come out pretty funny when anyone tries to translate them back again: the Milpitas minisupercomputer maker Cydrome Inc comes out as Side Room!

- 0 -

Cray Research Inc has an order, subject to export controls, for a Cray X-MP EA-416 supercomputer from the VTKK Finnish state computer centre; terms were not disclosed.

Modular Computer Systems (Modcomp) of Fort Lauderdale, Florida says that reports in Computer Systems News of a new range of real-time super mini-computers to replace the company's current Classic range (UX No 134) are premature, and that it will not discuss details until the official launch at Autofact in November: the report says that the new machines will be called the Tri-Dimensional family, and will feature a new processor (the 98010 from VLSI Technology) and a new architecture.

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Datavision (UK) Ltd says it will provide full distributor support to ABS Computers Ltd of Brighton: ABS will be selling on the Datavision Universe BASIC compiler on Arix systems.

- 0 -

Ace Microsystems, Kew, UK, has integrated its LEX wordprocessing package with spreadsheet, graphics and time management facilities from Saturn Systems Inc of Minneapolis, Minnesota: LEX is used by customers such as British Aerospace, the Royal Navy and Shell UK.

- 0 -

An intelligent Ethernet co-processor board, designed to fit into the VME slots of workstations from the likes of Sun Microsystems and Apollo Computer Inc, has been introduced by Communications Machinery Corp of Santa Barbara, California: the company claims that the 68020-based Ethernet Node Processor 100 allows greater Ethernet bandwidths, resulting in a 50% speed increase on Ethernet connections; cost is \$2995 for the board and \$1,500 for TCP/IP software.

- 0 -

Custom Applications Inc, Billerica, Massachusetts, has announced a software interpreter that will read Postscript files and print them on ordinary printers: the product, unfortunately named Freedom of Press, costs \$495, will offer 35 fonts on a variety of 24-pin dot matrix printers, ink jet printers, and laser printers on ATs, PS/2s and 386 machines.

Colin Atherton, a divisional director of Logitek Plc, and a leading campaigner for the standardisation of Unix in the UK, died whilst on holiday on Thursday 25th August at the age of 38; a qualified electronic engineer, he joined Logitek in its start up phase in 1980 and was a major contributor to its success, participating in the management buyout of 1983 and the successful floatation of the company in 1986.

- 0 -

The Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, hosted the first X Window system conference and exhibition last week, which attracted a better-than expected attendance, with standing room only in the 1350 capacity Kresge Auditorium for the keynote speech, by Alex Murrow of the Open Software Foundation: speculation centred on the choice of user interface to be selected by the OSF and by X/Open by year end - with Bob Ackerman hinting that a Presentation Manager style interface was favoured by its members, although he said that with seven dual members, the two organisations would endeavour to select the same user interface.

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IXI Ltd, based in Cambridge, UK, was one of the organisers of the show, and says it will be presenting its X-Desktop interface to the OSF next month.

- 0 -

A new exhibition, Open Systems Computing, is to be held at Olympia 2 between January 17th-19th: the organisers, OPS Exhibitions of Woking, Surrey, say that demand from exhibitors forced them to change the venue from the original choice of the Kensington Exhibition Centre.

- 0 -

Interleaf Inc is to release a new version of its desktop publishing software, Interleaf Publisher, for the Macintosh II; supporting the Apple Font Manager, Version 3.5 is priced at \$2495, with a free upgrade for registered 3.0 users: the company said the new version would make it easier for Mac II users to exchange documents with other Interleaf users on Sun and Apollo workstations.

- 0 -

Don't let them hear this in Tokyo - and Wilf Corrigan might have a frosty word or two to say about it too: apropos today's front page story, Michael Slater, publisher of Microprocessor Report told the Wall Street Journal "Texas Instruments is by far the largest chipmaker to support Sparc - the others are all little upstarts by comparison".

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DEC OPENS ULTRIX/MAC INTEGRATION WITH KERNEL-LEVEL SUPPORT FOR APPLETALK

Although most of the recent talk about the integration of DEC and Apple hardware has centred around DEC's VMS operating system (UX No 163), progress on Mac/Ultrix integration is now also coming to light. With cooperation from DEC, Apple Macintosh networking specialists Kinetics Inc, of Walnut Creek, California, has launched a software toolkit for developers working on Apple/DEC connectivity. The K-Talk toolkit runs under the new Version 3 release of Ultrix, and allows software engineers to develop AppleTalk-based applications for VAXs running Ultrix, giving access to AppleTalk network protocols from Ultrix programs. There are two parts: user libraries from Kinetics, and kernel modifications now present in the Ultrix operating system, which allow the Ultrix Ethernet driver to recognise AppleTalk as a valid protocol type. As a result, Macintosh applications can communicate using Ultrix hosts, which appear as AppleTalk nodes on an Ethernet network. Pricing for the K-Talk libraries varies from \$750 to \$1500, depending on the size of the system. Kinetics has had versions of K-Talk on other Unix-based hardware since 1986, and current licensees include Tops, Sun Microsystems, Pyramid Technology, Integrated Solutions, and Sequent Computer Systems.

AMT EXTENDS DAP TO 4000 PROCESSORS

CLAIMS FIRST AFFORDABLE MASSIVELY PARALLEL SYSTEM

Reading, UK-based Active Memory Technology, the company that took over marketing and development of the DAP (Distributed Array of Processors) line of massively parallel computers from ICL in 1986, has extended the machine to provide computational power claimed to be in the 40 billion Boolean operations per second range, or four times faster than the previous model. The DAP 610, which costs just over twice as much as the DAP 510, announced last October, is claimed to be the first "affordable" massively parallel computer with more than 4,000 processors and full software support for parallel processing, according to AMT Chairman Dr Geoff Manning. The 610 employs a 64 x 64 matrix of 4096 processors to achieve character handling rates of 4,000 million per second. AMT claims the machine will multiply integers at a rate of 1,600 million per second. Like the 1024 processor DAP 510, the new machine features a high speed data channel, connectivity with DEC VAX and Sun Microsystems' workstations, and the same range of development tools and software libraries. AMT has developed its own Fortran-Plus compiler which includes the matrix and vector extensions of the proposed Fortran 8X standard. Also featured is the 510's advanced data visualisation I/O subsystem. Cost of a DAP 610 with 16 Mb memory is £250,000, with volume discounts for large end-users and OEM application developer customers. AMT, which claims to have sold an average of two DAP systems per month since the first shipments in November last year, says that it already has two customers for the 610, with four more orders in the pipeline. Delivery time is 90 days from order. ICL owns 20% of AMT, which it took in return for the transfer of intellectual property rights for the software, and over 20 parallel computing technology patents. Manning said the company was committed to improving the DAP's performance by up to 1000 by 1998. Main market application areas are signal and image processing, simulation and modelling, and text and databases.

APPLE SET 68030-BASED "MACINTOSH IIX" FOR A/UX

Launch of the first 68030-based offering from Apple Computer Inc is thought to be imminent, although as the company said there would be no new machines this (financial) year, October sounds more likely than the September 19 date some are going for. Apple will be pitching the full 32-bit Macintosh IIX at the workstation market running its A/UX implementation of Unix System V.2, and it is said to come with 4Mb of memory as standard for some \$7,000. It is not clear whether it will also be offered with the firm's proprietary Mac-OS operating system.

APRICOT'S QI - UNIX BY NOVEMBER

Apricot Computers Plc launched its new 80386-based range of Micro Channel Architecture systems - the Qi range - this week without support for Unix, but promised availability by November. "SCO Xenix (now Unix - UX No 194) does not recognise the Qi's 3.5 inch disk drives", said Apricot's research and development director, Peter Horne. The six models in the Qi range, including three based on the 16-bit 80386SX chip, cost between £2,000 and £5,000, and are initially sold with MS-DOS 3.3, with OS/2 promised in January 1989. Key features include a highly integrated motherboard (equivalent to the main board and five or six AT cards in a Compaq, claimed Horne), integrated Ethernet controller (thick or thin wire), dual synchronous/asynchronous communications channels, giving direct access to X.25 or 2 additional serial ports, and sophisticated security, including an infra-red Qi card to control individual access. Xenix users will be able to run the top-end 600 series machines as four user systems without add-on cards, and extend the capabilities to thirty users with cards from Chase Electronics. Apricot also offers a discount "sealed box" 80386SX model for large customers prepared to install their own machines and buy in volumes of ten or more, starting from £1,800. In the UK, Apricot has struck distribution deals with MBS Plc and Computacentre Ltd; in the US, Apricot plans to sell through OEMs.

IBM LICENSES NCS FROM APOLLO

In what looks like a breakthrough endorsement of Apollo's Network Computing System (NCS), IBM has announced that it is to license the transparent distributed networking tools for incorporation into its AIX operating system to enhance its use Distributed Services offering. Apollo has offered NCS to the Open Software Foundation and has been pushing the system through its Network Computing Forum (of which IBM was a member, but until now its success has mostly been limited to those companies interested in acting as servers on an Apollo network.

THE COMPLEXITY OF RISC

Motorola's 88000 RISC processor is the latest and most complex of the contenders for the high-performance computer system market, containing everything including six optional kitchen sinks.

Geoff Conrad takes a detailed look.

When Motorola decided to go into the RISC business it did so in its own inimitable way, scorning the basic RISC tenet of simplicity (it stands for REDUCED Instruction Set Computer remember) by producing one of the most complex pieces of silicon yet developed, containing everything including six optional kitchen sinks. And to hold the cache/memory management system that it could not fit on the processor, Motorola developed two separate chips, each containing 750,000 transistors.

The 88100 processor runs at 20 MHz and is rated at 17 mips while the twin 88200 cache/memory management chips are used to implement a full four-port Harvard architecture: there are completely separate I/O units for data and instructions, and each I/O unit has a full 32-bit data path for both addresses and data.

Earlier RISC processors were designed in parallel with their compilers, with the two optimised for each other. Changes in one caused changes in the other. A lot of their performance came from the tight coupling of the compiler/processor, with the processor executing the code from the compiler very efficiently. For example, instructions were rearranged to keep the pipeline busy during the several cycles it took for data to arrive from memory for an earlier instruction.

The Motorola port, however, gets its performance from brute strength and complex techniques taken from supercomputers. Apart from including those instructions used most frequently by the C compiler in the 88100's instruction set, compiler design played no part in the design of the processor.

The heart of the chip is a high-speed register file containing thirty-two 32-bit registers. A data unit and an instruction unit on the chip transfer data and instructions between the register file and the separate off-chip caches.

The designers were able to get away with such a small register file by borrowing a feature from Control Data's Cyberplus supercomputer: scoreboarding. (Control Data developed the technique to set up the crossbar interconnecting 14 processors, five floating point units, and various memories - and to initiate an operation on each of the units each machine cycle. It also helps to control the interprocess communications between the 64 such groups, each rated at 640 mips and 98 megaflops, and the Cyber 170/800 host that go to make up the Cyberplus supercomputer).

The 88100 uses a simpler version of the scoreboard. The built-in hard wired circuitry has two functions: keeping the processing units busy and speeding up context switching. The scoreboard keeps track of all the register states and triggers the execution of operations on the various function units whenever all the necessary information for an operation arrives. The scoreboard also maintains a complete set of central-processing-unit registers for each subroutine. This means that when the computer switches tasks, it doesn't have to save all the registers and reload them from memory - it simply stops using one set of registers and starts using another, all in one clock cycle.

The register file is connected to the concurrently operating "functional units" by an on-chip silicon bus. These functional units, are basically separate processors running in parallel, have their own address on the bus and can directly access the data and instruction caches as well as the register file. The first unit performs all integer and bit-field operations, while the second is a floating-point unit with a separate adder and multiplier that

work in parallel. Up to six further special function units, each with 255 reserved operation codes can be added to the silicon bus. As the whole chip is silicon compiled, new units can be defined and implemented by recompiling the chip. The reserved op-codes will ensure that binary compatibility is maintained.

Users can design a special-function unit themselves by defining the unit and the instructions for Motorola to implement in hardware. But first they can emulate it in software to try it out, because if a program uses a reserved op-code not yet implemented in hardware, the chip traps it to software control.

With the 68000 family, Motorola was plagued by the memory management unit. Other manufacturers such as Weitek seemed to make their incompatible versions of the MMU available before Motorola, and they seemed to work more efficiently. Even when it was integrated with the processor, a significant number of users continued to use a separate MMU. So this time, Motorola has tightly integrated the MMU chips with the processor right from the start, hoping to shut out the competition. The 8200 contains 16 Kbytes of fast static random access memory cache per chip, plus a complex memory bus control section. A bank of up to four cache/MMU chips can be connected to both the data and instruction ports to increase the size of the cache. (The limit is imposed by the CMOS/TTL circuitry, and when it is implemented in other technologies the number can be increased, theoretically to 128).

The cache is four-way-set-associative, which means that when the logical address is fed into the cache, it returns four possible values on a hit. In parallel, the MMU translates the logical address to the physical address and uses it to pick one of the four candidates for the cache. A separate processor on the 88200, the memory bus controller, takes care of cache coherently by watching the bus to keep track of what changes are made to locations in the memory and the different caches - if the data in the memory is changed, the copy of the old value in the cache must be invalidated.

Motorola claims that up to 11 operations can be performed concurrently in the three-chip set: two cache subsystems will perform cache-coherency control, check for cache hits and misses, and do address translation. At the same time on the processor, the data unit and instruction unit will store data in the register file, the integer unit will execute an instruction, and the floating point unit will perform two operations, addition and multiplication. And when several processors, each with six special function units operating concurrently and connected to two banks of cache/MMU chips are working, the number of concurrent operations rises dramatically.

Already, Motorola and others are offering modules with several processors and cache/MMU chips in various configurations, including a fault-tolerant one in which every chip is paired with a checker, so that the pair can be disconnected if they fail to agree.

Motorola is putting a lot of muscle behind the 88000 for rapid development - for example signing Unisoft to do the Unix port, AT&T for an applications binary interface, Data General for an Emitter-Coupled-Logic version to follow the 25 MHz version, and half the world to join the 88open consortium.

It may not dominate the RISC market in the way the 68000 family has dominated the workstation market, but the Motorola steamroller, together with the 88000's undoubted attractions, such as support for multiprocessing, will guarantee it a significant part of that market.

SONY GIVES AWAY WIDGETS TO X DEVELOPERS

Hewlett Packard is not the only company working at "widgets", the X-Windows user interface toolkits (UX No 195). Sony Microsystems says that it will make available free to all end-users and software developers its own widget toolkit. Widgets can help application user interfaces to be standardised and moved among any system supporting X-Windows Version 11. Sony, which is a full member of MIT's X Consortium, and markets the NEWS range of 68030-based technical workstations, claimed that it was not restricting the product by licensing as it believed "no proprietary barriers should exist to making application software readily available on all systems that support the X Window standard". The widget set was developed in Japan using object oriented programming technology, and includes buttons, pull-down menus, menus, windows, text and dialogue boxes: object oriented techniques will allow the expansion of the tools by changing the intrinsics of objects, said Sony. The company has sent the software to the X-Consortium and requested that it is distributed on the Consortium's general release tape of X.11. Available this autumn, Sony widgets will be incorporated as part of a future release of the company's NEWS-OS version of Unix 4.3BSD, and is expected to be the basis of a forthcoming graphical user interface in development from Sony, apparently called "PopDesk".

GOULD'S MACDONALD READY TO BUY OUT COMPUTER ARM

There is a question mark in many peoples' minds about whether Nippon Steel Co Ltd will want to hang on to Gould Inc's computer business if it succeeds in its bid for the Rolling Meadows, Illinois electronics conglomerate - but if it doesn't, there's a ready-made buyer waiting in the wings. James Macdonald, who came on board as chairman from IBM two years ago to turn the company around, says that if Nippon Steel doesn't want the computer business, he "might consider participating in a buyout" of the computer business.

APPLE "TO SPIN OUT WORKSTATION FIRM"

Another spin-out company similar to its Claris Inc software firm may be on the way from Apple Computer Inc according to Marty Winston of public relations outfit Winston & Winston in Dallas, who makes a name for himself by being first with such unconsidered trifles. Winston suggests that five "Ultramac" workstations pitched directly at the Sun Microsystems line are on the way by the end of the year, and while most of them will be based on the 68030 and be Macintosh compatible, at least one will use the 80386. He suggests that Apple will market the three Mac-compatible stations with the spinout doing the other two.

..AND SETS 68030-BASED "MACINTOSH IIX" FOR A/UX

Launch of the first 68030-based offering from Apple Computer Inc is thought to be imminent, although as the company said there would be no new machines this (financial) year, October sounds more likely than the September 19 date some are going for. Apple will be pitching the full 32-bit Macintosh IIX at the workstation market running its A/UX implementation of Unix System V.2, and it is said to come with 4Mb of memory as standard for some \$7,000. It is not clear whether it will also be offered with the firm's proprietary Mac-OS operating system.

REALSTREAM USES CENTAUR DATABASE FOR TEXT/IMAGE INTEGRATION

UK companies Realstream and Centaur Systems have teamed up to provide a system that marries text, fixed-format data and image management and, they hope, will garner sales by providing a much lower entry cost than large scale image or text retrieval systems from the major players in the market. The system, Origin, is built round a "unified" relational database management system developed by Cardiff-based Centaur and is due for formal launch in October. It includes support for optical disk storage, typically using a Unisys 5000 series Unix machine as a host. Key features are that documents fed in require no pre-indexing, and the cost - entry level systems come in at under £100,000, so that the scale of investment required to take on large text retrieval systems from the likes of Olivetti or BRS, or image management systems from Kodak, is not initially necessary. Realstream and Centaur Systems have formed a jointly owned company, Time Information Technology Ltd, of which Realstream holds 51%, to market the system. Origin has so far been targeted largely at financial customers and the company hopes to have a couple signed up by October. Ultimately, Origin may be licenced to other resellers. Dorchester, Dorset company Realstream provided Centaur with the funding needed to bring the product to market: it began life two years ago as a PC distributor and is now a Unisys VAR and distributor, doing some £1.5m in revenues in its second year. Other Unix suppliers which have tackled the market for combined text and image storage systems include Plexus Computers, whose system is based on a modified version of Informix.

NCR LAUNCHES ULTRA SYSTEMS FOR LARGE RETAIL MARKET

With Hypermarkets throughout Europe now incorporating as many as 100 check outs, NCR has launched its most powerful electronic point of sale (EPoS) system. NCR's Ultra 2127 retail system was developed in Europe, and uses the Unix-based Tower systems as the in-store processor, supporting intelligent 2127 point of sale terminals and application software. Previous Ultra systems have relied on dumb or pre-configured read-only-memory based terminals, but according to Jenny Burr of NCR's Retail Product Marketing Division, the systems could not cope with either the high transaction throughput or flexibility required by larger supermarkets, hypermarkets, and specialist merchandisers like DIY chains. "The firmware built into the 2126 Ultra terminals worked on a question and answer menu system, with not enough configuration for retailers demanding cash office control, till performance and security monitoring, and general office application software", said Burr. The new systems, said to be capable of handling up to a 100,000 transactions per hour at each store, were launched in conjunction with Retailer 1 software, a new merchandisers management system. NCR Europe chose not to implement the NCR 7000 point of sale system, launched back in January 1987 (UX No 111) and also based on the Tower range, as it saw the configuration as suitable for serving only the 10- 20 lane outlets that predominate in the US. Ultra is being launched in the US as a top-of-the-range system. Both Ultra 2127 and Retailer 1 applications are based on the Oracle 4GL and database package from Oracle Corp.

TEXAS INSTRUMENTS INTRODUCES INTERFACE CHIP SET FOR NuBUS BOARD BUILDERS

Texas Instruments Inc, which owns the patents on the Massachusetts Institute of Technology-developed 32-bit NuBus that is the basis of Apple's Macintosh II and the Texas Business System 1500 and Explorer machines, has developed two NuBus interface chips that it reckons will make it much easier for board designers to bring add-on NuBus products to market. Texas hopes the chips will also spur other computer manufacturers to adopt the high-speed NuBus as the basis of their machines, and may even decide to use the bus in its forthcoming Sparc-based business computers. The two devices are designed to reduce the parts count for implementing NuBus to three devices from a minimum of 23, saving board space, power and stuffing time. The set, described by Texas as the "generic 32-bit master-slave solution," is in BiCMOS, combining fast bipolar with low-power CMOS technology, and comprises the SN74ACT2440 NuBus Controller and SN74BCT2420 NuBus Transceiver; ships in October at \$50 apiece in small quantities.

SOFT BANK RESEARCH TO MARKET JAPANESE X WINDOWS VERSION

The Soft Bank Research Institute affiliate of Nippon Soft Bank has committed itself to marketing more Unix applications: it plans to offer Massachusetts Institute of Technology's X-Window System, in English initially, but with the intention of doing a Japanese version in the near future; also planned for release is Interactive Systems Corp's Ten Plus user interface, which makes Unix more accessible to MS-DOS users, and Relational Technology Inc's Ingres relational database manager will follow in the second quarter of next year; Soft Bank Research Institute already has links with Phoenix Technologies Ltd as well as with Interactive Systems Corp.

PHILIPS-SILVAR LISCO IN JOINT CAE MARKETING DEAL

N.V Philips and Menlo-Park, California-based Silvar Lisco have agreed to jointly develop and market a set of advanced computer-aided engineering software tools. Philips is already a customer of Silvar Lisco's Helix CAE system, which runs on Apollo, DEC, Sun and IBM hardware, and the two companies are part of an Esprit consortium developing software design tools. The deal was valued at \$10 million over a three year period, and involves Philips making a small minority investment in Silvar Lisco. Work will take place at Silvar Lisco's development facility in Leuven, Belgium.

NEC USES 80386SX FOR XENIX POWERMATE PC

NEC Information Systems Inc, Boxboarough, Massachusetts is among the first personal computer players in the US to introduce Intel 80386SX-based machines. The PowerMate SX desktop comes with 2Mb memory, the choice of 1.2Mb 5.25" or 1.44Mb 3.5" floppy, a 42Mb 3.5" hard disk and three AT slots for \$4,500, and is available now. It runs SCO Xenix 386 as well as MS-DOS 3.3 and MS-OS/2 Standard Edition 1.0. The PowerMate Portable SX starts at \$6,600 for a similar configuration, but presumably includes a screen although there is no mention of it. It's out late this month in the US.

AMDAHL SHARES TAKE A TUMBLE, BUT MANY

ANALYSTS SAY IT'S OVERDONE

Amdahl Corp shares took a purler Wednesday, plunging \$5 to \$40 on the American Stock Exchange after S G Warburg's David Wu and Gartner Securities' Stephen Cohen lowered their estimates for the company's 1988 output. Wu changed his recommendation on the stock to a "hold" from a "buy", and cut his forecast for 1988 to \$4 a share from \$4.20, and for 1989 to \$4.90 from \$5.20, saying that he expected a slowdown in orders for the company's IBM-compatible mainframes. But several other analysts insisted that investors over-reacted to the bearish views, and insisted that the mainframe maker should rebound strongly in the fourth quarter. Kidder Peabody analyst William Easterbrook confirmed that Amdahl is warning analysts that foreign sales, representing about 44% of the total in 1987, will be weak - but should still be slightly higher in 1988, he said. Amdahl has told analysts to expect third-quarter earnings to be about \$1.00 a share, similar to the second quarter and up from the year-earlier figure of 71 cents. Easterbrook described Wednesday's plunge as a "gross over-reaction. As far as I'm concerned, this is a momentary pause for Amdahl," he added. "Europe is always slow in the summertime," said Jay Stephens, analyst with Dean Witter, "but no one expected it to affect earnings that much." Jeff Canin, an analyst with Hambrecht & Quist, said that despite the weakness in Europe, business was still strong in the US. Amdahl is beginning to ship its top-performance 5990 mainframe, and should continue to benefit from the new product in the coming quarter, Easterbrook said. It also is expected to announce a response to IBM's Enterprise Systems Architecture shortly. And another potential plus is the gestating agreement for Fujitsu Ltd, Amdahl's 44.7% shareholder, to market some Amdahl machine models in Japan, because there is a hiatus in the IBM compatibility of its own top-end M-780 mainframes.

HONEYWELL, BULL READY WITH CONVERGED NETWORKING, UNIX PLAN

Bull SA and Honeywell-Bull Inc are gearing up for an autumn launch of a new set of corporate networking and Unix products for the office. The move will consolidate two years of convergence efforts since Bull took control of Honeywell, and represents an attempt to create a stronger networking identity. The Honeywell and Bull elements of the new company have left a legacy of products identical in functionality but different in name. Honeywell-Bull currently offers local area networking of its proprietary kit using TCP/IP protocols, but has enhanced its offerings in this area with the addition of Ethernet technology. This has been firmed up with a deal with Logitek to sell 3Com products in the UK. Honeywell has a contract direct with 3Com in the US.

MULTI-USER SPECIALIX SI BOARD SERIES ADDS VALUE TO 80286, 80386 MICROS

Specialix International Ltd has announced details of a new Specialix SI-Series of Unix-and Xenix-compatible input-output controller boards and cacheing disk drive controllers that claim to offer significant price and performance benefits over 80286 and 80386 based multi-user micros. Thames Ditton, Surrey-based Specialix was formed two years ago to supply input-output multi-user expansion boards, and has sold over 6,000 of its AT8 board, bought in from Chase Research Ltd. Managing director Les Pilkington announced that distribution of the Chase boards (UX No 151) has now ceased, though servicing will continue for existing customers. The new S-1 boards, developed in-house, have already generated £500,000 of advance orders, according to Specialix, and comprise four, eight and 16 port models for both AT compatibles and PS/2 systems, and are said to achieve performance levels of 57,600 bauds per device - that's six times faster than the AT8 boards. Rather than the usual Intel 80186, Specialix has opted for the unfashionable 10MHz Zilog Z280 "super-eight" 8-bit chip - an upgrade of the old Z80 - for offloading memory intensive terminal input-output overhead from the host processor. In addition, the boards feature full modem control and transparent printer support. Specialix is also to offer an intelligent cacheing disk controller from Distributed Processing Technology Inc, Orlando, Florida, that claims to eliminate the common file access bottleneck, boosting performance by up to 1,000%. The company will continue to operate as a pan-European enterprise; the UK accounts for less than 30% of its trade, and the firm continues to be sole European distributor for the Corollary line of multi-processor Unix machines (CI No 882). Specialix is now looking to improve on last year's turnover of £1.5m, and expand its OEM contracts that presently include Nokia Data in Finland and Honeywell Bull in West Germany. Future developments at the company are to focus on the graphics and inter-machine communication sectors, while a Stock Exchange listing for its shares is pencilled in for 1990.

MOTOROLA PLAYS DOWN 88000 DEFECTION

Following Motorola Inc's consolidation of the development, design and marketing of its 88000 RISC chip in with its mainstream 68000 activity (UX No 193), Roger Rees, a principal member of the 88000 design team has resigned. Rees joined Motorola three years ago to investigate alternative microprocessor technology, and as yet unconfirmed rumours suggest that he may be involved in a new start-up hardware venture, along with some colleagues. Motorola issued a statement saying that Rees had completed his work on the 88000, and that "the original RISC designers remain as members of the high-end microprocessor division, now headed by Tom Guntner". The team are "actively involved in new developments related to the 88000 family", said the statement.

PROGRESS ADDS DISTRIBUTED DOS/XENIX NETWORKING SUPPORT

Progress Software Corp has launched a distributed processing version of its Progress fourth generation language and relational database management system. The software is designed for heterogeneous networks of computers concurrently running MS-DOS and Xenix. Demonstrated at the recent Santa Cruz Operation Forum '88 exhibition, the software allows Progress users to configure a network in which the database resides on a Xenix-based server machine, with the client processes on Xenix, Unix or Dos hardware. The product joins other Progress/D products, including LAN Progress, a fault tolerant PC LAN database server product, a Unix LAN product, and an offering based on Intel's Opennet Xenix network. Pricing has been set to include discounts for multiple CPU networks, said the company.

UNIDATA TAKES OVER AS UNISYS WITHDRAWS FROM SOUTH AFRICA

Unisys has disposed of its South African operation in a complex deal worth some R132m - and the buyer, Mercedes Datakor, promptly took a share in a local Unix specialist Unidata, both to use its name for the ex-Unisys South Africa and to obtain a stake in its Unix skills. The Unisys acquisition was largely funded by Sanlam Investment Corp, which as a result took control of Datakor's holding company Mercedes Information Technologies: Mercedes Datakor is now renamed Datakor, and including the Unidata operation will have a turnover of some R400m, enabling it to claim to be South Africa's second largest information technology group. Unisys' disposal of its South African operation was initiated in April, when Hill Samuel was appointed to find a buyer: the South African operation did R220m last year and revenues this year were forecast at R250m. The original Unidata, which will now be renamed, will supply support to both Datakor users and others.

NIXDORF HAS HIGH SPEED LAN CONTROLLER FOR TARGON

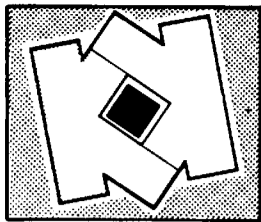
Nixdorf Computer has added a LAN communications facility to its Targon /31 supermicro, designed to handle the interfaces and protocol requirements of a range of LANS, including Ethernet, Token Ring and broadband networks. Nixdorf claims that the Local Network Controller (LNC) improves networking performance significantly through the hardware and firmware implementation of the first four levels of the OSI model. Data transfer is rated at 10Mbits per second using Ethernet, and "considerably faster" on a Nixdorf broadband network. Terminals, printers and workstations can be linked into the same network with the LNC, and a single channel is used by all devices. In the form of a processor card, the LNC uses an 8 MHz Intel 80186 with 1Mb RAM.

UNIX IN JAPAN

Kanematsu Computers has released the Prisma engineering workstation developed by a US firm, which uses a 4Mb 68020, comes with a high resolution display and sells for about \$60,000 in Japan: Kanematsu looks to sell 100 in the first year and 300 in the second, and is pitching as the key selling points a good response time even with five or six terminals connected, and the ability to connect to host boxes such as Massachusetts Computer Corp's 5450 or 5550 multiprocessor supermicros.

- 0 -

Nippon DEC is to sell the WIN/NFS version of Network File System developed by Wollongong Group, which is designed to enable DEC VAXes to be co-exist in a network of Sun Microsystems workstations: prices in Japan range from \$6,370 and \$22,220; other software from the Wollongong Group enables a VAX to be driven from Hewlett-Packard and Apollo Computer stations and from IBM or NEC personals.



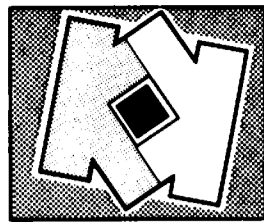
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LSI Logic Corp, Milpitas this week started a RISC price war by cutting prices on its Sun Sparc and MIPS Computer RISCs by up to 66%, claiming industry leadership with a price below \$10 per MIPS: prices for LSI RISCs now range from \$79 to \$199 - against \$200 up for Intel's 80386.

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RISC may be the fad of the moment, but the rumour is that Motorola is already working on a further extension to the 68000 line, the 68050, although Motorola has not yet set a schedule for the launch of next year's 68040 processor.

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X/Open has set the long-awaited announcement of its worldwide branding programme for Monday 12th September at the Howard Hotel in London's Strand.

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Sweden's yearly Unix exhibition takes place in Stockholm from the 5th-7th October this year, with 60 international and local suppliers, and a conference that includes presentations from the Open Software Foundation's Henning Oldenburg and General Motors' David Greenstein.

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Sun Microsystems has introduced Release 3 of Sun Common Lisp, increasing compilation speed by a claimed 500 percent, and adding features such as transparent garbage collection and multitasking: the company says it has tripled the number of third party artificial intelligence software vendors in its value-added-reseller Catalyst program over the last year.

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Nissho Electronics Corp has begun marketing its Japanese language version of VersaCAD, running on a Sun Microsystems workstation: since Nissho became VersaCAD's sales agent last year, it has been marketing the MS-DOS version, so this is a move up-market; the software on the Sun is priced at some \$75,000 and first year sales target is 300 orders.

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Floating Point Systems saw a third quarter net loss of \$3.5m, up from a loss last time of \$12.4m, on turnover down 6.4% at \$17.1m; net loss for the nine months was at \$16.5m, down from a loss last time of \$14.2m, on turnover that fell by 9.2% to \$54.0m.

Dell Computer Corp has again delayed first shipments of its PS/2-compatible machines: initially, the delay was said to be down to a problem with the Intel Corp Micro Channel compatibility chip set, now Dell says that it is seeing insufficient demand for the machines.

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Unisys Corp is already cutting prices on its new PW2 Personal Workstation family, by 2% to 19%.

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Liverpool-based computer services group Fraser Williams has announced a 15% increase in turnover rising to £21.2m, with pre-tax profits up to £1.1m for the year ended March; the company - which is 70% owned by its management - says overseas earnings grew by 41% to £3.8m, the bulk of which is due to acquisitions in Holland and the opening of an office in Belgium: Fraser Williams concentrates on mid-range systems for a number of vertical markets and last week announced the acquisition of Sittingbourne, Kent based software house Birchshield Ltd which specialises in fruit and vegetable retail applications.

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Control Data Corp's ETA Systems Inc in St Paul, Minnesota, says that it has received six orders, worth over \$11m in total, for air-cooled models of its ETA-10 supercomputers: the machines are for delivery in the current and fourth quarters, but no further details were given.

- 0 -

Hewlett-Packard has won a \$6 million order for HP 9000 Series 800 minicomputers and Vectra PCs from the Four Seasons Hotel chain, which has its headquarters in Toronto, Canada: the four year contract will involve computer systems for overall hotel management applications throughout the 21 luxury hotels in Canada, the US and England, and the deal involves PC integration software from Locus Computing, Santa Monica, California.

- 0 -

Informix Software Inc says its Rapid Development System and 4GL Interactive Debugger database development tools are now available on hardware from Altos, Amdahl, AT&T, Convergent Technologies, DEC, Hewlett Packard, IBM, NCR, Northern Telecom, Sequent, Sun Microsystems and Unisys: the tools are said to speed up the development of customised DBMS applications.

New MS-DOS-based developer's tools from Borland International include upgrades to Turbo Pascal and Turbo C with new runtime library source packages: they can both be bought bundled in with Borland's new Turbo Assembler and Debugger package - the Assembler was used to write Turbo Pascal and the company's Quattro spreadsheet - for \$249.95, or separately for \$149.95.

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And Borland's Phillippe Kahne told Microbytes Daily that the company was working on object oriented versions of both C and Pascal, and would be making announcements in the first quarter of next year: other things in the pipeline are the integration of Turbo Pascal and C with the Paradox database.

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IBM has enhanced its object-oriented Circuit Board Design System (CBDS), Version 4.3, so that versions running on AIX and VM/CMS hardware are fully compatible, allowing design information to be transferred between the two: developed by Northern Telecom Ltd, the system also includes high speed routing and placement, and extended photoplotting capability for CAM.

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Rabbit Software (Malvern, PA) has announced a product for connecting 386-based systems to domestic and international public packet-switched networks: the RabbitPlus package consists of a synchronous communications adapter board and X.25 software, and the program will run under SCO Xenix 386 System V.

- 0 -

Ah, the wonders of the computerised mailshot: Computer Weekly reports that Prince Charles is particularly proud of a letter addressed to HRH Prince, Charles Buckingham Palace, The Mall, London SW1 that opens enticingly "Dear Mr Prince, what would your neighbours in The Mall think if you pulled up outside Charles Buckingham Palace in a brand new red Ford Fiesta, complete with sun roof and alloy wheels?"

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X/OPEN REVEALS BRANDING POLICY - COMPLIANCE RACE IS ON

X/Open's branding policy was unveiled this week complete with details of royalties and licensing, and accompanied by twelve more or less specific commitments by members to produce conformant systems. Suppliers will be able to use the X/Open Logo specifying "base" for base-level compliance, "full", for complete support for mandatory Common Application Environment (CAE) features, "component", referring to specific software extensions, or "application"; each use of the trademark is accompanied with a date - 88, 87, or 85 - referring to the publication date of the versions 3, 2, and 1 respectively of the guide. Royalties are \$8.50 or £5 for each shipment of a single user system, \$25 or £15 for a multi-user system: the maximum royalties payable are £275,000 - the cost of membership, should anyone ship such huge numbers of conformant systems - and members effectively can ship royalty-free. Registration fees are nominal - £50 per product and £50 per licensee, with exceptions to deal with local laws in Canada, South Korea and Taiwan. As expected, branding is conditional on passing the X/Open verification suite. Unisoft, developer of the suite, will be providing the testing service in-house in London, San Francisco and Tokyo and at suppliers' offices: fees are £3,500 for one machine, £2,500 for a second machine tested at the same time. X/Open is also working with the National Computer Centre on a combined X/Open/Posix test suite, following their successful bid as part of a consortium to set up EEC-funded Posix testing centres. Bull, DEC, Fujitsu, Hewlett-Packard, ICL, NCR, Nixdorf, Nokia, Olivetti, Philips, Siemens and Unisys all chipped in with commitment to produce conformant systems; Unisys also said it was investing \$3.5m in opening 16 X/Open compliance centres round Europe, NCR said all new Tower models would conform and conformance would be introduced progressively for existing models, while ICL's promise of branding within weeks was restricted to the DRS range, not the bought-in Clan products. Applications compliance remains a trickier area, since X/Open has no test for certifying compliance: vendors will be required to state that their products are fully compliant - requiring only recompilation to move between machines - or partially compliant, in which case porting costs should be reduced. Because of the number of areas still not covered by the Guide, X/Open expects few applications to be initially fully conformant. Uniplex, Informix, Oracle and Sybase all committed to participate in the branding programme. Portability Guide 3 is due in two stages with the last four volumes due December 1: Guide 4, for which there is no date, is aimed to cover enough areas to allow the majority of applications to be fully compliant.

MOTOROLA SUES DEFECTING 88000 DESIGNERS, CYPRESS

Motorola was obviously more troubled than it let on last week (UX No 196) by the defection of 88000 RISC designer Roger Ross and three of his team (CI No 1,006), as it almost simultaneously launched into a swingeing lawsuit against the defectors. Ross has formed a new company, Ross Technology Inc, in Austin, Texas with three of the 88000 RISC team and another Motorola manager, and the new company has agreed to give Cypress Semiconductor Corp, San Jose a majority shareholding in return for it injecting the group working on the Cypress version of the Sun Microsystems Sparc rival to the 88000 into the new company. Motorola alleges that Ross and his friends have proprietary marketing as well as full technical details of the 88000, and accuses them of conspiring to use the data. Ross says he quit because he wanted to work for a small company, and chose the Sparc because it is freely licensed where the 88000 is protected - and notes that as the Sparc is fully specified and is incompatible with the 88000, it would be hard for him to use any trade secrets. Motorola was prepared to settle without litigation only if they agreed not to work on any modern computer architecture for 18 months; Motorola is seeking temporary and injunctive relief, compensatory and punitive damages in the suit, the case comes up next week.

SONY HAS NEWS FOR BUSINESS

Sony Corp has announced Pop News, a Unix workstation that is aimed at the business rather than engineering market: it uses the 68030 and 68881, costs \$7,300 to \$14,600 and hits the US and Europe early next year; 1989 target is 10,000. But Sony has had to scale down its News forecast for 1988 to 5,600 to 5,800 from its 8,000 plan; it blames 1M memory, screen, and disk shortages. The Pop News PWS1500 line features a new Pop operating system that combines its implementation of Unix with the Pop Desk user interface which is based on the X Window System and Sony's implementation of the Widgets toolkit (UX no 196). And underlying the company's determination to become a major player amongst workstation vendors, Sony says it is constructing a new plant to manufacture the systems, expected to open within the year. The plant will give it a capacity of 20,000 stations per month, four times that of its present output.

AT&T CHIEF LOOKS FOR OSF RECONCILIATION

AT&T Co "may soon reach a compromise on some common form of Unix" with the Open Software Foundation, AT&T chairman Robert Allen told securities analysts in Boston last week. He said that serious, open discussions were going on with several of the leading corporations in the Foundation, and that he was hopeful that agreement would emerge soon. The Foundation is committed to basing its operating system on release 3 of IBM's AIX, which is due out in 10 months. The current AIX release is based on Unix System V.2 with Berkeley extensions, but the new version will be a complete rewrite, eliminating use of the Virtual Resource Manager kernel from the RT Personal Computer, and adding features such as support for C2 security, real-time and disk mirroring.

CONTROL DATA'S MICROGNOSIS SWITCHES TO UNIX FOR FINANCIAL SYSTEMS

Sun Microsystems has boosted its financial business by an estimated \$5 million over the next year with an OEM deal from trading systems supplier Micrognosis Inc, of Danbury, Connecticut. A wholly owned subsidiary of Control Data Corp, Micrognosis has ported its Trade information distribution software, which previously ran on DEC hardware under VMS, over to the Unix environment. The company says that its new Intelligent Workstation System (IWS) will use Sun 386i, Sun 3 and Sun 4 workstations to allow dealers to access the various sources of digital financial information (Telerate, Reuters etc) onto the Sun's single 19 inch high resolution screen. Multiple screens for video-based information will also be integrated to work from a single keyboard and mouse - although Micrognosis marketing manager Janet Wood estimated that all sources would be digital within the next two years. The first IWS system is set to go live in November, and Micrognosis says it expects substantial business from the video switching replacement market. The company has 22 offices in the major trading centres of 17 countries, and in the UK - where up until last year it traded under the name of Control Data Financial Information Services - it currently boasts 15 customers in the City.

HEWLETT LAUNCHES DELAYED 80386 VECTRA

Hewlett-Packard Co this week introduced the Vectra QS/16, billing it as its most powerful desk-top personal computer. The 16MHz AT bus 80386-based machine, which is \$4,000 with one floppy, was intended to come out in May, but was held up by the memory chip shortage. It is the existing Vectra RS/16 repackaged as a small desktop machine, and runs OS/2, Windows/386 and Santa Cruz Operations' Xenix as well as MS-DOS. It also costs \$900 less than the floorstanding model when fitted with a 40Mb disk. It uses surface-mount technology for reliability as well as compactness. Memory goes from 1Mb to 16Mb on the motherboard, freeing all seven expansion slots for accessories and enhancements. It also includes terminal-emulation software that enables it to communicate with HP3000 business computers. The 40Mb disk model is \$5,100 and also comes bundled with an HP video graphics adaptor and choice of 5.25" 1.2Mb or 3.5" 1.44Mb floppy drive for \$5,500. Out this month in the US.

SUN MICROSYSTEMS TAPS MA BELL FOR \$42m

Sun Microsystems Inc is doing so much in so many directions these days that the company has to keep running home to mother for more pocket money. Under its agreement with Sun, AT&T has to buy up to 15% of Sun's enlarged equity at a 25% premium to the market price, and may take its stake to 20% all told by buying in the market as well. This time, Sun plans to issue 883,402 shares to AT&T, representing 2.3% of the enlarged equity, bringing in \$41.9m, to be used for working capital and to increase its capital base. Once the deal is complete Sun is not permitted to ask for more for 90 days.

ACORN SEES STABILITY AT LAST: NEW UNIX RANGE NEXT YEAR

A lower cost base following the closure of its troublesome customised systems arm, and a decision to concentrate on mainstream products are cited by Acorn Computer Group Plc as the two main reasons for the company's turnaround in fortunes. The Cambridge micromaker yesterday posted profits of £711,000 for the half year to June 30, compared with a loss in the year to December 31 of £3.3m and a loss in the corresponding six months of £1.4m. Bank borrowings have fallen to £1.8m at the period end, from £2.8m at June 1987 and a high of £4.7m at the end of 1987. Staff numbers have fallen to 230 from 280 as a result of the closure last November, but the company says it does not plan any further cuts. Harvey Coleman, who joined Acorn as managing director in January of this year, said that the Archimedes 32-bit RISC microcomputer had penetrated existing markets, notably education where he said the BBC Micro Master Series still continues to sell in good numbers. According to management the two ranges accounted for 80% of turnover in the six months. Sales were split evenly between them - £8m each for the period - which means that because of the price difference fewer Archimedes units were shipped. However the company is still searching for a number of niche markets for its products outside of education. Harvey Coleman said the company will focus on the home-hobby, audio-visual, health and small business sectors in the next 12 months in an effort to broaden its customer base. The half year also saw Sanyo become a second source to VLSI Technology for the Acorn RISC microprocessor, with worldwide marketing rights. Mr Coleman said royalties from the licensing agreements were not large - "a single figure percentage" - however as there are no costs involved it may well prove a nice little earner. The microprocessor is also at the centre of a laser printer controller card which enables desk top micros drive a dumb laser printer engine and the first order for the product, worth £500,000, has come from Olivetti. Contracts with other companies are now being negotiated. Rumours that Olivetti plans to cut its 79% share in the company by way of a share issue to outsiders were denied by management. There is a standing agreement with Olivetti for extra funding when needed for capital projects, but management stressed there are no such plans at the moment. The company is instead gearing itself for the launch of a new Unix workstation range expected to be released in early 1989. The project was internally-funded; research and development accounted for 15% of turnover in the last period.

BULL INTEGRATES NEW DPS 4000s INTO UNIX ENVIRONMENTS

Bull has come out with a new line of Honeywell Bull Italia's 24-bit DPS 4000 family, six uniprocessors that support seven to 16 users - and can be used alongside Unix machines. The new GCOS4-X version of the operating system enables the same terminal to be used to access GCOS4 and Unix applications such as Uniplex II Plus or Informix, and the two environments can exchange data. At the bottom end, there are two subcompacts, the DPS 4000/120C and 130C, which come in a cut-down cabinet that includes disk and streaming tape. The new models cut the entry price to the GCOS4 family in half, to the equivalent of about \$38,000: hospitals like the DPS 4000, but up to now, few with fewer than 150 beds could afford one: now a nursing home with only 80 beds can fit them into its budget. The new line increases low-end performance by 40% to 45%, high-end by 20% to 25%. There are still nearly 5,000 GCOS4 sites in Europe - the box is the direct descendent of Honeywell's Level 62, 800 in France.

MANUFACTURERS AND SOFTWARE HOUSES KEEN TO EMBRACE BRAND X

Manufacturers were keen to be seen to fly the flag at the X/Open branding announcement this week, (see front page), with only IBM and Sun Microsystems missing from the list of vendors trumpeting their plans to deliver compliant systems. The X/Open verification suite, on which most of the manufacturers' claims centre, has been in trial use at X/Open members for some 18 months, and is now claimed to be showing just a couple of bugs per month: it currently tests compliance with XPG 2 and consists of 1,292 C language tests, 1,578 operating system tests, 685 internationalisation tests and 190 ISAM tests, giving a total of 3,745; XPG3 will increase the number to about 4,200. It takes up to a week to run on a small 80286-based machine, according to X/Open's Mike Lambert: runtimes on large RISC machines can come down to under a day. The suite currently tests base compliance to XPG2, but vendors commit to conformance with the Guide specifications, not just the areas covered by the suite. The suite will progressively be extended to test more of the extensions. Unisys said it was opening X/Open Compliance centres, for users and developers to verify their software on Unisys X/Open systems, at its European HQ in Uxbridge, west of London, and 16 European subsidiaries over the next few months representing a total investment of some \$3.5m. Philips said its in-house testing of the P9000 range had indicated compliance to XPG2, "base 87" standard, and compliance to X/Open Plus 87 with the exception of internationalisation. NCR promised full compliance for all Tower models by end 1989, with base compliance for the 32/400 and 32/600 by the end of 1988. DEC said the previously announced Ultrix-32 V3 was XPG2 (base 87) compliant and was expected to comply with XPG3 when the new specifications are released. Hewlett-Packard promised HP-UX compliance for the HP9000 series to X/Open base level, with extensions including internationalisation (X/Open internationalisation specifications were based on the specifications of HP-developed software), by the end of this year. Nokia, which currently resells Sun systems, said it intended to release X/Open branded product early next year. Siemens, which now claims to have boosted installed base of its Sinix product line to some 26,000 systems and 120,000 terminals, said existing products already correspond to the XPG2: XPG3 conformant systems are planned for next year. The statements from Bull, Fujitsu, Olivetti and Nixdorf were not specific on timescales, levels of compliance or products. The trademark licensing agreement, which is currently in draft form, is expected to be completed in two weeks or so, at which point Lambert expected several members or non-members to sign. With regard to software, X/Open is planning a catalogue of some 240 compliant software products for release in December of this year - compliance has been measured by a comprehensive questionnaire completed by the software houses. Mike Lambert said that the majority, if not all, of these applications would fall into the partially compliant category, with extensions not supported detailed on the labelling.

AUGUST GOES IT ALONE - MINUS US DEVELOPMENT ARM

Dundee-based conglomerate Low and Bonar has been selling off its technological interests over the last few months, and last to go was fault tolerant specialists Bonar August Systems (UX No 170), which last month was the subject of a management buy-out under managing director Chris Goring. The deal, which required no additional funding from outside sources, leaves all the original staff as shareholders in the new company, August Systems Ltd, which continues in the same location down in Crawley, Surrey. Goring has closed down the company's US facility, saying it was not practical to run a full scale production arm there, and replaced it with a sales and distribution agreement with MWI Inc in Texas. According to Goring, the company mood is "optimistic", with two orders, including an export order from Japan, have been received in the first month of operation. While the company's main focus is currently sales of its established software implemented fault tolerant bespoke range, the CS 330, it is gearing up to sell the recently launched CS3000, triple 68020-based system (UX No 177), which has hardware implemented fault tolerance, and two real-time operating system kernels: pSOS from the Software Components Group, and a real-time version of Unix. According to Goring, the new system aims to attract the standard package market, and will be the subject of further announcements in a few months time.

NETWORK COMPUTING DEVICES TO DO X WINDOW STATION

California start-up Network Computing Devices Inc, formed in Mountain View back in February, has plans for a network display workstation designed to take the place of full diskless workstations, but more flexibility than a terminal. Company founders included Mike Harrington, Ed Basart and Doug Klein from Ridge Computer, along with key figures from Priam and Wyse Technology, and management team Bill Carrico and Judy Estrin from Bridge/3Com. Having secured \$5 million in venture capital funding, the company is currently completing development of its first product, the NCD 16, which uses a 68000 processor to host the X-Windows server and Ethernet TCP/IP - no operating system, disk drive or fan is included. "We are tracking other windowing and connectivity options", said Harrington, "but the first product will be X-based". A graphics specific chip to handle line drawing will also be included, but graphics capabilities are mostly targeted at text rather than graphics applications, at least to start with. The idea is to price the systems between dumb terminals and diskless workstations. "At Ridge, we saw a lot of manufacturers had a need for this sort of product", said Harrington. The company will sell to OEMs, system integrators and large end-users, and plans to push for European business simultaneously with the US. According to Harrington "future products will be competitive with Apple Macs and PCs".

COMPAQ RALLIES EFFORT ON 32-BIT AT-COMPATIBLE BUS

Having satisfied itself - and most analysts and industry observers - that there is little market for Micro Channel Architecture machines in the US outside large corporate accounts, Compaq Computer Corp is believed to have rallied as many as 30 companies - AST Research Inc, Epson America, Hewlett-Packard Co, NEC Corp, Olivetti SpA, Tandy Corp, Wyse Technology and Zenith Data Systems are to co-host a New York party to introduce the bus, and the Wall Street Journal also named Intel Corp and Microsoft Corp - behind a 32-bit derivative of the AT bus that would take all existing 16-bit AT boards, but would also confer most if not all of the benefits of the Micro Channel as well. The most important of these is said to be support for multiprocessors, any one of which can become the master according to the specific application being run.

NOW COMPUTER CONSOLES AIMS FOR WANG'S HEARTLAND WITH CONVERSION AIDS FOR VS USERS...

Waltham, Massachusetts-based Computer Consoles Inc really seems to have it in for its chairman, John Cunningham's former berth, Wang Laboratories Inc. Last year, the company signed with Kerridge Computers Ltd for Basic language conversion tools to attack the Wang 2200 base, and yesterday the company opened a second front against Wang with two new products aimed at the flagship VS market. VSPower is a new software product that converts Wang VS Cobol applications to Micro Focus Cobol running on Computer Consoles mini and microcomputers under Unix. Beginning with the Wang VS Cobol source code the conversion program, Cascaid, dissects the program into a portable intermediate code format. The intermediate code is modified into a format that can be constructed into the target Cobol. The program is finally rebuilt from the modified intermediate code into Micro Focus Cobol. Programs are converted in batch, with no limit on the number of programs that can be converted at one time. The company says the product provides a runtime system similar to the Wang VS environment for application development and execution. Computer Consoles has also signed an agreement with Dawn Office Automation Services Inc, San Francisco. Under the agreement Computer Consoles will market PowerConversion, a package based on Dawn Power Conversions, which converts documents between word processing programs and Computer Consoles' OfficePower Unix-based office automation system in a revisable format. The package includes two modules that provide co-existence between Wang VS/OIS systems and Computer Consoles Unix systems, and enable OfficePower users to read and write Wang 360Kb floppy archive disks. A VS Power runtime system is £1,000, a full development system is £10,000. Power Conversion is £350 to £7,000. Together with Basic-K, a Wang 2200 Basic to Computer Consoles Unix conversion product launched in June 1987 (CI No 704), the two new packages represent what the company described as "a broadside at Wang's multi-million dollar business" and are available in the fourth quarter of the year.

...AS IT SUPPLIES AUSTRALIA'S BIGGEST UNIX CONTRACT

Meantime Computer Consoles is celebrating a monster \$16m contract Down Under, won for it by Alcatel STC Australia Pty. The Golden Casket Art Union, a privately held company that provides gaming services under government authority of the state of Queensland, has bought five Power 6/32FT fault-tolerant Unix machines as part of its "total system solution" - and it is in keeping with Queensland's image as Australia's cowboy state that the what is claimed will be the largest Unix system down under will be for gambling. Alcatel STC was picked over nine other vendors. "When the systems are installed and the Queensland's Gold Lotto gaming service is completed, we will have a system that is light years ahead of the rest of the gaming world," said Merv German, development manager for Golden Casket. The original software came from "a European firm" and was written in Fortran and Alcatel STC converted it into C for Unix. When the system becomes operational, magnetically-encoded plastic gaming cards will be issued to Lotto players. Players will then be able to enter a draw by simply passing the cards through one of 800 Swedish-built gaming terminals that will be located at local agencies across Queensland. Optical scanners and microprocessors in the terminals will record the player's name, card number and game choices. These will be passed along highly secured telephone lines to the central computer. The terminal will then print a bar code on a ticket and issue it to the player as a receipt. The Queensland minister of finance, Brian Austin, is pleased too: "Quicker bets, later entry deadlines and fewer headaches for agents, due to the reliability of the new system, should improve the popularity of the game and result in increased revenue for our state," he said.

ORACLE CORP STRUCTURES NEW DESIGN LINE AROUND MULTI-USER CASE DICTIONARY

Oracle Corp, Belmont, California, last week broadened its offerings of computer-aided systems engineering products with the introduction of the multi-user Case Dictionary, based on its SQL Design Dictionary; the Case Designer graphical development workbench; and the Case Method development methodology. Case Dictionary is intended to enable analysts and designers to organise all the system requirements and design specifications of a new system, using Case Designer to enter and edit the information through graphical diagrams. The products can create and maintain an Oracle database, and the SQL Forms and SQL ReportWriter products can be used to create the system's functional modules. Case Designer uses the X Window System and a version is also planned for Microsoft's Presentation Manager. It enables team members to share access to online diagrams, and is initially available for Sun-3 Unix stations, with versions for Hewlett-Packard 9000 and DEC VAX workstations promised soon. Case Dictionary provides a central repository for "the thousands of items of information" pertaining to a development project and can be shared over a network of heterogeneous system environments, by any number of users, making use of the SQL Star distributed database system. The Oracle Case products are in beta test and full availability is set for October. Prices are based on configuration and number of users: Case Dictionary starts at \$2,000 for single-user systems, \$5,500 for multiuser ones; Case Designer at \$16,000 single-user, \$44,000 multiuser; Case Method comes bundled with the other two.

IBM - INTERGRAPH LEAD THE CAD/CAM PACK

Latest predictions on the 1988 CAD/CAM/CAE markets from market research outfit Daratech of Cambridge, Massachusetts estimate that Intergraph will move into second place behind IBM but ahead of Prime, showing growth of some 27% and revenues of \$814m. Other movers are Mentor Graphics, in fourth place with \$297m and 34% growth, Daisy Systems in ninth place with \$125m and 21% growth, and Autodesk, the fastest growing company in the top ten, with \$120m and 51% growth. GE Calma drops out of the top ten, according to Daratech. Total market size is put at \$5,186m, 14.2% up on last year.

...AS INTERGRAPH INTEGRATES PUBLISHING SOFTWARE WITH CAD/CAM/CAE

Timed to coincide with Europe's major printing exhibition, IPEX, which began last week and continues this week at Birmingham's NEC, Intergraph Corp launched a series of distributed publishing tools into the European market, centered around the Informix relational database and including WYSIWIG software combining text, spreadsheet and graphics functions to run on its Clipper-based range of workstations. The software aims to integrate the more common computer page-make-up functions with computer-aided illustration and graphics generation, and with Intergraph's more traditional business of computer-aided design, manufacturing and engineering. At IPEX, the company was demonstrating a system targeted at package designers, and ran through the design of a toothpaste tube from rough graphics sketching the idea to final design, including: 3D modelling; analysis of the model to check the fit of the package with its intended contents and verify manufacturability and durability; full 3D visualisation, with facilities for wrapping artwork round the package and creating a complete setting with scanned images, light sources, shadows etc; and output of artwork via Postscript to a variety of output devices. The same data is used for design artwork and for manufacturing information fed to numerical control machine tools. Intergraph also revealed a new Postscript image engine that can output colour separations, the Coloursetter 2000, currently under development by its recently acquired subsidiary Optronics, which will be launched next year: the imagesetter also uses Intergraph's Clipper RISC processor, and is designed to write colour Postscript files in two minutes.

88OPEN GETS FULL TIME DIRECTOR

88Open, the consortium of vendors committed to Motorola's 88000 RISC chip, has appointed its first full time executive director. He is Bob Anundson, who replaces acting director Roger Cady, and comes from Tektronix Inc. Anundson was pro tem chairman of the group of companies, including Tektronix, that eventually became 88Open just before the launch of the chip in April. The consortium now has 39 members, and according to Anundson, will concentrate on "developing a program that will accelerate the delivery of application software for 88000-based machines". 88Open Consortium Ltd has now established new offices at Wilsonville in Oregon.

ES2 BUOYANT WITH ORDERS, NEW PRODUCT

Pan European start-up European Silicon Structures, which began life three years ago this month as a venture capital start-up with support from big names such as Olivetti, Philips and Saab-Scania, gave the press an update this week on its progress from a company with no customers and unproven technology back in 1985 to the fourth largest supplier of cell-based application specific integrated circuits (ASICs). ES2, as the company is known, shipped over \$6 million worth in 1987, according to Dataquest, putting it behind only VLSI Technology in the US and Austria Micro Systeme and Rifa in Europe, and above giants such as Texas Instruments, AT&T and SGS Thomson. The approach is to offer customers a package which allows them to design custom silicon in-house, using a range of silicon design tools running on PCs, DEC VAX, or Unix based workstations from Apollo Computer and Sun Microsystems: the tools generate the designs, and include design verification testing, and the data is then passed on to ES2 for prototyping and eventual full production, if required. The tools range from the PC-based Solo 12, for simpler random logic designs, through to the Solo 1200, for analogue cells with two fixed RAM blocks, and the Solo 1400, announced yesterday, which for the first time allows designers to generate RAM, ROM and PLA blocks of the size required, automatically from pre-designed sub-cells. The advantage, according to Marketing Director Paul Gibson, is both faster design and a lower chip count, leading to cheaper end products. ES2 says it will accept orders from low volume prototypes through to high volume orders, and has access through partners such as Philips to high-volume foundries if they are required. The company says that it should exceed shipment targets this year: it has shipped 227 designs to customers so far this year, and hopes to make 366 by year end, making an average of one per day - as 1988 is a leap year.

3COM LINKS MACS TO OS/2 ETHERNET LANS AT MACWORLD

The MacWorld Expo in Boston last month was awash with companies announcing new products to add value to the various models of Apple Computer Inc's Macintosh. Amongst them was 3Com Corp of Santa Clara, California, which has developed an Ethernet adaptor called the EtherLink/SE, designed to enable the Macintosh SE to operate on a 10Mbits-per-second Ethernet and written to Apple's EtherTalk application program interface. 3Com will be connecting Macintoshes to the 3+Open Lan Manager open architecture OS/2-based network operating system. The EtherLink/SE adaptor is compatible with 3Com's 3+ for Macintosh, Apple's AppleShare, and Sun Microsystems' TOPS network operating systems and 3Com says it will "connect the power and graphic capabilities of the Macintosh SE with the high data-transport rate of Ethernet networks". The faster transport rate of Ethernet is desirable on large networks using desktop publishing or computer assisted design and engineering applications requiring large file transfers, comments 3Com, which says that the \$595 EtherLink/SE adaptor will be out in December. On the software side Novell Inc's NetWare for Macintosh, which was brought out in June, is compatible with EtherLink/SE.

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The Aftec consortium of CAP Group and Logica has installed the first of its Inmos Transputer-based fingerprint recognition systems at the UK Home Office: an array of Transputers backed by optical disk storage supports a VAX GPX workstation.

- 0 -

NCR Japan has inaugurated a sales promotion for its Unix-based Tower family of supermicros to the financial community: in particular, as well as selling the Tower 32/200 for office automation and simulation, it has added to its line the 8700 BASE financial terminal which incorporates the same 68020 processor as the Tower, and can be linked with the Tower in a Unix-based network, with System V software now regarded as suitable for use in the Third On-line Systems that are being implemented by financial institutions.

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Latest members - anyone can be a member, it costs a lot of money to become a sponsor - of the Open Software Foundation are National Semiconductor Corp, Santa Clara, California, Phoenix Technologies Ltd, Norwood, Massachusetts, and Locus Computing Corp, Santa Monica, California plus Cornell University.

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And Digital Research Inc has leaped into the Open Software Foundation alternative Unix club spotlight by putting up an enhanced version of its GEM Graphics Environment Manager for consideration as the Foundation's Application Environment Specification: it says it has already implemented a version for X Window.

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Sounds like a good move - the market for office automation software under Unix is still wide open, and Comprehensive Electronic Office is one of the most highly regarded of all the products of the Westboro, Massachusetts minimaker. Data General Corp has been tipped to offer a version of CEO to run under DG/UX Unix on its Eclipse MV minicomputers, for introduction any day now: although the company will not confirm, it does not deny that work in this area is being carried out.

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More officially, Data General looks set to add a top-end minicomputer to its range early in October.

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X/Open tests for hardware compliance will be conducted by UniSoft Group, on site or at UniSoft locations in London; Boston; Emeryville, Calif.; and Tokyo, with additional sites to be announced.

The current release of the verification suite is designed to test compliance to Portability Guide 2 and consists of 1,292 C language tests, 1,578 operating system tests, 685 internationalization tests and 190 data management (ISAM) tests, for a total of 3,745 tests: with the release of the X/Open Portability Guide 3 version of the test suite, the number of tests will be increased to approximately 4,200.

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And Unify Corp says it is committed to participation in the branding scheme.

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Unix Expo is held again this year at New York's Jacob K Javits Convention Centre, between October 31st and November 2nd: anyone from the UK wanting to visit the conference and exhibition could take advantage of the cheap travel package offered by Unix Systems magazine - contact Phil Flaxton on 04862 27661 if you are interested.

- 0 -

Following the endorsement of NCS by IBM last week (UX No 196), Apollo has stepped up its efforts to licence products including Network Computing System and the Open Dialog user interface with the formalisation of a Portable Software Products Group in the company's Chelmsford, Massachusetts headquarters: the group will have its own dedicated sales and engineering personnel, and will be responsible for promoting the technology to the industry at large; it will also handle the Network Licence Manager and future products.

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Apollo also points out that, contrary to the bleak picture painted by its last quarter figures, it is looking towards a strong next quarter, helped by shipments of the DN3500 and the new 10000 series; it says it is adding some 50 people, to its marketing and sales force, representing a 35% increase.

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With the introduction of the desktop 80386-based PS/2 Model 70s in June, and the soon-to-be-announced XT-bus-based 80286 machine, IBM's PS/2 line is something of a jumble with the 70s faster than the floor-standing 80 - there is anyway not much demand for the pedestal models: accordingly, the floorstanding 80286-based Model 60s with 44Mb and 70Mb disk are now on limited availability, implying that they are being discontinued, as is the low-end 44Mb version of the Model 80 - people need bigger disks on the 386 boxes; the new improved Model 50 survives.

Citing "changing global market conditions", Apple Computer Inc announced a broad swathe of price increases in the US at the beginning of the week, with Mac SE models up 14% and the basic Mac II up 29%.

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Relational Technology is sponsoring the Ingres Champagne rally, to be held from 11th 13th October: fifty vintage cars will compete in the rally, from London to Reims in France and back, with proceeds donated to the Combined Emergency Services Fund and the Foundation for the Study of Infant Deaths.

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The efforts to find a solution to the current vacuum in the standards world to be filled by a user interface system are hotting up: Mike Lambert, X/Open's chief technical officer said that X/Open had held a discussion meeting for its members and associates to talk about user interface requirements at the end of August: the meeting was attended by the Open Software Foundation, which in return has invited X/Open to its own user interface meeting scheduled for September 25th, and to compliment the matter further, X/Open will also be attending the National Bureau of Standards event on the same issue at around the same time: Lambert says that the interaction between the various groups should encourage them "to come up with a common solution".

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Apricot Chief Roger Foster said at the launch of its Qi range last week that the 80486 boxes it has been dropping hints about over the past few months (UX No 187) is not planned to come from Sequent Computers, the company which supplies its VX9000 parallel processors, but will sit between these machines and Apricot's low-end systems as departmental boxes.

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We'll believe it when we see it, having reported what seems like countless proposed launch dates for the elusive Next Inc workstation from Steve Jobs, but it looks like the "sleek black cube with super sound, graphics and Unix" really has to come out on October 12th: according to Newsbytes, "friends" of Next have had invitations to a gala do that day at San Francisco's big Davies Symphony Hall - and must reply on the pre-printed return forms to get in.

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Pyramid Technology has appointed Donald Guinn to its board of directors: Guinn is chairman emeritus of the Pacific Telesis Group and was vice president of network services at AT&T until 1980.

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APPLE REVEALS 68030-BASED MAC IIX

Apple provided the expected boost to its Macintosh II line yesterday with the launch of the Iix, based on Motorola's 68030 processor and 68882 maths co-processor running at 16 MHz (UX No 196). According to Apple, the new machine will be ten to fifteen percent faster than previous models, and with the 68030's on-board memory management unit will provide an "improved" platform for Apple's AUX implementation of Unix. The Mac Iix has the added advantage of Apple's new 1.44Mb floppy disk high density (FDHD) 3.5 inch disk drives, which can read and write MS-DOS, OS/2 and Apple II ProDOS files in conjunction with the Apple File Exchange utility, allowing information exchange between different computers. The machine comes with 4Mb RAM as standard (expandable to 8Mb), and in two configurations: twin floppy disk, or single floppy and 80Mb hard disk. Cost for the hard disk version, with the Mac II 6.0.2 operating system with Apple File Exchange and Hypercard, comes to £6,195: the floppy disk version is £4995. Existing Mac II users have the option of upgrading the logic board, FDHD disk drives (including system ROMs and drive controller chip), and the memory management unit. Apple also announced the new 2/40 configuration of the Macintosh SE PC, with 2Mb RAM and internal 40Mb hard disk for £3495. All the new hardware should be available in quantity from October.

.. AS TIS LEADS TREND FOR UNIX-APPLE CONNECTIVITY

DEC's recent alliance with Apple Computer has spurred other computer companies on to look at the possibilities of a closer integration between Apple hardware and Unix-based servers. Amongst those companies is MIPS Computer Systems, which has reportedly been working in house on connecting its Risc servers with Apple Pcs and workstations. MIPS is thought to be readying itself for an announcement, but meanwhile UK Unix systems house TIS has become Apple's first value added reseller for Unix networks, and is aiming at the corporate computer market. TIS will sell Apple hardware to run in conjunction with servers from both MIPS and Convergent Technologies, using the suite of uShare networking software from Information Presentation Technologies Corporation (IPT), of Calabasus, California (CI No 159). TIS, from Bourne End in Berkshire, has set up a new division called TIS Networking Services to handle the business, and will initially concentrate on installations using MIPS machines, connecting Apple workstations, terminals, PCs and printers. Networked systems can use the MIPS systems as file server, disk server or application processor, and also access Unix applications on the host system with terminal and emulation software. TIS has also been appointed UK distributor of IPT's uShare products, which implement the complete AppleTalk stack above TCP/IP to run over standard Ethernet, and expects to have versions available for NCR, Computer Consoles, Arix, and the IBM 6150 by year end. Andy Huson, TNS sales director, said a configuration of 40 Macs, 20 PCs, 6 printers, and a MIPS 120 file server with 550Mb storage would cost under £90,000, plus £15,000 for the Ethernet controllers and cabling: for smaller networks, the MIPS system also supports Apple's low-cost Local-Talk network. Apple UK managing director Keith Philips insisted that the new deal would not directly compete with DEC and Apple solutions, with DEC aiming more at its existing customer base than to new business, and said that there was still room for further deals with other vendors in order to open up Apple connectivity.

DEC MULTI-PROCESSOR HAS MERGED VMS/ULTRIX?

No confirmed sightings yet, but DEC reportedly had a six-processor VAX 6200 - the maximum you can buy is currently a four cpu version - under strict "for your eyes only" security at DECWorld in Cannes last week - which was running something purporting to be a pre-release version of a merged VMS-Ultrix operating system.

IMP SEALS PARALLEL DEAL

The sale of assets of its Parallel Computer Inc acquisition by General Automation Inc to Integrated Micro Products Ltd, Consett, County Durham, (UX No 192) really is all wrapped up and out in the open now: the UK firm paid \$900,000 in cash, securities and transferred debt, and Anaheim, California Pick systems vendor GA will have to take a \$3.8m after-tax write-off on the unhappy adventure, according to the Wall Street Journal. IMP plans to incorporate the Parallel technology into its current product range, resulting in what it claims to be "the most extensive range of binary compatible Unix machines in the business". Built around a common family of Motorola-based boards, IMP's Magi and Parallel series start at individual workstations and stretch to multi-processor fault tolerant systems and 400-user parallel processors. Now trading as IMP Inc and based in Santa Cruz, the company will continue research and development work into fault tolerance, while Parallel's Edison, New Jersey sales office will market all IMP products in the US. Most Parallel staff have been re-employed, and the company is starting recruitment: it takes on a 100-strong user base and distributors in Europe and Japan. Based in Consett, County Durham, IMP sells its VMEbus, SCSI, 68000 and 88000 products running Unix and OS-9 through OEMs and VARs.

OSF SHORTLIST READY

Gearing up for its user interface evaluation meeting scheduled for next Tuesday to Thursday (26th-28th) in Andover, near Boston, the Open Software Foundation has now begun notifying those companies whose products have made the shortlist. The list was derived from around 30 submissions, according to an OSF spokesman, who said that details would not be revealed until the second day of the event. Cambridge, UK company IXI Ltd said that its X.desktop interface was on the list, and that it would be presenting to the OSF on the first day jointly with Interfirm Graphic Systems, of Santa Clara, California. Interfirm offers a family of Unix, X Windows and high resolution products to upgrade DOS-based PC users, and says it needs an interface to provide an upgrade path from DOS interfaces like MS-Windows and Gem. The agreement should result in \$400,000 worth of X.desktop sales in the first year, according to IXI. Meanwhile, OSF says it should also be ready to reveal its next round of new members by next week: one that slipped out early was Mentor Graphics Corp.

SUN, ELECTRONIC DATA TEAM ON NETWORK FILE SYSTEM FOR MVS

Sun Microsystems Inc has teamed up with Electronic Data Systems Corp to take Sun's Network File System into the IBM mainframe world with development of MVS/NFS, to be available next spring. The aim of the new product is that any computer that supports Network File System, from personal computers to supercomputers - should have high-speed transparent access to data on IBM mainframes, and it is designed to make data residing on the mainframe appear local to network users. It will also enable remote or local users to create, modify or store new data on the host. IBM already offers its own Network File System implementation for VM. Once MVS/NFS is complete, EDS will offer it to its own customer base as part of its integrated solutions, its parent, General Motors Corp, being one of the first customers. And Sun will be licensing MVS/NFS through system integrators and distributors. No pricing data.

.. AS IBM RE-JIGS 9370s WITH LOW-END AND MID-RANGE MODELS

In what is being seen as an effort to squeeze a little more out of the 4381, IBM this week duly announced the new low-end CMOS processor for the 9370 series, killing off the 9373 Model 20 and 9375 Model 40 in the process, but failed to announce the model many had expected to come in above the 9377-90; instead it added a slugged version of this machine as the Model 80. The new processor, which implements VLSI CMOS for the first time in the 9370 so that the new processor board replaces four old ones. IBM claims that the new entry Model 30 offers double the price-performance of the previous entry level, the Model 20: in the US, the base price is \$37,000 - £23,694 here. A new 9375 Model 50 using the same processor is claimed to offer twice the performance of the Model 40, and costs \$58,000 - £37,786 here. And the Model 80, using the same Thermal Conduction Module CPU as the Model 90, is claimed to offer 1.5 times the performance of the Model 60. It costs \$142,000, £106,994 here. On the software side, the resurrection of DOS/VSE continues, and IBM now says that it will sneak its way under the Systems Application Architecture umbrella, albeit only to the extent that CICS/VSE applications will be transferrable into an MVS SAA environment. The company now lists six operating systems for the 9370 - VM, with a new, even further simplified, VM/IS release, as well as a move forward to October for VM/SP release 6; DOS/VSE; DPPX from the 8100; AIX/370 Unix; Pick; and - a real surprise, that great survivor from the medical world, mainly seen on DEC hardware, Mumps. Shipments are imminent.

...AND ADOPTS INTEL'S FASTPATH FOR 9370 MULTI-VENDOR NETWORKS

IBM has adopted Intel Corp's Fastpath 370 channel attachment interface for sale with its 9370 and 4381 mainframes. The Fastpath 9770 Connectivity Control Unit has been designed to fit into the 9370 rack to provide a channel-to-IEEE 796 Multibus link at up to 4.5Mbytes-per-second to engineering design environments, or to devices used in process control and laboratories. Connections supported include ASCII devices for the Mumps environment under VM; simultaneous high speed connection to up to four DEC VAX or Sun 3 or 4 workstations for mail bridging, tape archiving and terminal emulation, using FlexLink software; networking to 802.3 Ethernet and 802.4 Token Bus for TCP/IP and Open Systems networks. The 9770 will be sold both by Intel - as an IBM Authorised Application Specialist - and IBM - as the Intel 9770/9775 Control Unit - from late November.

DEC OUTLINES ITS ENTERPRISE-WIDE NETWORKING STRATEGY

DEC took the opportunity of its DECWorld event in Cannes to announce an "open" network management architecture based on the International Standards Organisation reference model, which it claims makes it an industry first. The architecture will be a key building block in DEC's new enterprise-wide area networking strategy and is expected to support up to 100 DEC upper level management application tools. Configuration, Fault, Performance, Security and Accounting Management are defined in the ISO five-segment reference model and those functions will be provided as a generic part of any enterprise management product, said Charles Ashman, DEC product manager for Enterprise Networking. Management applications such as DECNet Monitor, Land Traffic Monitor and Bridge Manager will be compatible with the new architecture within the next 12 months, he added. Previously these offerings were bundled onto the Network Services Processor. DECWorld at Cannes was also the venue for DEC to announce an alliance with Motorola Codex, the US data communications equipment company, to integrate their network management tools. Codex's first contribution to the Network Enterprise Management Programme will be to develop an Access Module enabling its Open Systems management products to complement DEC's range. The new partnership gave flesh to details of other elements of its "Enterprise-wide" networking strategy with the announcement of wide ranging support and services programmes to complement new hardware and software products launched last month. DEC is aiming to provide customers with "seamless management" of global multi-vendor networks including servicing and support aspects, preferably on a one-stop-shop basis. Third party agreements, such as the Motorola Codex will therefore be sought for joint development of software management tools and to provide regional support. This Third Party Programme already covers a string of partners: Siemens AG, Munich; Digital Communications Associates Inc at its offshoot in Campbell, California; and Unisys' Timeplex Inc, Woodcliff Lake, New Jersey have all agreed to make their products compatible with DEC's Enterprise portfolio. In addition, DEC launched a Service Programme, a Planning and Design Service, Integrated Support Services and Programme Management, all coming under the DEC Enterprise networking banner.

IBM TAKES SILICON GRAPHICS BOARDS, IRIS LIBRARY

IBM has gone to Silicon Graphics Inc, Mountain View for its Iris graphics boards, and will also take a licence for the Iris Graphics Library - presumably for use on the RT and 370 machines. Silicon Graphics, which also has a major OEM agreement with Control Data, looks for the IBM agreement to encourage software developers to write new applications that interface to the Iris Graphics Library. Most of IBM's graphics terminals have traditionally come from Sanders Associates, now owned by Lockheed Corp, in part in settlement of an anti-trust suit, but Silicon Graphics is reckoned by some to have the best graphics technology on the market.

ALTOS CUTS ENTRY PRICE WITH SERIES 500

Having boosted the capabilities of its Series 1000 box to support 16 users last month (UX No 191), Altos created a gap at the low-end of its new generation of 80386-based boxes, which it has now filled with a new system: the Series 500 for one to eight users. Supporting either MS-DOS 3.3 or the Altos V.3 compatible Unix operating system, the Series 500 has a price range from \$4000 to \$10000, and comes in four configurations, with from 2 - 16 Mb main memory and 40 - 70 Mb hard disk storage. Up to eight serial I/O ports and a 60 Mb streaming tape drive are options. As an MS-DOS system, the Series 500 can be connected to the Altos AdLANtes local area network, and the company said that the machine would be useable as a Unix server on the network by the second quarter of next year. Altos now claims to have installed 108,000 systems worldwide.

.. AS ALTOS COMPUTER WARNS OF OPERATING LOSS FOR ITS FISCAL FIRST QUARTER

Altos Computer Corp, San Jose, for so long near to being a dominant force in the Unix market without ever quite breaking into the top tier, has stumbled again. The company warns that it expects to report that net sales for its fiscal first quarter to September 24 will be lower than it anticipated, and down on the \$40.6m reported for its first quarter last year, when it did \$2.2m net. As a result, the company expects to report a loss on operations for the period, but sale of Communications Solutions Inc will pull its chestnuts out of the fire and give make it profitable on a net income basis. Altos attributes the shortfall in sales to a general slowdown in domestic UK market channels and to the seasonal character of its international business.

MILTOPE WINS GIANT US ARMY CONTRACT

Winner of the US Army's Army Command and Control System Common Hardware and Software (ACCS/CHS) programme, the first in a series of significant US Federal bids to be awarded (UX No 184, 195), is New-York-based Milpitoe Corporation, which succeeded against Magnavox Electronic Systems' bid of Unix-based Apple hardware. Miltope, of Melville NY, teamed up with Ford Aerospace, GTE and Analytics to bid for the contract, valued at around \$600 million over the first 5 years, and will provide systems integration and support, Hewlett Packard (HP/UX) hardware and Uniplex Business Software, along with other software programs including a validated Ada compiler compatible with the common hardware. The procurement calls for up to 100,000 Unix systems, and Uniplex reckons that the software revenues alone could exceed \$20 million during the life of the contract. ACCS/CHS is aimed at providing the basic components for the Army's command and control systems, and the use of commercially available hardware and software with maximised commonality, along with ruggedised equipment, has resulted from efforts to keep costs down. The US Army, with a 1989 Information Systems budget of \$2300 million, is second only to the Air Force's \$2500 million: other top spending US government agencies are the Navy (\$2200m), Health (\$1600m), Treasury (\$1300m), NASA (\$1300m) and Energy (\$1200m). And aside from those contracts listed in UX No 184, news of two more is expected over the next few months: the CEAP Corps of Engineers proposal for 77 Unix mainframes, to be awarded in November; and the US Navy's NARDAC proposal, also due in November, for 150 Unix systems.

MOTOROLA WITHDRAWS CYPRESS SUIT AFTER 68050 PROTECTION ASSURED

Motorola Inc is withdrawing the lawsuit it launched two weeks ago against the defectors from its 88000 development team led by Roger Ross (UX No 197), according to Electronics News. Ross, together with Carl Dobbs, Janet Souch, Steve Goldstein and Trevor Smith, all involved in the design of Motorola's 88000 Risc chip, left to form Ross Technology, a company part funded by Cypress Semiconductor to work on peripheral circuits for the Cypress Sparc program. Motorola, which had been seeking \$8 million damages, reach a preliminary agreement to withdraw the injunction, following assurances that employees "would not compromise proprietary information" on both the 88000 and 68000 series of processors. Court papers included mention of the 68050 processor, which Motorola is rumoured to be working on as a follow-up to the 68040 (UX No 196). A meeting in court on October 14th is expected to finally settle the dispute. Ross Technology, which is reportedly working on areas such as cache tag SRAM, cache data SRAM and memory management cache control units for the Sparc, has recently recruited a senior designer from the Advanced Micro Devices AMD29000 RISC team, Raju Vegeson, as chief architect, Risc products.

DEC SHIFTS VMS SENIOR MANAGEMENT TO ULTRIX

Dec claims that it is reflecting "an increased commitment to the Open Software Foundation" in recent senior management changes that put the emphasis on Ultrix systems. William J Heffner, vice president of systems software, who has led DEC's VAX/VMS software development, will now take on responsibility for the development of OSF/Ultrix systems. Heffner will continue to co-ordinate DEC's total software engineering business. And DEC's group software managers responsible for VMS systems, and applications integration architecture (AIA), CASE tools and core applications will both report directly to John F Smith, senior vice president of engineering, manufacturing and product marketing. Workstation manager Barrie Charles said that DEC's goal was to "maximise compatibility and interoperability between VMS and OSF/Ultrix as the two operating systems develop". DEC has also announced that it has submitted its XUI application program interface and user interface to the OSF (see front page).

COMPAQ ADDS DESKPRO 386/20e

Compaq Computer Corp yesterday extended its line with a 20MHz Deskpro 386/20e, claiming it offers up to 50% performance than IBM's 16MHz PS/2 70-E61, and up to 25% over the 20MHz PS/2 70-121 and 80-111. It includes integrated VGA graphics controller claimed to be 50% faster than that on the PS/2. It has 32Kb static RAM cache and comes with 1Mb CPU and 1.2Mb 5.25" floppy, \$5,200, £3,200; 29mS access buffered 40Mb disk, \$6,600, £3,800; and 25mS access buffered 110Mb disk, \$8,000, £4,800. The Deskpro 386/25 Model 60 was also added here at £4,700.

LATE DEVELOPER MATSUSHITA ELECTRIC AIMS TO GO RIGHT TO TOP OF TREE IN CHIPS

Matsushita Electric Industrial Co, scarcely in the chip business at the start of the decade, is now bidding for a place at the top table, says Agence France Presse. The Osaka giant, best known for its consumer electronics products under the Panasonic and National brand names, is the 19th largest company in the world, with turnover of \$38,500m last year - and reckons it has already made it up to fourth place in the Japanese ranking of chipmakers, having passed Mitsubishi Electric and, more startlingly, Fujitsu: it now wants to move up to number four in the world, which will mean by passing Texas Instruments Inc and Motorola Inc, and put it close to the world number three, Hitachi.

The company is banking on the next generation of memory chips to get it there, its semiconductor chief Hiroy Mizuno saying that each new generation of memory chips has overwhelmed the market leader on the previous generation. Hitachi was passed by NEC Corp, which is now battling with Toshiba Corp for top spot, the latter leading the way in 1M-bit circuits. And, in typical Japanese fashion, Matsushita is looking to the long term, laying plans to become number one in the 16M-bit memory market, not the soon-to-arrive 4M-bit parts. And it has laid the groundwork well, being the first to show a prototype of a 16M part.

High definition television

Why should memory chips be so important to a company that still pays the bills with the return on its enormous consumer electronics business? The answer is high definition television, which will require a large memory in each set - and Matsushita reckons that means memory chips storing more than 10M-bits. At present, 65% of Matsushita's chips - of all types - go into consumer electronic products, 35% into industrial products, but the company wants to slew the balance further towards the industrial market. At present, 48% of all the chips produced by its Matsushita Electronics affiliate are used by other Matsushita companies, and exports still account for only 13%, making it less vulnerable to the Ramboesque trade warriors in Washington. In the year to March, Matsushita Electronics did \$1,630m in chips, and it is looking for \$1,810m this year. Investment for new plant and equipment is set at \$394m this year, compared with Toshiba's planned \$606m and Hitachi's \$439m. But there is still an enormous gap in the memory chip business between Toshiba, doing 7m 1M-bit parts a month and Matsushita, doing just \$250,000. It is racing to expand that to 1m a month by the end of the year and 2m by next spring. And this month it will start sampling 4M-bit parts to its customers, but has not yet set a schedule for volume production.

And then there is what is being seen as a re-entry into the computer market, although most people would say that at the low end, the company had never gone away. Things always look different viewed from Japan from the way they look in the US, and from a Japanese viewpoint, Matsushita will start making workstations under licence from Sun Microsystems in November, to be marketed in the US by Solbourne Computer Inc, the Longmont, Colorado firm in which Matsushita has a 52% stake; Solbourne sees its role in the in venture in a rather more dominant light. At all events, Matsushita will soon also have a line for Japan, betting on workstations taking over the market from mainframes.

SPIDER WINS OLIVETTI/ PRIME ENDORSEMENTS

Spider Systems, from Edinburgh, has won licensing deals from Olivetti for its Spider-TCP implementation of TCP/IP for the 3B and M380 hardware lines, and from Prime Computer for its TCP and X.25 products for use on the EXL range.

BIIN TO USE MODIFIED 80386 FOR REAL TIME SYSTEMS?

Latest word on the activities of the mysterious Biin consortium formed jointly by Siemens and Intel back in June (UX No 183, 184) is that the hardware will run an operating system named Sorix, a real-time kernel with facilities for emulating Unix. It is also thought likely that the hardware, said to be aimed at mission critical applications and transaction processing, will be based on a version of Intel's 80386 processor, modified to support the fast interrupts necessary for real time operation.

HAWKE SETS UP WORKSTATION DIVISION

UK DEC distributor Hawke Systems, of Slough in Berkshire, has set up a new division to concentrate on workstation sales. The company, which also distributes systems from Motorola, will sell both DEC and Apollo workstations, using software from vendors such as SDRC and Valid.

DEC-MIPS DEAL IMMINENT, SAYS WALL STREET JOURNAL

According to the Wall Street Journal, the long mooted deal between DEC and Mips Computer Systems (UX No 188) may be announced this week: the suggestion is that DEC will take a stake in MIPS in return for the use of its high performance Risc processors for specialist hardware. One report (UX 193) suggested that DEC might also fabricate the chip, retaining the right to modify it for its own purposes.

SUN/PRISMA PROMISES 250 MIPS FROM GALLIUM ARSENIDE SPARC

Sun Microsystems has licensed its SPARC Risc chip technology to Colorado Springs-based company Prisma, for the development of a supercomputer-class machine using a gallium arsenide version of the SPARC. The system is for shipment in late 1989, with beta testing planned for the summer of 1989. In addition to high speed, said Sun, the processor will provide "exceptionally fast" interrupt services for I/O and real time applications. The Prisma CPU will have a cycle time of 4 nanoseconds, giving peak execution speeds of 250 MIPS. Included in the licencing agreement are Sun's SunOS 4.0 Unix implementation, C and Fortran compilers, and Sun's Open Network Computing tools including the Network File System. Prisma was founded in 1986 to design and manufacture supercomputer-class computers for general purpose and technical computing applications.

TODAY TECHNOLOGY PASSES TO COMPUTER POWER GROUP

As we went to press, final arrangements about the sale of BBJ's Today technology to the Australian Computer Power Group were being finalised. CPG is thought to have paid \$A4 million for the purchase, a sum not enough to cover liabilities incurred by BBJ, according to the Australian magazine ComputerWorld.

PROTEK'S SCIENTIFIC RDBMS MOVES TO UNIX

London-based software developer Protek has at last announced its Unix version of the Tekbase relational database aimed at scientists, engineers and others using large arrays of data, promised back at the end of last year (UX No 153). Tekbase was originally designed for Hewlett Packard Series 200/300 hardware, a situation "which constrained sales", according to managing director Michael Berman. The new version will initially run on Hewlett Packard HP/UX systems, but Berman says that a wide range of Unix systems will soon be supported. A requester/server architecture with full central record locking, similar to that used on Oracle, has been implemented to support multi-user capability for up to 32 users and networking: Tekbase can be run on a central system and accessed from machines running Basic or Pascal, a mix that enables automatic testing equipment, process control and instrument control systems to input data directly to the database for storing, analysis and output. Arrays of up to 128,000 elements of integer, real or complex data can be stored, and Tekbase includes a specially designed query language, TQL, for simplified data access and manipulation with trigonometrical, mathematical, statistical and analytic functions. Graphics and reports can be generated from the data. Cost is £3,000 for a 2 user system, with the programmatic interface, signal analysis and statistics package optional.

COMPAQ, AMSTRAD AMONGST EXTENDED AT BUS SUPPORTERS

As reported briefly last week (UX No 197), Compaq Computer Corp and friends - now a whole host of them, including Amstrad Plc and Olivetti, which had been proclaiming its plans for Micro Channel - last Tuesday duly unveiled their plans for EISA, the Extended Industry Standard Architecture bus. EISA specifies an AT-compatible 32-bit bus for Intel 80386 and future 80X86-based personal computers. The bus is not expected to turn up in products until late next year. The specification gives 32-bit address and data bus extensions to support memory beyond 16Mb, with 32-bit direct-memory access and 32-bit bus-master support. It has programmable board setup for auto configuration of EISA boards and software-aided configuration of switch-programmable existing AT and future EISA boards. Although some 80 companies have now declared their support, the specifications for the proposed bus will be laid down by unanimous agreement of the nine companies that came together in New York on Tuesday to outline their plans: the nine are AST Research Inc, Compaq Computer Corp, Epson America, Hewlett-Packard Co, NEC Corp, Ing C Olivetti SpA, Tandy Corp, Wyse Technology and Zenith Data Systems; licensing will be handled by a law firm and those wanting to use the bus or make chips for it will pay a \$2,500 administrative fee to the lawyers. The weakness in the strategy, as IBM was quick to point out, is that it won't start appearing in machines until late next year, and that is likely to put a crimp on the business of all the clonemakers committed to producing machines that use it - but could be good news for any manufacturer who promises to exchange old 80386 boards for new for a nominal sum when the machines do come out: otherwise, users are likely to postpone major purchases of top-end machines until the new bus does appear, in the meantime buying the cheapest 80386 boxes they can find as stop-gaps.

OPEN SYSTEMS CORP, SPAG AGREE ON CONFORMANCE TESTS

The European Standards Promotion & Applications Group and the US Corporation for Open Systems came together in Brussels yesterday to announce that they had reached agreement in the area of conformance testing of products to their standards. Interchangeable conformance testing will initially apply to products to the MAP Manufacturing Automation and TOP Technical Office Protocols. They will also work to merge their conformance testing tool kits - and 11 tools are to be matched by year-end with the first phase of this work to be complete by first quarter 1989. And they have agreed to distribute each other's test products, SPAG handling everything for Europe, the Corporation for North and South America - and they hope to bring in the Japanese grouping to do the Far East.

SUN MICROSYSTEMS ACQUIRES TYPOGRAPHIC NEWCOMER FOLIO INC

Sun Microsystems Inc has added to its growing portfolio of acquisitions with the takeover of Mountain View, California neighbour Folio Inc, a privately-held company that develops and sells typographic and imaging technologies for use in electronic publishing. In particular, Folio supplies intelligent font-scaling technology, a key component in applications development, says Sun, which, as is its wont, will operate it as a wholly owned subsidiary continuing to license its products directly. Also in the electronic publishing field, Sun has taken a \$10m two-year order for workstations from Unda Inc, which does automated pre-press systems, and \$2.5m from printing equipment specialist Monotype Corp.

IBM's 9370

- THE SAD FATE OF A VAX-KILLER

IBM admits that it positioned the 9370 wrongly when it launched it, and never has IBM had to change its stance so often or so completely on what was intended to be a major new product line. Think back to October 1986: the 9370 was brought in as the answer to all those baffled users who were seduced by the fact that where IBM offered a hotchpotch of incompatible operating systems, from DEC, you were offered VMS. Bottom to top. So the VAXkiller would offer just one operating system - one that could take users from the 9373 right up to the biggest 3090. It was a plain vanilla VM machine. In particular, DOS/VSE would be tolerated only if the user made a clear commitment to convert at the first available opportunity. At this week's UK launch of the new 9370 models, IBM was actually boasting that the thing ran six different operating systems. The six? VM, DOS/VSE, DPPX, AIX Unix, Pick and Mumps. Mumps! Next thing you know, the thing will be running OS/9, VersaDOS, Prologue, Airline Control Program and VRTX.

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Unisys Corp says that its Linc and Mapper fourth generation languages are now available across all Unisys mainline ranges, including the A Series, the 1100/2200 Series, V Series, OS/3 based systems and Unix-based architectures.

- 0 -

Ontario, Canada-based HCR Corporation has a licencing pact with Ing C Olivetti SpA under which the Italian will re-market UX-Basic directly as a strategic programming language for its LSX 3000 range: UX-Basic incorporates C-ISAM and a full interface to Unix system calls, and is currently also licensed by AT&T and Siemens.

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And HCR is to supply language conversion software specialists Rapitech Systems Inc, Suffern, New York, with a new Pascal to C translator, due out in the fourth quarter of this year.

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Fulcrum Technologies Inc's Ful/Text text retrieval system is now available for DEC VAX hardware running both VMS and Ultrix: the Ottawa, Canada-based company has also signed a worldwide technology agreement with Philips International BV under which Philips will develop CD-ROM applications and authoring systems, and is working with Office Workstations Ltd (OWL) in Edinburgh on CD products using OWL's Guide hypertext user interface.

- 0 -

The recently introduced Series 6000 local area network from Case Communications, based on the OSI protocol stack, includes a TCP/IP gateway allowing Unix-based hosts and other systems with TCP/IP to be supported on the LAN - but LAN division manager Paul Gigg, quoting figures from market researchers IDC, says that demand for TCP/IP LANS will dry up within two years: TCP/IP LANS such as those supplied by Excelan can be connected to the Series 6000, giving customers a migration path to OSI, according to Gigg.

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Sun OEM Artecon Inc, San Diego, California, has identified a lucrative market providing Sun users with a range of enhancements: products range from VME system enclosures, disk/tape subsystems and removable storage units through to carrying cases, workstation extenders and monitor arms: "We've been building turnkey workstations based on Sun for four years", said marketing director Doug Cooper, "now we're just unbundling them".

Two open systems events for the diary: Sphinx Ltd is holding its annual Open Software conference at the Cafe Royal in London between 18-20 October, including a manufacturers forum between IBM, DEC, Unisys and Sun; and later on in December comes Open Systems for Europe - Towards 1992, a seminar organised by Unicom in collaboration with Unigram-X at London's Mount Royal Hotel, which will include a presentation from Olivetti's Vittorio Cassoni.

- 0 -

With UK government departments investing £1,800m a year in information technology - over £300m on new computer systems for administration - and expenditure growing at 12% a year, the Central Computer & Telecommunications Agency is busier than ever: in order to focus on the problems and opportunities, and to bring together user departments and would-be suppliers, the Agency is organising its second Information Technology Procurement Conference in Norwich at the end of the month - Tuesday 27 to Thursday 29 September; 150 delegates from departments and 100 representatives of big computer system suppliers will attend.

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The agreement, highlighted here in July (CI No 969) under which IBM licensed Steve Jobs' Next Inc to do a user interface for IBM's AIX Unix based on Adobe Systems' Display PostScript, has now made it into the big New York dailies: the pact is expected to be announced at the launch of the Next station on October 12; IBM is said to have paid Next \$10m for the work, which may be only for the RT version of AIX

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Intel Corp is promising EISA bus chips in the second quarter 1989.

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Latest intelligence on Seymour Cray's 16-processor Gallium Arsenide Cray-3 for Cray Research Inc is that each CPU will have a two nanosecond machine cycle and deliver 12 times the performance of the Cray-2: the chips are being fabricated by Gigabit Logic Inc, and boards for it have already been assembled.

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And Seymour is already at work on the Cray-4, designing it for 64 CPUs, each with a machine cycle in the high hundreds of picoseconds.

Control Data Corp has a \$4.1m order from the People's Republic of China for five Cyber 930 small mainframes and three of the Silicon Graphics Cyber 910-300 Unix workstations, for various industrial institutes.

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Silicon Graphics Inc is indicating that its fiscal first quarter sales will be about 60% up on those for this time last year at about \$46m, but per share earnings are likely to be between 9 cents and 11 cents, compared with 22 cents a year ago.

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Amdahl Corp is tipped to come out with a uniprocessor model for its new top-end 5990 family, but only when it can begin deliveries immediately, so as not to impact sales of the 5890-390E in the interim.

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Apple Computer Inc reckons that there are now about 4.5m Apple IIs out there and the machine still represents over \$1,000m in annual sales for Apple, about 25% of the total: the company reckons that the Macintosh base is about 2.25m - but, not surprisingly, it is growing faster than the Apple II base.

- 0 -

Apollo Computer has followed Sun (UX No 196) in introducing an enhanced version of CommonLisp for its Domain series workstations: Version 2.2, for release this month, is said to increase run time speed by up to 55 percent, and Apollo has promised other features, including multitasking, for Release 3 of the product, due in the first quarter of next year: cost for new users is \$3500, with free upgrades for Version 2.10 users with maintenance contracts.

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Sheffield Micro Ltd, authors of the Uniplan production control system, have become authorised dealers for the IBM 6150.

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Another proposed acquisition has run afoul of disaffected shareholders: Convergent Inc and Unisys Corp face a class action suit challenging the proposed acquisition of Convergent by Unisys announced on August 10 on grounds that the agreed price is not high enough.

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Number 199

OSF REVEALS USER INTERFACE CONTENDERS AS TECHNOLOGY SELECTIONS SESSIONS BEGIN

As we went to press, the first of the Open Software Foundation's technology sessions was beginning at Andover, near Boston, Massachusetts. Members and non-members were gathering to judge the twenty three graphical user interface products and technologies to be presented at thirty minute sessions during the three day meeting. Shortlisted products were selected from around thirty five products originally submitted, the criteria being POSIX compliance, compatibility with version 11 of MIT's X Window system, scope of the system, technical integrity, and overall relevance to the OSF's request for technology. The expected contestants are there: Apollo Computer with Open Dialogue, DEC with XUI DECWindows, Hewlett Packard with New Wave and Sony with its widgets toolkit. AT&T, despite its rivalry with OSF is there with Open Look, and OSF sponsors Bull and Siemens are also offering technology. Other expected contestants are Adobe Systems, whose Display Postscript is likely to be the basis of Steve Jobs' Next Inc user interface, likely to be endorsed by IBM (UX No 188); Digital Research with an X-Windows based version of Gem; and the UK's IXI Ltd with Interfirm Graphic Systems. Microsoft Corp, which is known to be working on PM/X - Presentation Manager for Unix - is represented only through its collaboration with Hewlett Packard on its New Wave interface - the product that was the subject of litigation from Apple Computer. Apple itself, which some commentators expected to unbundle its proprietary user interface technology, is probably the most important absentee. Details of other products submitted have not yet emerged, but come from American Management Systems Inc, Carnegie-Mellon University, Electronic Data Systems Corp, the UK's JSB Computer Systems, NASA and Century Computing Inc, Neuron Data Inc, NMP-CAD from Sweden, Sequent Computer Systems, C++ experts Stepstone Corporation, Team Engineering Inc, the User Software Research Corp, Virtual Machine Corp, and Visual Edge Software from Canada.

60 MIPS ECL RISC INCLUDED IN DEC-MIPS DEAL

DEC duly announced its long-gestating commitment to go to MIPS Computer Systems Inc, Sunnyvale, California for RISC technology for a new generation of high-end Unix workstations - and MIPS revealed that a version of its processor designed to deliver 60 MIPS - against 20 MIPS for its current line - was being implemented in ECL for launch next year. Under the agreement with DEC, MIPS immediately gets "well over \$10m" for a 5% stake in the company sold to DEC, and DEC gets a seat on the board and the right to grow its stake to 20%, at which point it would match that of agricultural machinery manufacturer Kubota Ltd of Japan, although the latter will be diluted somewhat if it does not invest pro rata to maintain its stake. DEC reportedly chose MIPS as its partner after convincing itself that the Sunnyvale firm had the "best RISC technology". It is expected to come out with its first line of Ultrix workstations using the MIPS RISC at the turn of the year - but suggestions that this will mean curtains for the VMS VAXstations are wide of the mark: plenty of engineering software - including the Valid Logic Systems portfolio - runs only under VMS. Privately-held MIPS is expected to have sales of \$38m this year, and although it has won several medium-sized names - Prime Computer Inc, Silicon Graphics Inc among

HONEYWELL BULL SUPPORTS UNIX ON DPS 6 PLUS USING 80386

Groupe Bull SA in France has been talking for two or three years about a Unix implementation for the DPS 6 family of 32- and 16-bit minicomputers, implying that it would be native, but Honeywell Bull UK Ltd yesterday came out with an alternative solution - a co-processor board built around the 80386 to support the AT&T operating system on the DPS 6 Plus Models 410 and 420. Tortuously called XC-UPP, for eXtended Capability Unix Peer Processor, the board comes with System V Interface Definition-compliant implementation of Unix System V.3, and a user with the board fitted can concurrently run proprietary applications using the IIVS6 Plus operating system and Unix applications on the 386 processor. No price was given for the co-processor. And Bull has confirmed its intentions to raise its stake in Honeywell Bull Inc to 65% at the end of the year, from the present 42.5%; the switch will leave Honeywell Inc with 20% and NEC Corp of Tokyo with 15%.

XEROX/KERNEL DEAL HERALDS OPEN SYSTEMS

Ranx Xerox in the UK is spearheading its entry into the open systems marketplace by building up a series of strategic relationships with specialist companies. Xerox, which is set to enter the Unix and open systems arena through its recently forged relationships with AT&T and Sun Microsystems in "a year to eighteen months", according to a company spokesman, has approached around fifteen such companies, and is actively working with eight. First to be announced is a £1 million investment in software services and product company Kernel Technology from Leeds. Kernel has been working with Rank Xerox for two years on projects including communications software development, windowing and PC connection, and sees the new relationship as an extension of that business. Managing Director Mike Briercliffe said the money was needed to fund the company's forecast of 250% growth this year: the money represents a 25% stake in Kernel, matching the 25% invested by venture capital group 3i. "We were looking for active money" said Briercliffe, but stressed that the move would allow Kernel to retain its independence while guaranteeing its ability to grow. Xerox UK sells mostly to the corporate office marketplace, and says its office systems business has grown significantly since former Burroughs manager David O'Brian took over the UK operation two years ago. Xerox has committed to use Sun workstations and the SPARC processor in place of its proprietary Star workstations, and has also supported AT&T's Open Look user interface.

FINLAND ONTO UNIX STANDARD

The latest convert to the gospel of machine-independent operating systems is the government of Finland, which has announced a four year plan to replace its existing IBM systems with a set of decentralised Unix machines. Software developed for the system, reports Computerwoche, will be tested by various government bodies and departments that operate a range of DEC VAXes.

ULTRA NET OPENS 1GB CONNECTION FOR SUPERCOMPUTERS

Ultra Network Technologies Inc of Santa Clara, California, has now introduced its Ultra Network System, highlighted in Unigram-X back in March (UX No 171), saying that it can connect supercomputers, near-supercomputers and workstations in a network with a total bandwidth of one Gigabit per second. The system initially supports systems from Cray Research Inc, Convex Computer, Alliant Computer, Sun Microsystems and Silicon Graphics, and the firm says the UltraNet's effective performance is more than 50% of the available bandwidth of any high speed host's input-output subsystem. The company currently has three UltraNet hubs, each optimised for a specific host performance range: the 1000 is the 100Mbps version; the 250 supports 12 data links each at up to 25Mbps and they are \$8,000 to \$75,000 per CPU depending on the host. The UltraNet Cluster links workstations and servers at data rates over 7Mbps and throughput over 4Mbps, and is \$49,000 for four and \$79,000 for eight workstations.

GANG OF BIGGER, SMALLER MACs IN APPLE NEW PRODUCTS QUEUE

The 68030-based Macintosh II Plus is only the first of a stream of other Macintoshes in the pipeline at Apple Computer Inc, according to an internal memo written in the spring that has come Macweek magazine's way. The memo lists Macs set for introduction between now and second quarter 1990 and includes a low-end, K-12 Macintosh, a laptop and a 68030-based SE as well as the planned line-topping Tower, which like the K-12 is not expected before the fourth quarter of next year. Another box, code-name Four Square, is said to use custom input-output chips and a 20MHz 68030.

HARRIS ADDS HIGH-END REAL-TIME NIGHT HAWK

Harris Computer Systems has added a high-end system to its year-old Night Hawk family of real-time minis. Joining the 68030-based 3000, which is rated at 6 MIPS with floating point co-processor, and can have up to eight CPUs tightly coupled, the Night Hawk 700 is built of 100K ECL and 5000-gate ECL arrays with a custom floating point processor on a single board, the maths CPU doing single and double-precision work in IEEE 754 and VAX formats. Rated at 18 MIPS on the Whetstone bench mark, it uses a 160Mbyte-per-second bus, and features an innovation of three caches, for data, instructions and address translation. A dual processor configuration is rated at 36 MIPS, and up to 448Mb of global memory is supported. Operating systems are the proprietary CX/RT, and the CX/UY version of Unix 4.2 and IV for development. The 7100 with 32Mb, 32-user CX/RT and C is \$395,000, the 7200 - two CPU+maths units - is \$595,000. Deliveries are set for second quarter 1989.

GEC SOFTWARE SUPPLIES SOFTWARE FOR US ARMY ACCS CONTRACT

GEC Software Ltd, the software subsidiary of the UK's GEC plc, has announced that it collaborated with Miltope Corporation and Hewlett Packard Corp in the winning bid for the giant Army Control and Command System contract, awarded recently by the US Army (UX No 198). Over a five year period, ACCS is expected to require up to 5,000 hand-held terminals and up to 30,000 workstations together with system development software. Each development workstation will be equipped with G-Ada, GEC Software's programming support environment for the HP Ada/300 development system. The contract is the first major sale of G-Ada, part of the G-World series of development tools which GEC Software includes within its GENOS integrated project support environment. The Ada compiler used for the project was jointly developed by Hewlett Packard and Alsys.

NEW UNIX RELEASES FROM MICROPORT

Microport Systems Inc has begun shipments of two new releases of its Unix System V operating system. System V/386 version 3.0e is an enhanced version of the original V/386 release adding device driver support, tools and utilities and support for add-on products such as DOS Merge and the SysViz user interface; list price for the complete, unlimited user system is \$1,198, or \$299 for two user runtime version and \$598 for unlimited runtime. Also announced was an enhanced version of the System V/AT operating system, based on Unix V.2.

HAS OLIVETTI'S RECOVERY RUN OUT OF STEAM?

There are worries on this side of the Atlantic that the recovery confidently forecast for Italy's flagship, Ing C Olivetti SpA, may have run out of steam. Olivetti's profits plunged 29% last year as the company suffered the hangover from AT&T Co's over-enthusiastic buying of personal computers in 1986, but sales to the US phone company had been forecast to reach 150,000 machines this year, down from 210,000 in 1986 but a big improvement on the 40,000 for 1987. But now the 1988 target has been scaled back to 120,000, and the Wall Street Journal finds that analysts are lowering their estimates, suggesting that while sales may have grown 15% in the first half, figures for which are due this week, profit margins don't look like being any better than last year, when the company reported full year net profit down 29% at \$290m on sales flat at \$5,300m - and there may be a higher tax charge this year. Unless there is a first half profits rise, the company is not likely to be able to meet its target of a 20% to 30% gain for the full year. To deflect attention from the numbers, Olivetti is expected to announce a reorganisation, perhaps involving an early retirement programme and a possible splitting of the company into separate businesses for computers and for office automation, the idea being that each could go in separate directions to find international partners. And why have things gone so quiet on the issue of whether AT&T Co will keep its 21% stake in Olivetti or seek to sell it? The phone company is not going to rock the boat while it's still in with a chance of being chosen as the international partner of Italtel SpA.

BRITISH OLIVETTI LANDS UK DEFENCE MICROS SUPPLY PACT

British Olivetti Ltd is to supply floppy and hard disk micros to the UK Ministry of Defence in an exclusive agreement that could be worth up to £16m - the amount the Ministry spent last year. Olivetti's one year appointment is already effective and was made by the Ministry following tender proposals from 18 other suppliers: in addition to micros, the deal covers the supply of six types of software, plus system installation, training, maintenance and user support for hundreds of Ministry of Defence purchase points including ones in Gibraltar.

GIGATAPE FIRST OUT WITH DAT STORAGE - DESPITE LACK OF FORMATTING STANDARDS

As a prelude to the battle to produce a standard format for storing computer data on digital audio tape (DAT), European start-up Gigatape GmbH of Munich, West Germany, has launched the first DAT backup products to hit the market. The Giga 1200 system uses the diminutive DAT cassette format for storage capacities of up to 1.2 Gigabytes, with average access time of 20 seconds. According to chief executive Peter Rosenbeck, the new technology combats the imbalance between analogue tape storage capacities and the ever increasing size of Winchester disks that make backups a time consuming and cumbersome affair. Currently, Gigatape is offering Gigapack units for specific hardware, initially IBM AT compatibles and DEC Microvax, but next month Novell Netware installations, followed by the Apple Mac II, mid-range Siemens Unix machines, Sun Microsystems, Bull DPS6, and various Unix systems. The real business, however, relies on OEM business, and this in turn needs a common formatting approach. This may emerge early in October, when the Data/DAT committee is due to meet in California: the committee is supported by all the major DAT manufacturers - apart from Hewlett Packard and Sony, who are pushing their own DRR standard! Gigatape has offered its own standard to the committee, but says it can adapt its current products to whatever format is agreed. The company uses JVC drives for its Giga 1200 products, and has a strategic manufacturing alliance with Grundig. It also claims that its DAT formatting proposals have won support from CTM, Matra, NCR Europe, Norsk Data, Siemens and Kontrom. But the situation is further complicated by the emergence of analogue Video 8 and VHS backup systems, using the same helical scanning techniques as Gigatape. The IBM AT Gigapack 1200 costs around £5,505.

FIRST UNIX BOX FROM MATSUSHITA

As a forerunner to the high-end Unix workstations it plans to build in partnership with its US affiliate Solbourne Computer Corp, Longmont, Colorado, Matsushita Electric Industrial Co has previewed a station using one to four 80386 chips that will be offered with both Unix System V and the X Window system, and MS-DOS. Aimed at both office and engineering, the BE with 4Mb, 32Kb cache, 80Mb disk and two floppies, comes out in May at \$19,000.

HITACHI TO BECOME AN OPEN SOFTWARE SPONSOR?

Hitachi Ltd has not been the noisiest proponent of Unix from Japan, although it has commissioned an implementation for its mainframes from HCR Corp of Toronto, so it is something of a surprise that the firm is being tipped to become the first Japanese sponsor of the Open Software Foundation, meaning it would be in for \$4.5m a year, and be on a par with IBM, DEC, Hewlett, Apollo and the three Europeans.

APRICOT SIGMEX LAUNCHES LOWCOST WORKSTATION

The first product arising from Apricot Computers' acquisition of graphics and defence systems specialists Sigmex International back in May was revealed last week by the new company, Apricot Sigmex Ltd. The AS 8400 GKS graphics workstation is a combination of the Sigmex 6312 graphics card running as a sub-system on a modified Apricot Xen-i 386: the Sigmex board includes a 68020 processor running at 25MHz and the specialist ACRTC graphics processor from Hitachi - there is also a dual 68020 configuration - and according to Apricot Group Chief Executive Roger Foster, the combination brings high performance graphics to the sub-£10,000 market for the first time. The workstation runs GKS-based graphics tools and Sigmex graphics library tools written for its 6000 Series graphics terminals. Use of the Xen-i base, which includes MS-DOS and Xenix as standard and OS/2 as an option, allows the use of non-graphics application software. Apricot Sigmex is integrating its hardware with the Apricot kit at its Horsham, West Sussex factory, and says that it will continue to deal with customers direct, rather than going through Apricot's distribution channels. Prime application areas include architecture, cartography, molecular design and image processing, and defence applications. Cost for an AS 8400 with 17" high resolution monitor, dual processor graphics board, 2Mb RAM and 50 Mb storage is £9,950, and according to Foster, enjoy a "closer coupling of hardware and software" than the competitive and similarly priced Sun 386i and DEC Vaxstation 2000.

INFORMIX PROMISES OBJECT ORIENTED DISTRIBUTED DBMS

Informix Software Inc, Menlo Park, California, has been talking more about its planned object oriented and distributed database management software currently under development (UX No 189). Both technologies will be incorporated into the current Informix SQL-based product line, which will then become "the foundation of an integrated product line that incorporates both office automation and database technology", according to the company, formed recently as the result of a merger between Informix Corp and office automation specialists Innovative Software. Object oriented features will allow users to store any type of file, such as a spreadsheet, facsimile, digitised image or word processing document in the database, supporting the Binary Large Objects (BLOBS) format. Users will also be able to specify a character field of any length, eliminating the restrictions of fixed length fields, so that memos, letters and contracts can be stored in a database field. To retrieve the information, Informix is working on an extension of SQL with free search facilities. Distributed DBMS features, which are scheduled to be introduced during the first half of 1989, will include support for multi-site reads, single-site updates, and transparent access to data for users and applications without knowing where it is stored. Multi-user concurrency controls for data integrity and security, and network optimisation capabilities will also be included. Later releases will provide support for multi-site updates including a two phase commit protocol, and methods of structuring database tables in order to reduce network traffic. The company plans to build and release its integrated product line over the next year.

OPEN SYSTEMS INTERCONNECTION AND TCP/IP - THE IBM VIEW

IBM's raft of communications announcements last week placed Open Systems Interconnection connectivity as a complementary technology alongside IBM's very cherished heartland - Systems Applications Architecture. IBM has extended the list of SAA software interfaces, conventions and protocols by including key OSI protocols into the SAA Common Communications Support, suggesting that the Common environment builds on the strengths of IBM SNA and SAA architectures to provide application solutions in a mixed SNA/OSI operational environment - integrated into "a cohesive network offering in which the two coexist and work together". OSI products announced this week are intended primarily for communications between IBM and non-IBM systems - but these days, there are few shops apart perhaps from Lloyds Bank Plc, and even Lloyds has begun to waver of late, that are True Blue through and through.

TCP/IP - a place in the sun

The IBM announcements also highlighted the TCP/IP Transmission Control Protocol/Internet Protocol, a set of layered communications protocols defined by the US Department of Defense Advanced Research Project Agencies, which have evolved since the late 1970s. TCP/IP, notes IBM, has been used in a number of environments requiring multi-vendor connectivity and interoperability - universities, Defense Department contractors are major users as well as the Pentagon. Recently, says IBM, as the number of vendors supporting TCP/IP has increased, a larger number of users are considering the use of TCP/IP as a general purpose multi-vendor connectivity and interoperability solution for use until such time as the OSI protocols are fully available and accepted - something very definitely happening in the Unix world in both technical and commercial environments. TCP/IP, IBM reminds us, provides definitions of connectivity functions for both local- and wide-area networks. A standardised addressing procedure is used for the major TCP/IP networks to insure uniqueness of addresses, thus permitting connectivity between enterprises - this collection of TCP/IP interconnected networks is known as the Internet. Given the proper authority, a user on any of these standard TCP/IP networks can communicate to users on any other TCP/IP net. In addition, TCP/IP defines higher level communications applications such as terminal emulation - Telnet, file transfer - FTP, and electronic mail - SMTP. Most of the IBM software implementations of TCP/IP include the above functions as well as some public domain functions such as Sun's Network File System and the X Window System. TCP/IP implementations, notes IBM, may allow connectivity between different vendors' systems but may not provide all the communication functions that a user may need. Each vendor's implementation and the set of functions supported must be compared by the customer to ensure his requirements are met. This week IBM expanded its TCP/IP with the TCP/IP for MVS Pro program, its other implementations of the facility are TCP/IP for VM; TCP for the PS/2; the AIX family of Unix products; TCP/IP products for AS/400 and System/38 and 36 from IBM Business Partners.

TCP/IP - a stop-gap to full OSI

IBM goes on to explain that TCP/IP is a layered architecture similar to OSI, and that although there is a varying number of layers in the two architectures, in three areas they have similar functionality: at OSI Layers One and Two, both TCP/IP and OSI support the same functions - X25, Token-Ring and Ethernet. At OSI Layers Three and Four, the TCP and IP layers perform similar functions to the Transport and Network Layers in OSI. And in the OSI Application Layer Seven they are comparable - for electronic mail TCP/IP has SMTP, OSI X400; for file transfer there is FTP and FTAM; and for terminal emulation there's Telnet and OSI Virtual Terminal protocol. But in most cases, suggests IBM, the OSI protocols are or will have more functionality than the TCP/IP equivalents. But where users need interoperability not yet addressed by OSI, IBM is offering TCP/IP as a stop-gap. TCP/IP systems will eventually migrate to OSI as described by the US Department of Defense OSI Gosip Government Open Systems Interconnect Procurement requirement - and the extensions will be worth waiting for: OSI will offer many more network and application components to choose from to satisfy a wider range of application requirements; and there will be better vendor interoperability because of conformance testing as specified by the likes of the Corporation for Open Systems - IBM is a member.

TCP/IP and SNA

What about SNA? TCP/IP and SNA nets can coexist, says IBM, pointing out that the ability to interconnect TCP/IP networks over a SNA backbone is an example of coexistence. Also, users of a TCP/IP net can log on to IBM SNA hosts using the Telnet facility and an IBM gateway host with both TCP/IP and SNA installed. And IBM has application gateway products to facilitate Profs Professional Office System-to-SMTP mail transfer. Some customers, it suggests, will use TCP/IP and SNA network coexistence as their networking interoperability solution until the transition from TCP/IP to OSI has occurred. In the US, IBM notes, it is a major participant in the National Science Foundation project to operate and manage the NSFNet TCP/IP backbone network with IBM's NetView network manager, and IBM is participating in adapting the network as required to facilitate transition from TCP/IP to OSI protocols over the life of the NSFNet project.

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AT&T/SUN HOLD TECHNICAL SESSIONS ON UNIX RELEASE V.4

Scheduled for release in the third quarter of 1989, AT&T's UNIX System V Release 4.0 aims to unify previous UNIX system variants, including earlier releases of UNIX System V and its Berkeley and XENIX(R) derivatives, as well as the SunOS version from co-developers Sun Microsystems. Its impact has undoubtedly been affected by the industry rebellion that spawned the Open Software Foundation, but with continuing rumours of a reconciliation between the two factions before year end, and many either unconvinced by the OSF or committed to AT&T's software or Sun's SPARC technology, interest remains high. Now the two companies are holding a series of seminars to explain Release 4.0 to software developers, VARs, and corporate end-users. "We promised to tell the UNIX system community about the features of UNIX System V Release 4.0 as early as possible," said Robert M. Kavner, president of AT&T's Data Systems Group. The first three day conference, co-sponsored by AT&T and Sun Microsystems, was held last week in New York, and the second is taking place this week in Los Angeles. Attendees are promised detailed technical information, and will be told how to adapt applications written for existing releases of UNIX System V, SunOS, Berkeley and XENIX versions of the UNIX system to utilise the new features of V.4. Issues covered include the new features, the operating system's adherence to standards such as POSIX and the X/Open Common Applications Environment, the X11/News graphics and windowing interface, and AT&T's Open Look user interface. Also included will be an explanation of new networked computing capabilities, and Application Binary Interfaces (ABIs), which AT&T hopes will create off-the-shelf markets for UNIX system applications. Those who have missed out on the first two events can book for the remaining sessions; at Tokyo (Oct 12-14th), London (Oct 26-28th), Boston (Nov 9-11th), Chicago (Nov 29 - Dec 1st), San Francisco (Dec 6-8th), and Washington (Dec 13-15th).

MF SYSTEMS LAUNCHES METAFOUR "FOURTH GENERATION ENVIRONMENT"

London-based software house MF systems has been working for some time on the components of what it calls a fourth generation environment - consisting of a fourth generation language for programmers, a report generator for end-users, word processor, database and print spooler, all integrated into the single package. MF provides the value added resellers it is targeting with the shell of basic accounts ledgers, encouraging them to build custom applications around the product. The close integration between the various elements goes beyond a standardised user interface throughout, according to managing director Mark Rogers: word processed documents can be processed by the database and manipulated by the 4GL, and the word processor is used as the basic input medium for 4GL programming. Metafour is portable across MS-DOS, Concurrent-DOS, Systime's MPS operating system and all versions of Unix and Xenix, said Rogers, as machine dependent functions such as file access and terminal and printer output are dealt with by Metafour facilities, not the operating system. MF is currently working on a VMS version, and will release an OS/2 version once demand justifies it. The company hopes that dealers looking to move from proprietary systems to Unix will provide the main custom for Metafour; the 4GL is said to include functions that can provide 3GL type routines without the need to resort to traditional languages. The Metafour relational database features an optimised storage facility, but the company can provide a C-ISAM gateway for access to existing database. Business target is 50 active dealers in the UK, and the company is setting up a European distributor network. OEM deals are in place with Systime and TFB Rair.

MICRO FOCUS ON TARGET FOR 1988

Scrutiny of yesterday's half year results shows Newbury-based Cobol language specialist Micro Focus Plc well on target to meet its three major 1988 objectives. Sales were up 43.0% at £10.0m, while cash collections of £10.4m, resulting in a positive cash flow of £700,000, finally served to eliminate the company's net bank borrowings, which stood at £2.1m in July last year. Pre-tax profits for the six months were up a massive 331% at £992,000, although profitability was down slightly, in percentage terms, from last year's overall figure of 9.7% to 9.2%. Managing director Colin West blamed the slight drop on the inability of company's existing production methods to meet the growing volume of product shipments - a situation that, he declared, could and would be rectified by using more sub-contractors and changes in documentation.

Japan sales down 9%

A breakdown of business done by territory showed European sales up 69% to £3.9m, with US sales, recorded in dollars, up 60% to \$8.5m. In Japan, however, sales were down 9.5% at the equivalent of \$2.1m - not, according to West, a bad result, but a reflection of the "extremely good" Japanese results which the company recorded last year. In addition, argued West, a "good August" in Japan, could be taken to indicate that things were on course for an encouraging second half result. In terms of revenue distribution, figures showed the US unchanged at 50%, Japan down to 11% from 20%, and Europe up to 39% from 30%; good OEM results and a 30% expansion of the distributor network for the company's Cobol/2 Workbench were cited as the major reasons behind the growth. Revenue analysis figures for the six months showed a 45% contribution from the company's OEM operations, with 44% generated by direct sales; the remaining 11% comes from the company's 50% owned subsidiary, Softwright Systems Ltd. Figures aside, the company was able to report a number of achievements from the individual divisions, created as a restructuring exercise last year. The Computer Industry division - the generic term for the company's OEM business in the US and Japan - reported turnover for the period up 13%, agreements, due to materialise during the course of the year, on a wide range of RISC processors including Sun Sparc, Motorola 88000, IBM RT and the MIPS chips, and the launch of a number of 80386 products. Within the Packaged Product division, the company announced a "dramatic" 94% increase in turnover, the expansion of support services for large corporate customers, and the "very important" alliance signed with Microsoft Corp which had already widened its marketplace "significantly". For Micro Focus Europe, the company was able to report a 64% increase in turnover, and, in addition to the extension of the distributor network, a move amongst 60% of its OEM customers over to Cobol/2. Future plans include continued growth on the OEM side, the placing, in the light of the successful Sage Software deal, of greater "emphasis" on value-added resellers and independent software vendors, the availability of certain, unspecified, tools from the Packaged Product Line to OEM customers, and expansion of distribution alliances of the Microsoft kind for the core compiler product.

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Latest members of the new Transaction Processing Performance Council, (UX No 193) are Cullinet Software, Hewlett Packard, Honeywell Bull, ICL, Informix Software, Oracle, Prime Computer, Relational Technology, Sequent Computer, Sequola Systems, Tolerant Systems and Unisys: with the seven founding members this brings current membership up to 19.

- 0 -

Oracle Corp, Belmont, California has introduced an interface between the Oracle relational database management system and Alis, Applix Inc's integrated office automation program for Unix systems: it will be sold via a joint marketing deal.

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Tatung Corp of Taiwan is to market Pyramid Technology Corp RISC Unix minis under the Tatung brand name.

- 0 -

Nixdorf Computer Corp of Waltham, Massachusetts has won the Paderborner a substantial US Unix contract, \$3.5m contract to equip the New Hampshire State Liquor Commission with a network of point-of-sale terminals and Unix processors for each of its 75 retail drink stores: the agreement is for 230 Unix-based terminals and 77 Targon processors, to be used to process sales and record and monitor sales and inventory data, for transmission to the Liquor Commission's main office in Concord; a pilot is set for January with completion wanted by end-1989.

- 0 -

The North Carolina Computer Commission has settled on a Cray Research Y-MP/432 for the North Carolina Supercomputing Center in Research Triangle Park: total capital budget for computer and centre is \$18m.

- 0 -

American Superconductor Corp, formed last year in Cambridge, Massachusetts to apply new superconducting materials in electronic applications, has licensed technology for making ceramic superconducting wire from the US Argonne National Laboratory in Argonne, Illinois: it will also put up \$100,000 to fund further research in the field at the lab; American Superconductor has already acquired superconducting technology from metals manufacturer Inco Ltd, Toronto, and from Massachusetts Institute of Technology.

- 0 -

Floating Point Systems Inc, Beaverton, Oregon, is not planning to change its name or anything quite as drastic as that, but it would appreciate it if you could please in future refer to it as FPS Computing: the alternative name, it believes, better reflects its business of making and selling mid-range supercomputers, integrated compute servers, and array processors.

And for Edge Computer Corp read Edgecore Technology Inc: the Scottsdale, Arizona 68030-compatible CPU manufacturer has changed its name - no doubt because there are other companies called Edge, but it is a trifle unfortunate coming at a time when as a result of its agreements with Motorola Inc and Olivetti SpA it was beginning to become quite well known under its original name.

- 0 -

Gould Inc and Nippon Mining Co have agreed to put all the defence-related interests of the Rolling Meadows, Illinois company into a "voting trust" when Nippon Mining completes its agreed \$1,100m tender offer for Gould: the voting trustees with the duty of protecting the security of the operations will be a retired general, a retired admiral and a former undersecretary of defence; units affected include NavCom, which Nippon definitely intends to sell, and Gould Computer Systems, which looks more likely to be sold following the Pentagon requirement that it go into a trust.

- 0 -

National Semiconductor Corp and Schlumberger Ltd are in dispute over the \$122m paid by NatSemi for Fairchild Inc: Schlumberger says NatSemi should pay another \$15m for "hidden assets" that have since come to light, NatSemi says nonsense, we paid \$10m too much and we want it back; the disagreement has now been taken to arbitration.

- 0 -

Unisys Corp now has a definitive agreement for its proposed acquisition of Convergent Inc for \$7 a share: each holder will get 40% of the sum in cash and the rest in Unisys shares, although Unisys can pay all cash if it decides to: the usual shareholder and regulatory approvals are still needed, and completion is expected to take place late in the fourth quarter.

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It is clear from the capacities of Winchester drives in the same form factor that floppy disks could pack much more data if only the read-write heads could be positioned precisely enough - now Insite Peripherals Inc of Santa Clara, California reckons that its Floptical drive is the answer: the drive uses optical tracking to position the read-write heads accurately, whereupon the magnetic heads take over, and the company reckons that the thing can store something like 20Mb, and according to the Wall Street Journal, will cost no more than \$250 in large OEM quantities, with disks at about \$2.50 apiece; who wants it? Apple Computer Inc currently has to deliver A/UX Unix for the Mac II on 70 floppy disks, and it would be nice to get that down to just three Floptical ones.

Status under Unix appears to be catching on: following UCL's deal with Harwell Computer Power to market the text retrieval package on Fortune hardware (UX No 194), Prime Computer say it will jointly market and support the product on its Primos, Unix and MS-DOS machines in conjunction with Memory Computer.

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Edge Computer Inc, (now read Edgecore), is keen to see an Apple Computer Macintosh built around its super-high-performance 68030-compatible processor boards - Edge reckons its Edge 2400 is about 10 times as fast as a 68030-based box: the company told Microbytes that it had been talking to Apple about the Cupertino company building a server around the Edge CPU - "We can run Appleshare at 15 times the speed they're running it," declares Edge.

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Pyramid Technology is expected to introduce the next generation of its RISC-based minicomputer line by year end.

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Unisys has won a \$10 million contract for Unix systems to be used at the US Department of Labor: in its role as a systems integrator, Unisys will supply the DOL with 28 Sequent Symmetry parallel processors, Informix relational database software, and other software and peripherals: competition for the order reportedly came from Pyramid, Encore and Elexsi.

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Also involved in the contract was Sun OEM Artecon Inc, Carlsbad, California, which claims an \$8 million contract for the installation, training, documentation and maintenance of workstation systems and software: the company will configure four basic systems for the DOL, three based on 68020-based Suns, and the fourth using SPARC based workstations, and the systems will support from 16 to 100 simultaneous users.

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The poor inoffensive little IBM Personal System/2 seems to generate a remarkable amount of vicious hate - after all, it hasn't done anyone any harm, not even the competition, and doesn't look likely to - but if it engenders fear and loathing in you, you might like to mail \$12 plus whatever you think post and packing should be (it's \$1.50 in the US) to Advanced Systems Consultants in Chatsworth, California, and ask them to mail you their Just Say No T-shirt which shows the PS/2 logo in a red ring with bar - like the No Entry road sign - and the message Support Classic PC Technology; if \$1.50 is your limit there's a similar badge.

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ICL MERGES DENMARK SUBSIDIARY WITH RC COMPUTER, TAKES 50%...

ICL Denmark will become the UK mainframer's second biggest European subsidiary after ICL France following an agreement under which ICL has taken a 50% stake in the flagship Danish computer manufacturer Regnecentralen A/S, which trades as RC Computer, with Danish interests holding the other 50%; ICL Denmark will be merged with Regnecentralen to create a group with £50m annual sales and 700 employees in Denmark. Alcatel NV was previously the dominant shareholder in the Danish company, but was open to offers for all the former ITT computer businesses. Like ICL, RC Computer is committed to Unix, selling its own 68000 family machines; it also has a licence for Tolerant Systems' fault-tolerant implementation of Unix. On the data communications side, it has a unit that builds packet-switched networks.

...RECASTS DRS LINE TO EMBRACE ITS CLAN UNIX SYSTEMS

ICL also announced the unification of its existing Clan Unix and DRS MS-DOS, Concurrent DOS and Unix ranges under the the DRS brand name. In addition to the new product, the workstation range will now feature a DRS Model 60 - the old DRS PWS - and a DRS Model 80, previously known as the DRS PWS 386. The DRS 300 server becomes the DRS Series 300, Clan 4 is renamed DRS Series 400, and the Clan 5, 6, and 7 and now described collectively as the DRS Series 500.

...AND ADDS £1,000 ENTRY-LEVEL RS INTELLIGENT WORKSTATION...

In what it is heralding as the first of a generation of workstation products, ICL last week launched a new entry-level intelligent workstation. Called the DRS Model 30, the Intel 8086-based system runs MS-DOS 3.3 and features fixed disks, 3.5" floppies and VGA graphics. The company, which predicts a 10,000-machines-within-a-year take-up by its departmental and business users in the UK alone, envisages four main areas of application: the running of individual spreadsheet and word processing-type packages, and the provision of access to either departmental systems and data bases, centralised, corporate application systems - either the proprietary Series 39 mainframes or IBM via SNA -, or external, third party information services and databases such as Telerate. The system can also be plugged into a DRS 300 Microlan network, or used as a stand-alone product. For the "competitive" starting price of £990, users get 640Kb of memory, two 720Kb floppies and a monochrome monitor, while £1,590 buys a fixed disk system comprising one 20Mb disk and a colour monitor - both variants are available immediately.

PHILIPS READY WITH 68030 MICRO RANGE

Philips Business Systems first previewed its Motorola 68030-based P9050 systems at the Hannover Fair back in March (UX No 172), but has only just got round to announcing the full range of its next generation P9000 Unix departmental computers in Paris: the first UK airing will be at London's Government Computing Exhibition on November 16th. The processor gives a boost to the price/performance of the current P9050 and P9070 boxes, which are supplemented with a new high-end model, the P9090. The low-end model uses a highly integrated single board VME-compatible computer which includes 20MHz cpu, floating point processor, 4Mb on board memory, Ethernet controller, SCSI disk and tape controller, 4 workstation ports and a printer port: the top-end models use a more conventional board with just cpu and processor, but with faster (25MHz and 33MHz) clock speeds and high speed off-cpu memory. The Unix V.3 compatible systems range from the 4 terminal P9050 to the 100 plus P9090, with 390Mb disk and up to 40Mb memory. Low-end system shipments have already begun, and the P9090 will be ready by January: no prices were given.

IRIS PC AND MULTI-PROCESSING FROM SILICON GRAPHICS

3D workstation specialist Silicon Graphics has been talking for some time about extending its product line with multi-processor versions of its Iris workstations, but this week the company also came up with a low-cost "personal workstation" for the bottom end of the market, along with a series of three multi-processors rated at 20, 40 and 80 millions of instructions per second. The £15,000 4D/20 workstation, aimed at computer-aided design, animation, simulation and molecular modelling applications is based on the 12.5 MHz RISC processor from MIPS Computer Systems, with 8 Mb memory, 170 Mb internal disk drive, and 19" colour monitor with 1290 x 1024 resolution. The workstation includes the Silicon Graphics proprietary graphics subsystem, and the company says that advances in VLSI technology has allowed them to shrink the five board set used in higher end systems onto a single board. A 4D/20G model, costing £23,000, adds 24 colour bit planes and 24 bit Z-buffer for hidden surface removal. At the top-end is the new Power Iris range, topped by the 80 MIPS 4D/240 using four 25 MHz RISC chips, designed to allow complex graphical analysis and display to run in parallel with dynamic calculations. Prices range from £106,000 for the 240, down to £91,000 for the three-processor 220 and £76,000 for the two-processor 120 model.

HITACHI JOINS OSF AS SPONSOR...

Hitachi Ltd has, as expected (UX No 198) become the ninth sponsor of the Lawrence, Massachusetts-based Open Software Foundation, joining IBM, DEC, Hewlett-Packard Co, Apollo Computer Inc, Nixdorf Computer AG, Bull SA, Philips NV and Siemens AG in making a substantial cash commitment to the alternative Unix club. Hitachi is the first Asian, and according to OSF president Henry Crouse "will play a pivotal role in building our presence in Japan". Hitachi says it plans to incorporate OSF technology into its product line. The Lawrence base is still a temporary home for the Foundation, which is promising its standard Unix based IBM's AIX implementation in 15 to 21 months. It moves into Symbolics Cambridge base on November 1. Meanwhile, Hitachi Ltd is again saying that it is looking at a move onto the US and European personal computer market with 80386 and 80286 AT-compatibles, and will assemble in the US. It says it is also considering implementation of IBM's Micro Channel.

SYBASE FIRST WITH B1 SECURE DATABASE

Relational database specialists Sybase chose the UK's Mil-comp 88 exhibition at Wembley last week for the worldwide announcement of its Secure SQL Server database, which it claims will be the first multi-level secure database products to conform to the US National Computer Security Centre's Orange Book B1 and B2 classifications. The B1 product has been implemented on DEC VAX hardware running under Ultrix - to take advantage of both government procurement requirements and work underway at Digital on secure operating systems, according to Sybase. The more secure B2 version runs on bare VAX hardware, with the Sybase software taking over the operating system functions. The product was developed in conjunction with US defence contractor TRW, which supplied the security expertise, and allows a single relational database to store data subject to multiple security classifications. According to Sybase, the product goes beyond the usual file level security controls to provide mandatory security at the RDBMS row level, and has up to 16 hierarchical classifications and 64 compartment categories. Security auditing and tracing monitors system access and sets an alarm off in the event of unauthorised usage. Sybase says that its design aim for Secure SQL was for no more than 10 to 15% performance overhead to be added by the security features over the commercial product - it will only know if this has been achieved once beta-testing starts in December. A spokesman from Sybase UK said that "a major government agency" had agreed to test the software for its final B1 testing. Sybase says the system is "an investment for the future", expecting that many commercial applications, particularly in finance and banking, will require the same levels of security as standard by the 1990s.

DAISY SYSTEMS LAUNCHES \$8 A SHARE TENDER FOR CADNETIX

Recovered from the setbacks that saw a change of management, abandonment of manufacture of its own machines and conversion of its computer-aided design software for Sun Microsystems' SunOS Unix, Daisy Systems Corp, Mountain View, is getting aggressive and seeking a major expansion with a hostile tender offer for 51% of Cadnetix Corp. It is offering \$8 cash a share for 7.2m shares, or 11.7m if Cadnetix has completed its proposed acquisitions of HHB Systems Inc and Simucad Inc by the time of purchase, valuing Cadnetix at \$112.9m, or \$183.5m with the two acquisitions. If it gains control, it intends to exchange the balance of the shares for debt securities valued at \$8 a share, but is prepared to pay \$8 cash for all the shares if Cadnetix's board will recommend the offer. It says it has about \$50m cash available from working capital, and reckons it can raise whatever extra it might need for the all cash alternative. It will be lucky to get Cadnetix for \$8 a share: it represents a premium of only 75 cents over the price prior to the offer.

APOLLO SHIPS FIRST PRISM SUPERWORKSTATIONS

Apollo Computer Inc said last week it had begun shipments of its Series 10000 Personal Supercomputer based on its Prism architecture: initial customers include Aerospatiale SA in France, Boeing Co, ChemShare Corp, Chicago Research & Trading Group Ltd, Imperial College here in London, Mentor Graphics Corp, Mitsubishi Kasei Corp, Japan, the National Institutes of Health and Westinghouse Electric Corp.

ORACLE MOVES INTO EASY-TO-CHANGE APPLICATIONS IN US, UK

Oracle Corp has made a slightly surprising diversification into applications on both side of the Atlantic. In the US, it announced the Oracle Financials suite of applications for centralised and decentralised accounting departments in companies of any size. The first four products are Oracle General Ledger, Payables, Purchasing and Assets, and are already being shipped to Sequent Computer and DEC VAX users, with versions for all other hardware on which the Oracle database runs to follow shortly. In the UK, the company announced Oracle Personnel and Oracle Accounting, for minis and mainframes. The thinking behind the move is that the horizontal applications market is forecast to grow to £290m in 1990, from its current £200m, and that there is an increasing need for accounting and personnel departments to have software that is able to accommodate changing demands more efficiently. Oracle says the packages, developed in Richmond, Greater London, will be aimed at users of all major hardware, including IBM mainframes, DEC VAXes, Hewlett-Packard MPE and a host of Unix machines. The packages were written in SQL, and Computer Aided Systems Engineering has been used throughout, and the company claims that it has overcome the "inherent inflexibility" of previous packages by offering the first accounting and personnel software packages that use fourth generation development techniques. New features include graphical representation of all information; security provided by personalised menus; and European language facilities and multi-currency functions; the new products can accommodate the package launched in April for Lotus 1-2-3 users. Prices depend on the size of host.

RE-STRUCTURED OLIVETTI ADMITS TO "NO OBLIGATION" FOR AT&T PRODUCTS

The much-flagged restructuring of Olivetti's business was announced last week, and the company said it was creating three divisions - Olivetti Office, Olivetti Systems & Networks and Olivetti Information Services with effect from January 1 1989. One year later the three units will become free-standing companies, wholly-owned, at least initially, by Ing C Olivetti & Co SpA. Triumph-Adler AG chairman Franco Tato gets the Office division, Luigi Mercurio, founder of David Systems in Mountain View, California gets Systems, and group chairman Carlo's brother Franco de Benedetti gets Services. The split of business is put at \$2,200m or so each for Office and Systems and Networks, and \$300m for Information Services. And in line with what AT&T Co was saying back in May, Olivetti says that under its revised arrangements with the US phone company, neither side is any longer obligated to take the other's products "unless it makes good strategic sense": that sounds like a phase-out by Olivetti of the poorly-performing AT&T 3B Unix machines, and makes it quite likely that AT&T will look for a cheaper source of supply of personal computers, although it has increased its purchases from Olivetti this year.

TRANSPARENT COMPUTING ENVIRONMENT TAKES CONTROL DATA INTO THE 1990s.

Control Data Corp is the latest proprietary mainframer to be bitten by the open systems bug: last month in Vienna the company demonstrated its multi-vendor networking products to customers and journalists, claiming that it was now half way through its Transparent Computing Environment programme. CDC can currently link up PCs, and Macintoshes to its Cyber mainframe systems running the NOS/VE operating system, as well as workstations from Sun Microsystems and Silicon Graphics, which it rebadges. Macintosh users can access the mainframes via the Mac user interface using the Desktop/VE product, and the company also has interfaces for PCs running its Officeware office automation system, and is working on an implementation of X Windows. CDC also plans to incorporate OSI compliant protocols within its CDCNet networking product by the first quarter of 1989, and says it will standardise around a "cohesive software architecture" consisting of standard language implementations (Fortran, Cobol, Pascal, C and Ada) and operating systems services based around Unix on all its hardware platforms. Unix currently runs native on the Cyber workstations and ETA supercomputers, and is promised for the mainframe line by the end of 1989.

CONTROL DATA FOLDS ETA INTO ITS MAINFRAME BUSINESS

Control Data has finally given up completely on its idea of turning its scientific supercomputer business into a freestanding company in which it is no more than a major shareholder - it originally wanted outside investors to take up to 50% but had to settle for only a small minority of the shares held by the principals - and has merged ETA with its Cyber mainframe business. The move is expected to lead to a cut in the ETA workforce at its St Paul, Minnesota headquarters and could save \$20m a year; its president, Carl Ledbetter, has been reassigned to a marketing post at the new computer products group. Sale of a minority stake in its new Imprimis Technology disk drive business, or putting it in a joint venture with another company is also on the cards, and details could be announced any day now, observers say.

XEROX PLANS MORE COMPUTER SPIN-OFFS TO FOLLOW ENVOS

Following the creation of Envos Corp as a minority owned affiliate from its artificial intelligence business (UX No 195), Xerox Corp is planning to spin out more of its computer-related business in a similar manner, and says that where the Envos spin-out took a year, it wants to speed the process up, bringing it down to around two months.

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ADVANCED MICRO GAINS WELCOME SOFTWARE SUPPORT

Although Advanced Micro Devices announced last week that its third quarter profits would be sharply reduced following a softening of demand in the personal computer market, the company can take some comfort in the fact that its upmarket Am29000 RISC microprocessor is at least gaining some much needed software support. Announced this week were two joint developments with software companies. JMI Software Consultants Inc of Spring House Philadelphia, has announced the availability of C Executive, a real-time multi-tasking operating system for use in embedded control applications, which according to JMI vice president Ed Rathje "provides the portability vehicle to move embedded applications to the 29000 just as Unix provides a portable pathway to move Unix applications over". C Executive is used in embedded applications from companies such as GTE, Boeing Electronics, Perkin Elmer, Xerox Corporation and 3M. And Beaverton, Oregon based Quantitative Technology Corporation says it has developed application tools for the processor including floating point emulation trap handlers, which implement floating point operations without the need for an accelerator chip, and high speed math library functions. The Am29000 comes in 16, 20, and 25 MHz versions, with a 30 MHz version currently being sampled. The chip is aimed at embedded controllers, Unix workstations or multiprocessing systems, but its use has so far been restricted mostly to specialist use.

O'SHEA LEAVES UNISOFT FOR OSF - GOLDSTEIN HEAD OF R & D

Donal O'Shea, chief executive of Unisoft Corporation, has left the company to take one of the first permanent posts announced by the Open Software Foundation, it was revealed at the Foundation's member meeting in Boston last week. O'Shea will become vice president of operations and communications for OSF, responsible for overall direction of strategic relationships. Also announced was the appointment of Ira Goldstein as the vice president of research. Goldstein, a former professor of computer science at Massachusetts Institute of Technology, held this position on an interim basis over the last few months: he was previously manager of research and development at Hewlett Packard.

GOLDEN TRIANGLE USES MAC IIs FOR REAL TIME DEVELOPMENT

Specialised real-time applications can be run on a Macintosh II-based platform, according to one year old San Diego-based Golden Triangle Computers Inc. The company has recently released its GT/X real-time operating system implementation of VxWorks, developed by Wind River Systems (UX No 130,185), which runs in conjunction with its FirePower Mac co-processor. GT/X is closely integrated with Apple Computer's A/UX implementation of Unix on the Mac, and has been ported to the FirePower NuBus-based master/slave co-processor, which has a 25 MHz 68020 processor, optional co-processor, one or four Mb memory, "much faster" SCSI, and two AppleTalk-compatible serial ports. GT/X communicates with A/UX as a remote process using TCP/IP over the NuBus. Applications are developed under A/UX as unlinked modules, downloaded to GT/X, then dynamically linked using GT/X as a debugging environment. The company also offers Apple's own MR-DOS (Macintosh real-time operating system), and the Unix-like UniFLEX operating system from Technical Systems Consultants.

BULL CHIEF STERN SEES NEW OPPORTUNITIES FOR EUROPEANS - BUT UK, ITALY REMAIN US-RUN

Jacques Stern, chairman and chief executive officer of Groupe Bull, flew into town yesterday to head an open discussion touching on a number of themes close to the Honeywell Bull heart. Looking at the trends emerging and developing within the information technology world, Stern spoke of a move away from information processing and automation pure and simple, towards using information as an edge-creating, management tool. "For the first time," he argued, "intelligence is being applied in the process of developing and bringing goods to the market." At the technological level, he detected a move away from centralised systems, and the arrival of a new distributed era based increasingly around networks. Bull's response would, he declared, be the provision of greater interoperability, interconnectivity and software portability, and a continuing drive, through its X/Open activities, to persuade users to adopt "a standard approach". As far as European industry as a whole was concerned, he claimed that emerging trends made it much easier for new manufacturers with a small share of the market to gain business: manufacturers had, he said, "much more opportunity to gain, than risk to lose" within what was increasingly a mature, customer-driven market.

Although Europe's share of the world computer market was still small, he drew upon a wealth of statistics to prove it presented companies like Honeywell Bull with numerous opportunities. Between 1985 and 1987, US firms lost some 13% of European business, while Europeans had gained some five percentage points. Overall, European companies now held 47% of the European market, compared with the 1985 figure of around 32%. Although still lagging behind in the investment stakes, he concluded that the European market had the potential to grow "much, much faster" than any other market. Honeywell Bull's ambition, was, he claimed, to become the world leader in open systems - a position which it could and would achieve through its strength, resources and expertise, and its unique world-wide capability for systems integration and distribution provided by its development centre in Hemel Hempstead. Projected research and development spending for 1989 now stands at over \$600m. At a practical level, Bull has indicated that it will opt to increase its share-holding in Honeywell Bull Inc to 65% at the end of the year, and continue to forge alliances and partnerships "where they make sense." One apparently sensible move clearly not on the agenda, however, is the integration of Honeywell Bull UK and Honeywell Bull Italy into the Paris-based Bull fold; both will continue to operate as European subsidiaries of their US parent, Honeywell Bull Inc in Billerica.

* Honeywell Bull Inc has now announced its version of Los Angeles-based Teradata Inc's Intel 80386-based DBC 1012 back-end relational database machine: Honeywell Bull calls its OEM version the Relational DBC and offers it for use with its DPS 8000 and DPS 90 and earlier mainframes under GCOS 8 - the back-end can serve from one to 16 hosts and prices start at \$365,000, \$24,250 a month on a one-year lease, with maintenance costs from \$1,125 a month.

SUN PICKS LACHMAN ASSOCIATES FOR SYSTEM V.4 TCP/IP

Sun Microsystems Inc has licensed Lachman Associates' TCP/IP product for use in the forthcoming SunOS 4.0 and AT&T Unix System V Release 4 operating system. Under the agreement, Sun has the rights to use the System V Streams TCP/IP product across its product line, as well as for part of the joint operating system development work with AT&T. Lachman Associates developed the TCP/IP source code technology in conjunction with Convergent Technologies as part of a joint development agreement signed in 1986.

THE PRICE PENALTY OF UNIX AND GRAPHICS, BY STEVE JOBS

Unix was being heavily plugged at the recent Seybold Desktop Publishing Conference in Santa Clara California by such luminaries as Scott McNealy from Sun Microsystems, Steve Jobs from Next Inc, and John Warnock from Adobe Systems, reports Microbytes Daily. According to Jobs, Unix version wars are both irrelevant and inconsequential in comparison to those between MS-DOS and the Macintosh, or even MS-DOS and OS/2. "The fact that it's at least Unix gets you 95% of the way", said Jobs, who suggested that Unix lacked only a good graphical interface and hardware cheap enough to compete with low-cost PCs. Sun's McNealy said that Sun would be ready with a low-cost SPARC-based PC by next summer, and claimed that SPARC clones will soon begin to emerge from Taiwan. Jobs' Next machine is expected to be announced next week, and should add to the contenders for the user interface race. But, as Jobs pointed out, both Unix and Display Postscript, the basis for the Next Inc interface and Digital's DECWindows interface, require large amounts of memory to run, and machines properly equipped to run them could add an extra \$2000 to the cost in comparison to Macintosh and MS-DOS rivals. The sluggish performance of the graphics on the Next workstation have been rumoured to be the main cause for its long-delayed introduction. But, says Jobs, the alternative is "throwing away all of your present computers in 24 months".

IXI LTD SIGNS UP INTERFIRM, LOCUS AS FIRST CUSTOMERS

Steve Jobs has reportedly shown an interest in the user interface work developed by UK company IXI Ltd, run by Ray Anderson, previously of Torch Computers Ltd. As reported briefly (UX No 198), Interfirm Graphics Systems of Santa Clara, California, has become the first announced customer for the company's X.desktop graphical user interface. The agreement allows Interfirm to offer the product integrated into its own Intel 80386-based PC-workstation products running Unix V.3, or to licence it for use on other 386-based products. IXI's X.desktop co-exists with the normal Unix shell and menu-driven utilities, and provides a configurable interface using windows, icons and a mouse, running under X windows version 11. Both companies presented the product at last week's Open Software Foundation meeting in Boston. And an announcement that Locus Computing, Englewood, California, will be using the interface as a front-end to its software is expected within the next few weeks: Locus products include Merge 386 and the Xsight and PC Xsight windowing tools.

HM SYSTEMS BANKS ON 20MHZ 80286 MILLENIUM TO DOUBLE SALES

London, NW-based HM Systems Plc has launched a new high-end workstation, forecasting that it will eventually constitute around 75% of the company's turnover. The new 286 Minstrel Millennium workstation - manufactured at its London base and in High Wycombe, Buckinghamshire - has a 20MHz 80286 processor, runs all MS-DOS, OS/2, Unix and TurboDOS-based software plus Novell and 3Com networking software, runs at 20MHz, 16MHz or 12MHz, and is fully IBM PC-AT compatible; 1Mb RAM is standard with expansions up to 5Mb. Additional features include a 3.5" Winchester disk option, with capacities from 42Mb to 120Mb, and a 3.5" 1.44Mb floppy disk drive. HM also says the Millennium's disk cache controller can improve performance to make it suitable for disk intensive applications such as desktop publishing; the workstation is based on Chips & Technologies NEAT set, an implementation for Intel 80286 micros - which it claims means better consumption and reliability than most 386s, at a cost 10% to 15% below equivalents from Compaq, IBM, Apricot. Where do you get hold of a 20MHz 80286? Harris Corp announced one in CMOS in June. Founded in 1979, HM Systems launched the Z80 based Minstrel 1 two years later, and now has an international customer base of over 4,000 for the Minstrel 4, largely in the UK public sector. The company employs 16 at its London office and had a turnover of £2m last year, a figure it looks to the new Millennium to help to double this year; managing director Tony Harris, however, is firmly opposed to a public share issue, maintaining "investors' short term attitudes" would make such a move inappropriate.

MBS SUFFERS FROM PC DISCOUNTING - BUT UNIX BUSINESS UP 18%

MBS Plc is restructuring its operations in an effort to protect its position in the microcomputer market following the dropping of its personal computer distribution business in July this year. The news comes in the wake of disappointing mid-term figures for the Windsor, Berkshire-based company which saw pre-tax profit fall to £215,000, down from #1.4m last time. Measures include the closure of three major and six minor sites, including the company's head-office at Eton and the administration offices at Slough which will be relocated into existing premises in Warrington and Ascot, and the possible divestment of non-core activities. Overhead savings in excess of £5m are expected over the next 12 months, but there will also be 85 jobs lost and an expected extraordinary charge of between £5m and £6m in the second half. MBS says that the market has been flooded with IBM products shipped at large discounts, leading to erosion of margins at end-user level. This, says the company, contributed significantly to the fall in profits, particularly in the second quarter when trade conditions deteriorated more quickly than the board anticipated. On the plus side the company had some encouraging results in value added services. MBS Engineering saw turnover rise 29% in the first half of 1988; Education & Training almost doubled; MBS Communications grew by 59% and acquired Integrated Broadband Services Ltd last July; the Microtex business, remarketing Altos Computer Unix systems, enjoyed 18% growth; and the new DEC distribution business began trading in the last week of July.

DATA GENERAL TO TAKE \$45m CHARGE WITH FOURTH QUARTER FIGURES AS 800 MORE JOBS GO

Data General Corp is making another swingeing round of cuts that will cost it a \$45m charge against fiscal fourth quarter figures to last Saturday, and cost 800 of its 15,600 remaining employees their jobs. The cuts are intended to reduce its annual costs by about \$50m. Manufacture of the high-end minicomputer line is to move from "an older, less efficient building" in Portsmouth, New Hampshire to a newer, currently under-used plants in nearby Durham, and in Apex, North Carolina. And product repair will be shifted from Fountain, Colorado to appropriate manufacturing plants and to a core repair facility in Southboro, Massachusetts. Parts distribution will be moved from Colorado to the existing Southboro distribution center, and Fountain and Portsmouth will be sold. Despite the loss of manufacturing jobs, Data General says it continues to hire sales, systems engineering and development staff.

NEC MOVES TO IMPROVE US MULTI-USER BUSINESS

Over in the US, NEC Corp is rearranging the furniture at its NEC Information Systems in Boxboro, Massachusetts to try to improve performance of the business: it has split its computer systems sales organisation into two separate operations, one dedicated to multi-user business systems, the other to personal computers; the move reflects the fact that NEC's personal computers have been doing much better than its larger business systems, tending to be offered as adjuncts to the micros; the white hope for the business systems marketing operation will be the Astra XL Unix machine built around the Motorola 68020, introduced by the company this time last year, but it will also market the Astra 400 series built around a proprietary NEC microprocessor and operating system, which has collected a few vertical applications, and the 80386-based BusinessMate machine, which runs Unix.

PRECISION VISUALS PHIGS FOR VMS - SUN VERSION ON THE WAY

In response to the increasing use of workstations in the writing of scientific applications, Precision Visuals International Inc is releasing a graphics software package designed for VAX/VMS technical workstations. Although the new GFX-4000 is based on the Programmers Hierarchical Interactive Graphics System, the PHIGS standard for three-dimensional graphics, the Boulder, Colorado supplier of graphics software claims the new product offers extensions of around 20% to the basic standard. Extras include additional two and three dimensional primitives, quick update viewing methods, and raster operations to give full access to the workstation's bit-mapped graphics capabilities; the company estimates that 88% of scientific, technical and engineering applications are now written on workstations, and that the extra benefits of the new product will be able to exploit this trend - the GFX-4000 should eventually be able to run under DECwindows and on Sun Microsystems workstations.

Bob Ackerman has resigned as the head of X/Open's US arm: his replacement is to be Bill Bonin, the current software vendor manager.

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Sequoia Systems Inc is to ship 24 of its fault tolerant computers to the US Federal Aviation Administration in a recent contract awarded to Contel American Satellite Co: the systems will be the basis of the FAA national weather communications processor system, and was won in the face of competition from I/O Computer Services and Aydin Computer Systems, both bidding Stratus hardware.

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Across-the-board 3% to 5% price increases are expected soon from DEC by Jeff Goverman of Soundview Financial Group, who rates the move positive.

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Metaquest Ltd of London is to distribute an 80386-based implementation of X Windows version 11 from the GSS Corporation of Beaverton, Oregon.

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Data General billed the introduction of its symmetric four processor machine, rated at 50 MIPS and supporting over 1,000 terminals, as "the world's fastest supermini", but despite the company's recent enthusiasm for Unix the machine runs only DG's proprietary AOS/VS operating system.

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The Japanese end of Floating Point Systems Inc - or FPS Computing as it wants you to call it - has rushed to capitalise on its Beaverton, Oregon parent's acquisition of the assets of San Diego-based Celerity Computing Inc to launch Celerity's NCR 32 RISC-based high-end Unix machines onto the local market: the NCR 32 was designed as a custom microcodeable 32-bit slice, but Celerity skipped the microcode and used it as a RISC.

- 0 -

Misys Plc, the Worcester, UK-based insurance software specialist that snapped up BOS Group Plc in June after BOS abandoned plans for a flotation of its own, is on the prowl again: it says it is looking for further businesses in the computer services sector to extend the scope of the company and strengthen its existing businesses.

After long deliberation, US Judge Robert Aguilar has decided that the fact that his son works for Hewlett-Packard Co has no bearing on the suit brought by Apple Computer Inc against Hewlett and Microsoft Corp since Aguilar junior doesn't have any Hewlett shares or work on the computer side of the company, and he is therefore not prepared to disqualify himself from the case.

- 0 -

We haven't seen the report and don't know where it appeared, but if in case anyone did see it, AT&T Co has flatly denied a suggestion that it had decided to dump Sun Microsystems Inc's Sparc RISC in favour of the Motorola Inc 88000 rival: the company says it hopes to introduce Sparc-based machines next year, and that while it might consider using other RISC chips in the future, it had no plans to bring out a computer based on the 88000.

- 0 -

Tandem Computers Inc, once a sturdy go-it-aloner, has of late been doing collaborative deals with all sorts of other computer manufacturers - Altos for Unix boxes, MIPS for RISC technology, Anamartic for memory technology - and it has now followed DEC to Apple Computer Inc, signing a pact under which it will buy Macs, write software so they can be used as terminals with its fault-tolerant NonStops, and sell and support them for its customers.

- 0 -

Migent Inc, Incline Village, Nevada micro database company desperately short of cash, has sold its LightHouse desktop publishing technology developed with Nova Development Corp to Informix Software Inc, Menlo Park. LightHouse, aimed at the Apple Mac combines page make up and word processing in one environment.

- 0 -

Massachusetts Computer Corp now has over 99% of Concurrent Computer Corp's shares outstanding, and has completed the merger of the two companies to create what it believes is the largest company focusing on real-time computing solutions: MassComp has filed to change its name to Concurrent Computer Corp and the new firm's headquarters are in Tinton Falls, New Jersey.

Commenting on the company's end of year figures - pre-tax profits up 12% at £1.2m - David Blechner, chairman of UK accountancy systems specialists Star Computers, said the design of multi-user computer systems for the accountancy profession remained the company's main activity; Mr Blechner said Star had received orders totalling £2m for its new Unix-based accountancy package, Practise Management Systems, due for full release in November: on the other hand commercial business enjoyed only modest growth, the largest order being a £400,000 contract from a multi-branch business for a company wide network.

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Apple Computer Inc has a MacTCP implementation of the TCP/IP communications protocol for MacOS: it is \$2,500 for internal use, \$5,000 for developers from first quarter 1989.

- 0 -

Government computer systems integrator C3 Inc may be faced with a \$13 a share bid from Knoll Capital Corp - which is part of a group that already 9.6% of the shares. Knoll says it will bid if it is receives and is satisfied with non-public information it has requested from C3; it also says it may raise its bid if C3 proves it is worth more.

- 0 -

A Federal Interdepartment Committee on Foreign Takeovers in Washington has decided the proposed acquisition of Gould Inc by Nippon Mining Co doesn't require a formal review.

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Daisy Systems Corp reports that it has now begun shipment of its Advansys series of computer-aided engineering/design applications on its new Sun386i workstation line: orders so far are claimed to total more than \$4 million.

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Laticorp Inc's latest version of the Textbase free-form text retrieval system is now available on PCs, Unix machines and DEC VAX minicomputers running VMS or Ultrix: version 1.2 begins shipping in November, and in the UK is distributed by Sphinx Ltd, costing £1495 for a typical multi-user system.

- 0 -

Barson Computers of Sydney, Australia, has launched Apricot's Qi series of Micro Channel-based PCs into the Australian marketplace: Barson is also the Australian distributors of Acorn Computers.

- 0 -

And Fujitsu Australia has introduced its Series 2000 family of 68020 and 68030-based micros running Pick 5.0: Fujitsu's common network architecture (CNA) software allows up to 64 Series 2000s to be connected in a local area network, and allows integration with MS-DOS.

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Unix Expo in New York (October 31 - Nov 2nd) is the next likely venue for further revelations about moves to reconcile AT&T and the Open Software Foundation, with OSF Henry J Crouse booked for the keynote speech: other highlights of the conference include AT&T's Bjarne Stroustrup on object oriented programming and a session on window toolkits: attendees from the UK can contact Phil Flaxton on 04862 27661 for low-cost travel arrangements.

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AT&T PRESSES SYSTEM V KERNEL ON OPEN SOFTWARE FOUNDATION

Latest on the AT&T/Open Software Foundation schism is that offers from AT&T appear to have brought the two parties much closer to a rapprochement that would enable AT&T to become a sponsor of the Foundation should it choose to do so. We understand that AT&T has made a serious offer to relax restrictions on access to its technology, on condition that the Foundation agreed to adopt AT&T technology; the suggestion is that this centres on the use of the System V.3 kernel. Sources suggest that the two sides have already reached consensus on many aspects of Unix development. Current Foundation plans are for a future version of IBM's AIX to be the basis of the OSF operating system: this version is said to incorporate V.2 and V.3 features but to steer clear of AT&T extensions such as RFS that, coupled with AT&T's licensing policy - which could now open up - angered manufacturers back when V.3 was released. Digital, which required considerable effort to bring its BSD-based Ultrix to SVID compatibility, is said to be the main objector to any further shift towards AT&T technology. This may remain a considerable sticking point for any attempts by AT&T to get System V technology adopted by the Foundation, but, on the other hand, just about every serious RISC and complex instruction set microprocessor runs AT&T System V.3 Unix now, which has to make it easier to extend the operating system for those processors by using Foundation features built on an AT&T kernel than to try extracting all or part of a product built on an as-yet undelivered drastically rewritten AIX product. Other sponsors of the Foundation meanwhile, many of whom are critically dependent on Unix for key parts of their product line, may have felt a frisson of alarm at IBM's announcement that AIX for the PS/2 will be six months late. As for AT&T, since the departure of Vittorio Cassoni from AT&T Data Systems, the organisation under his successor Robert Kavner and the organisation seem to have completely changed their attitude and appear likely to consider almost anything that is needed to heal the schism in the Unix world. The formation of OSF was an indication that the rest of the industry is quite prepared to press on with Unix development independent of AT&T and that if AT&T refuses to come to heel, it may see itself becoming almost irrelevant to the future direction of Unix. The big question still outstanding, of course, is what happens to System V.4 if AT&T joins OSF. In a related matter, AT&T last week again flatly denied the industry gossip that it plans to use the Motorola 88000 RISC in its next generation machines, and notes that its original intention to add Sun Sparc-based products in 1989 is unchanged.

DATA GENERAL 88000 PRODUCTS DUE EARLY 89

Look for first products in Data General's new range of products based on the Motorola 88000 to emerge fairly early next year, probably in February or March, and to be delivered by the summer; no surprise that DG is likely to include both a line of multi-user systems and workstations - an area where the company has had products based on its proprietary MVs for years, but has made little impact. The new products will grow to form a complete Unix and standards based alternative to the MV line; DG's agreement with Motorola under which the two collaborate to produce a 100MIPS ECL version will bolster the top end later. Although the MV line (including the new MV/40000 in single processor configuration only) support the DG/UX version of Unix, the product has hardly been perceived as a big seller.

IBM's AIX PS/2 SIX MONTHS LATE
IBM, which was due to ship its AIX version of Unix for the PS/2 machines last month, now says that the product is not due till March 31, 1989 and that AIX/RT Version 2.2, for the 6150 is now not due until December. The reason given by IBM for the holdup on the PS/2 version is that it wants to incorporate additional functions to satisfy AIX customer requirements and to ensure a quality delivery of AIX products.

HAMLET WITHOUT PRINCE: STELLAR DOES

SERVER SANS GRAPHICS

Perhaps feeling that the market for graphics mini-supercomputers became overcrowded almost overnight last March, when it announced its own machine, the GS1000, within days of similar announcements from Ardent Computer and Apollo Computer, Stellar Computer Corp has decided to broaden the market potential of its basic machine by playing down the graphics and offering it in a compute server version as well. The CS1000 Computational Server is designed to bring Stellar's Synchronous Pipeline Multi-Processor architecture, implemented on 11 gate arrays and its 1.28 Gbyte-per-second DataPath dedicated highways down to the local area networked community of workstation users. Stellar sees the CS1000 being used in applications where visualisation, vectorisation and floating point performance is required, especially for distributed graphics over a local area network, where it reckons it offers the performance of a typical minisupercomputer at a quarter the price. It also sees the thing being used as a single-user supercomputer, where it could be seen as an economical alternative to buying time on a Cray or ETA machine while offering ease of programming and use. And as a multi-user system with terminals connected either by RS232 ports or a local net, it sees the machine competing directly with superminis and minisupers at "a fraction" of the cost per user. The box runs the Stellix implementation of Unix System V.3 with "numerous" Berkeley extensions, and supports X-Window System. It is rated at 25 MIPS and 8.5 MFLOPS by Stellar; prices start at \$95,000 for a 16Mb CPU with 1Mb cache and 380Mb disk; delivery is 90 days.

SONY TAKES NEWS INTO SCANDINAVIA

Sony surprised a few observers at last week's Uniforum Unix exhibition in Sweden with the launch of Sony Microsystem Scandinavia, announcing a range of products including the News Unix workstations, the Popnews user interface software and a new 600Mb erasable magnetic-optical disk. The company has set up in Oslo and initially is seeking and in negotiations with distributors. It plans a Scandinavian support office which will focus on bringing local and international software packages into the company's Synergy third party software programme. The company is looking for 12% of the engineering workstation market by the end of 1990, in line with Sony's overall strategic aim for 10-15% of the market by that date.

INTERMETRICS WOOS WHITESMITHS

Intermetrics Inc, Cambridge, Massachusetts is in negotiations to acquire privately-held C compiler specialist and originator of the Idris real-time Unix-like operating system, Whitesmiths Ltd, over in Westford. Intermetrics Inc is well known for its Ada compiler work and specialises in real-time systems engineering, software development and tools for real-time applications in government and commercial markets.

NOW NCR GOES FOR WOLLONGONG STREAMS TCP/IP

Those companies who invested early in developing basic networking software for AT&T's System V.3 Streams mechanism are at last reaping the benefits; after Sun's decision to sign for rights to use Lachman Associates' Streams TCP/IP product for forthcoming SunOS 4.0 and potentially System V.4 products, The Wollongong Group, whose WIN/Streams family is already endorsed by AT&T for System V.3, has picked up a contract with NCR Corp to provide TCP/IP networking software for the Tower range. The agreement covers Wollongong's Streams-based WIN/TCP on the range from the Tower 200 to the 800/850 and its value is estimated at "several million dollars".

JAPAN'S MITI PLANS SINGLE SIGMA INTERFACE, LANGUAGE

The next step in the Japanese Ministry of International Trade & Industry's Sigma project to create a comprehensive set of software development workstations and tools is to create a simplified programming language and user interface, the aim being that both users and programmers should be able to access information on any type of computer: called the Super Sigma Project, the new effort is being launched to address the forecast shortage of software engineers and programmers - analysts forecast that Japan will be 100,000 or more programmers short by the year 2000, so making existing ones much more productive is seen as critical; the new project will be in two stages - development of a simplified user interface and access method in the first phase, development of a new programming language equally suited to large, medium-sized, and desktop machines in the second phase of the project.

AMDAHL PICKS UNIPLEX FOR OFFICE AUTOMATION UNDER UNIX.....

Increasing the effort behind the UTS implementation of Unix for its IBMulators in the commercial market, Amdahl Europe yesterday announced a deal for exclusive rights to market Uniplex Ltd's Unix-based suite of office automation software and productivity tools to its mainframe customers with UTS software licences. In addition, the mainframe manufacturer gains non-exclusive rights to market the product range to other UTS users. The deal covers the Uniplex II Plus core product, Advanced Office System tool kit and Advanced Graphics System module. Prices start at £24,000. Short-term, the agreement is confined to countries within the European Community, plus Norway, Switzerland and Sweden; current talks are, however, being held between Amdahl Corp and the autonomous arm of Uniplex in the US, where the UK software company has developed a strong market presence. Amdahl claims 20 "serious" UTS software licences in Europe, but estimates that at least 50% of its 400-strong European customer base has been running Unix on smaller machines, and will welcome the chance to consolidate Unix-based operations within a main-frame environment - a trend backed up by the findings of an Amdahl Executive Institute research project, conducted last year. For its part, Hemel Hempstead-based Uniplex describes the benefits as the establishment of a relationship with a large mainframe manufacturer, and a widening of its customer base. In addition to its UK and US bases, the company, which claims it now stands at number 10 in the Unix software arena, has just opened a branch in Munich, and plans to open an office in Paris very shortly. Initial key targets identified by both parties are UTS licence holders in Germany, the UK and France, where Amdahl anticipates the sale of 10 Uniplex licences within 12 months: other prime markets are considered to be the Scandinavian countries.

....AS MICROVITEC LAUNCHES "UNIPLEX COMPATIBLE" GRAPHICS SCREEN
Microcolour Graphics, the DEC compatible terminals subsidiary of Bradford based display equipment manufacturer Microvitec Plc, has launched a Uniplex-compatible graphics terminal. Aimed at users of Uniplex's office automation software the Motorola 68000-based M4305MU terminal was developed with Uniplex technical support and has a list price of £1,420. It offers Tektronix 4105a software compatibility, and supports VT220 style soft keyboard enabling most of the keys to be redefined which allows users to download Uniplex command sequences.

STAR TECHNOLOGIES CLAIMS 100MFLOPS FOR VP-2 VECTOR

Star Technologies Inc of Sterling, Virginia claims its new Vector Processing Series of high-performance attached vector processors, at up to 100 MFLOPS, are the fastest 32-bit CMOS attached processors available. The VP-2 is a "dual compute head" version of the 50 MFLOPS VP-1 and they take up 21" of a 19" rack. The VP Series supports a 100Mbytes-per-second aggregate main memory bandwidth and the input-output subsystem supports up to three channels and operates at up to 50Mbps on the direct memory access channel so that the VPs can move and process data simultaneously. The VPs can be used with IBM 370-type hosts, DEC Unibus, Q-bus and VAXBI machines as well as those from Concurrent Computer, Gould Computer, Sun Microsystems and Alliant Computer Systems. VPs can be shared by up to three dissimilar hosts and a host can support several VPs. No prices; availability is 90 days.

NIXDORF TO STEP UP TARGON SOFTWARE EFFORT

Nixdorf Computer has been slowly building up its UK presence with the Targon range of Unix systems - the company has some 50+ systems installed, but emphasises that they tend to be sales of large systems at £100,000 plus a time - and looks set to step up its efforts further next year when Nixdorf-developed applications start to appear on the machines. So far, the company has focussed on third-party packages combined with Targons sold through the direct sales force (unlike the vast majority of companies in the Unix market, Nixdorf only sells direct), and the latest addition to the portfolio is the Delta/ADS application generator from Swiss company Delta Software AG; Nixdorf sees potential for the product, which originated in the IBM mainframe environment, with customers who both have IBM mainframes and are looking to put in Unix departmental systems. Delta can generate Cobol applications that run with Nixdorf's DDB4 relational database on Unix, or with DDB4 or even DL/I on mainframes.

Nixdorf's Targon Office, already announced in Germany, is due for UK launch early next year; the product originated with Quadatron's Q-Office (Nixdorf has a substantial stake in Quadatron) but has since had most of the modules apart from word processing replaced with Nixdorf-developed software. Meanwhile, Nixdorf's huge seven-year project to rewrite its Comet software for small to medium sized businesses, which currently runs on the company's 8870 machines, for Unix using DDB4 and the proprietary X/SDE 4GL has so far resulted in the first handful of the 250-odd modules running under Unix. However the full suite, which comprises a central core of general business software and modules targetted at specific vertical markets such as Nixdorf's traditional manufacturing and retail areas, is a couple of years at least from completion.

Nixdorf has already trumpeted its intentions to become a large scale software supplier and as a result products such as DDB4, Targon Office, and conceivably Comet - although any decision for the latter is probably some way away - will be made available for systems made by other manufacturers; DDB4 already runs on NCR, DEC and IBM and compatible mainframe systems.

INFORMIX: "FASTER OLTP OR YOUR MONEY BACK"

The viability of Unix-based relational database systems in transaction processing applications is seen as such a key issue that Informix Software Inc has announced a money-back guarantee that its Informix-Turbo database will perform "faster than any other database engine for new Unix-based OLTP applications". The company reckons the performance monitoring and tuning facilities of the product are instrumental in ensuring that it is not likely to have to make refunds; hard to imagine too many people developing versions of an application for more than one dbms at a time, even with the universal implementation of SQL, but Informix says this is a more "tangible way to help users make an OLTP decision" than simply making claims based on benchmarks. The offer is available only until March 31, 1989; customers must inform Informix within 30 days of purchase that they are developing an OLTP application and must complete the application by 31 December 1989. And customers had better make sure that they have managed to get every drop of performance out of the product before complaining; Informix reserves the right to have a technical consultant analyse and fine-tune Informix performance before issuing the money-back guarantee, and will charge consultancy fees if the product runs faster than another dbms as a result.

UK BREWER CLAIMS FIRST WITH UNIX-DRIVEN OPTICAL DATABASE

RealStream Ltd's Origin text/image retrieval system, developed by Centaur Systems and first flagged here in UX no 196, has now been formally launched and the Dorchester-based Unisys value-added reseller and distributor Realstream Ltd has and filled out our earlier description with more detail about the product; the system combines Philips/Control Data Write-Once optical disk technology with a Unisys U5000, 6000 or 7000 Unix processor, to offer a potential storage capacity of 256Gb and bolt-on compatibility with "all major computer systems". The database also breaks with traditional record formats - key words and fixed length fields - by dealing directly with documents. According to Realstream, data of any size, shape or form fed in on-line from the mainframe, or manually via image scanners, is automatically indexed by the system's proprietary relational database management system, entered into the on-line index, and written to optical disk. Data is retrieved by entering any word contained in the original document, or used to label an image, into the system. Realstream claims that, depending on the type of processor, and the number of disks used, retrieval speeds match those of standard database products, and offers a quarter of a second for a word stored 100 times within a document on a fully loaded 1Gb disk, as a benchmark. The company predicts that the system will find particular favour with financial and legal institutions, specifically banks, insurance companies and building societies, and has been invited to demonstrate the product to the Metropolitan Fraud squad. The product has been up and running for some three weeks at Realtime's parent company, West Country brewer Eldridge, Pope Plc, where it has been used for archiving correspondence and paperwork, and for conducting financial transactions from the mainframe. An Origin package, including image scanners and MS-DOS micros for networking, is "upwards of £100,000".

SPARC SIMULATOR SET FOR DECEMBER

Developers building systems round Sun Microsystems' SPARC processor will have access by the end of the year to a Sun-developed simulator for prototyping or testing designs before implementation. The SPARC Architectural Simulator is an instruction-level simulator that can be used by both hardware designers and systems programmers; available initially on Sun-3 and Sun-4 workstations, estimated performance is said to be 10,000 instructions per second on a Sun-4 with 24Mb memory. Source code is £20,700; the binary version is £4,200, and comes bundled with user-configurable source modules so hardware designers can develop MMU and cache models without buying the source version. The products are available December 15.

TRANSPARENT COMPUTING ENVIRONMENT, UNIX, TAKE CONTROL DATA INTO THE 1990s.

Control Data Corp is the latest proprietary mainframer to be bitten by the open systems bug: last month in Vienna the company demonstrated its multi-vendor networking products to customers and journalists, claiming that it was now half way through its Transparent Computing Environment programme. CDC can currently link up PCs, and Macintoshes to its Cyber mainframe systems running the NOS/VE operating system, as well as workstations from Sun Microsystems and Silicon Graphics, which it rebadges. Macintosh users can access the mainframes via the Mac user interface using the Desktop/VE product, and the company also has interfaces for PCs running its Officeware office automation system, and is working on an implementation of X Windows. CDC also plans to incorporate OSI compliant protocols within its CDCNet networking product by the first quarter of 1989, and says it will standardise around a "cohesive software architecture" consisting of standard language implementations (Fortran, Cobol, Pascal, C and Ada) and operating systems services based around Unix on all its hardware platforms. Unix currently runs native on the Cyber workstations and ETA supercomputers, and is promised for the mainframe line by the end of 1989.

Formed in 1957 in Minneapolis, Control Data Corporation (CDC) was a spin-off company from computing pioneers Sperry Univac, and quickly became a major player in the high-speed scientific computer market, responsible for a number of technological innovations, including vector processing in the 1960s, and the use of input/output peripheral processors and an early form of RISC (reduced instruction set computing) technology in its innovative 6000 series computers in the 1970s. Since its heyday in the 1970s and early 1980s, however, CDC has hit more difficult times, like many of the other members of the so-called Bunch (Burroughs, Univac, NCR, CDC and Honeywell) group of companies competing with IBM in the mainframe world. In 1984, CDC was number 4 in the Datamation ranking of IT companies with IT revenues of \$3.5 billion: today its place has slipped to number 8 (number 15 worldwide), and IT revenues have shrunk to \$3 billion. But after losses in 1985 and 1986, the company returned to profitability in 1987 with net earnings of \$19.3 million.

Partnerships

Over the last few years the company has both rationalised its existing business, and struck up new partnerships in an attempt to return to profitability. Its rescue of the UK's ailing Systime in 1985 did little to help its return to profitability, despite that company's more encouraging results recently. More favourable has been CDC's OEM relationship for workstations with Silicon Graphics, of which it now holds a 20% stake. In April 1988, it expanded its interest in financial trading systems specialist Micrognosis Inc to a 97% holding. And in July, CDC announced plans to spin off its Data Storage Products OEM disk drive division, responsible for a third of the company's revenue, into a separate subsidiary operation: this was duly carried out in September, when the division, recently returned to profits after severe rationalisation which cut staff by more than half, was launched as Imprimis Technology Inc.

CDC's efforts to reestablish itself has become particularly evident over the last eighteen months, during which the company has put in place a broad range of new products, making it one of the very few companies able to offer products in all sectors of the computer market, from workstations through mainframes to supercomputers. The move has involved a shift of focus for CDC away from its traditional engineering and scientific focus towards the wider horizons of financial and business.

Because of the range of products it offers, the company has been forced to consider the necessity of integration between product lines, encouraging a move towards standards and Unix, and the putting together of communications products that will connect its own - and others - hardware together in a meaningful fashion.

Visions of the future

Thomas Miller, vice president of Central European operations, recently outlined to customers and journalists CDC's new "vision of the future" - the Transparent Computing Environment; a strategy and not an available product - that has tempted the company from its long-established proprietary ways. Starting with its workstation range, CDC has re-vamped its whole range. Silicon Graphics, which manufactures the high powered RISC-based Iris family of workstations using chip technology from MIPS Computer Systems, is described by CDC as a "strategic partner", a relationship which was strengthened recently by CDC's acquisition of a 20% stake in the workstation manufacturer. The Iris workstations are re-badged by CDC as the Cyber range. "We can already see that MegaFlops on the desktop by the 1990s are a real possibility", said Miller.

The company has announced the new low end MIPS Computer RISC-based workstations from Silicon Graphics Corp as new models in its Cyber 910 family, with prices ranging from \$20,000 for the basic 910-437 with 182Mb disk to \$30,000 for the 910-447 with floating point coprocessor, 24 colour bit planes, eight planes for windows and 24-bit Z-buffer and the 182Mb disk and \$35,000 for the the 910-448, which has the same configuration but with 380Mb disk.

On the supercomputer side, Control Data subsidiary ETA Systems unveiled its ETA10-P and Q range a year ago, claimed to be the only air-cooled system in the Department of Energy's Class 6 (small supercomputer) classification. Today the systems span a 27:1 operating range, beginning at the ETA10-P and finishing at the \$9 million, 10.3 GigaFlop ETA10-G8, well up in Class 7 with machines from Cray Research and NEC.

It is probably too early as yet to say that CDC is fully past the troubled financial times of the past few years. But if it does re-emerge again as a significant player, it will be as a lean and hungry player with an integrated product line far more suitable to compete with the major competition from DEC, IBM and Unisys.

OLIVETTI, SETTING UP UK LSX INDIRECT CHANNEL, PREPARES INTEGRATION SOFTWARE

Early 1989 should see Olivetti stepping up its software efforts for the new LSX line of minis with the launch of products with a greater Olivetti-developed content such as shells for integrating off-the shelf packages with Olivetti software differentiate and add value to the line. The company, which reckons there are already some 100 third party products for the LSX range, is also in the process of setting up a separate indirect sales arm for the systems which is likely to focus on collaborations with software and systems houses selling into a limited number of vertical markets; it has already worked with software houses specialising in the manufacturing market to produce enhanced versions of packages for the LSX line. To date, Olivetti has sold the LSX line direct only and not surprisingly has not pushed the LSX products through the resellers currently offering AT&T's 3B line; eventually, however, some resellers are likely to end up selling both product ranges. Latest third party software agreement is the inevitable addition of Uniplex Ltd's *de facto* standard business software; office software is an example of an area where Olivetti plans to surround third party products with an Olivetti-developed framework.

HEWLETT-PACKARD MIXES OBJECTS AND RELATIONS

Hewlett-Packard has been nursing an odd combo in its Palo Alto, CA, research dens that may prove just the ticket for graphics intensive database chores like CAD, CASE, and corporate publishing, reports Microbytes. Known as Iris, HP's prototype database mixes object-oriented programming methods and Structured Query Language with relational algebra to produce a distributed database system. This technology, which HP revealed at an object-oriented-programming conference in San Diego, CA, last week, could enable database management systems not just to store information, but to spot flaws and inconsistencies in the information as well. Key to the real world potential of Iris is its SQL module.

SILICON GRAPHICS SIGNS \$5M DEAL TO DEVELOP 100MBIT VLSI PROTOCOL ENGINE

Wrapping up some of the details of the Protocol Engines project to develop very high speed networking protocols and implement them in silicon, Silicon Graphics Computer Systems Inc. and SGI spinoff Protocol Engines Inc. (PEI) of Santa Barbara, Calif. announced last week the signing of a \$5+ million joint development contract to implement the Xpress Transfer Protocol in VLSI. XTP is a non-proprietary, Transfer Layer Protocol being developed by a consortium of computer and communications systems manufacturers led by PEI to support real-time distributed and transaction processing over Fiber Distributed Data Interface, Metropolitan Area Networks and other high speed media. Under the terms of the development agreement SGI and PEI jointly own all rights to a VLSI implementation (Protocol Engine) of XTP to be marketed by PEI. The initial Protocol Engine implementation will support full bandwidth FDDI (100 Mbps throughput) between applications. Higher performance implementations centered at 1 Gbps for gateway and server applications are planned.

NCR SEES DETERIORATION IN OUTLOOK FOR 1989

NCR Corp has been looking to the future and does not like what it sees too much: the company believes that 1989 sales growth may only be in single figures, it told Reuters. Growth of below 10% would compare with a 12% increase in sales for the first half of 1988 to \$2,480m, and will not go down too well with analysts who have been working on the assumption that NCR would grow 11% to 12% next year. The slow sales growth expectations for 1989 reflect the fact that order momentum for the company is not as strong as it was a year ago, it says.

SIEMENS TO SCALE BACK HEADQUARTERS

If IBM's doing it, it must be OK: Siemens AG has announced a sweeping corporate restructuring programme to clear away some of the layers of dead wood from top management and decentralise control closer to the sharp end. The aim of the programme, which will take at least another year to complete, is to transfer responsibility from the company's five central corporate divisions to the firm's operating groups, thereby reducing the size of the central divisions. The number of operating groups will be increased to as many as 15 or 16 from the present seven, and, following IBM's lead, more than 1,000 employees in the corporate divisions will be transferred to existing or new operating groups - but there is a commitment to make no lay-offs. The scope of the three corporate divisions at the Munich headquarters - business administration, research and technology, and personnel - will be significantly scaled back, with sales and marketing going altogether and being absorbed elsewhere. But a new corporate division, productions and logistics, is being created. The changes are expected to affect a total of 9,000 headquarters employees.

ANALYSTS START TO WORRY ABOUT OUTLOOK FOR INTEL

The worries about the US semiconductor market boiling over that surfaced late last month hardened at the end of last week, and Intel Corp shares shed 50 cents to \$25, its lowest for eight months, in active trading as several analysts cut their forecasts for the company. The current quarter was no problem - net up 77%, sales up over 50%: but weakness in third quarter orders from personal computer manufacturers cause analysts to worry that first quarter 1989 profits will be weaker than expected. Advanced Micro Devices has already said that it will report horrible figures for the quarter just ended, and it is particularly exposed by the fact that personal computer manufacturers are accelerating the switch to the 80386 from the 80286 - and AMD only manufactures the latter. But the switch is not all good news for Intel itself, only source for the 80386, because AMD makes the only fast 80286s, and as the market moves up the performance scale, those, and the fast CMOS versions made by Harris Corp, will tend to be the only 80286s anybody wants. And in contrast to the bullish forecast of the Semiconductor Industry Association of 12.3% growth in semiconductor orders next year, research house Integrated Circuits Engineering in Scottsdale, Arizona is forecasting only 3% growth in orders next year.

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Unicom Seminars' Open Systems for Europe: Towards 1992 seminar in December, presented in collaboration with Unigram.X, includes a focus on user procurement strategies and case studies alongside discussions of the industry adoption of standards. The star-studded cast includes Olivetti's Vittorio Cassoni, ICL Managing Director Peter Bonfield and EEC Director of Informatics Walter de Backer. Warren Greaves of the Department of Trade and Industry describes UK Government programmes to develop open systems; user issues are presented by speakers including Roy Barnes, Director of LAMSAC; Larry Caffrey, CCTA; and other user organisations including the National Health Service and the Abbey National building society. Peter Morgan, IBM UK Director of Corporate Services, Bull Directeur de la prospective Emanuel de Robien, The Instruction Set Managing Director Peter Griffiths and Unisoft Managing Director Jeremy Thomas are some of the industry speakers. The three-day seminar, led by British Olivetti's Basil Cousins, runs from December 6-8 at the Mount Royal Hotel, Marble Arch, London; full details from Unicom on 0895 56484.

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The Walnut Creek, California-based Kinetics division of Excelan Inc has reached agreement with Intel Corp over use of the Fastpath name: Kinetics will continue to use its FastPath trademark in connection with networking products that link Apple Computer Inc's Mac family of computers to Ethernet and Intel will use the name Intel's Fastpath for its channel-attached control unit for IBM 370 mainframes - subject to conditions that make clear distinctions between each of the two companies' product lines.

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Four more substantial applications have found their way onto Sun Microsystems workstations: they are SAS System from SAS Institute; Santa Cruz Operation's SCO Professional and SCO FoxBASE+, the Capture travel and entertainment management system from American Airlines; and WordPerfect Corp's WordPerfect 4.2.

Faced with the \$8 a share tender offer from Daisy Systems Corp to gain control of the company, Cadnetix Corp reveals that it has already rebuffed two approaches for a friendly deal from Daisy, and its board will meet soon to consider the hostile offer, and to review other options open to it.

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Arix Corp, the former Arete Systems, has completed its initial public offering with the sale of 2.4m shares at \$7.50 a share through Bear Stearns & Co.

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Arix also has a £2m, two year OEM deal with the Salam Group to supply Arix' multiprocessor Unix systems in the Gulf Countries; Salam specialises in systems using data, voice and image and offers a suite of office automation software adapted for Arabic language markets; the company will rebadge the systems under its Omnix label and also push the Arix systems through a VAR network covering Qatar, UAE, Oman, Saudi Arabia, Kuwait and Bahrain.

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Stellar Computer Corp has opened a wholly-owned subsidiary in Japan to sell, service and support its family of GS1000 graphics supercomputers and CS1000 compute servers: the new Stellar Computer KK will complement the firm's marketing agreements with industrial distributor Asahi Chemical Industry Co Ltd, trading firm Mitsui & Co Ltd, and OEM manufacturer Argo Graphics Inc.

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Oracle Corp has signed a joint marketing agreement with Sequent Computer Systems Inc, Beaverton, Oregon for its new Oracle Financials General Ledger, Payables, Purchasing and Assets accounting packages on Sequent's Unix processors.

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Tektronix UK Ltd has announced two additions to its range of graphics products: the 4319 colour graphics workstation, aimed at graphics intensive applications: and the 4211 "netstation" - replacing the 4111 graphics terminal - that features on-board Ethernet adaptor and is claimed to offer workstation performance at the price of a terminal.

Apollo Computer Inc has put its manufacturing chief, William Cunningham in charge of research and development in a move intended to enable Apollo to "regain momentum and ensure long-term growth"; John Newton, treasurer, also resigned his post at the Chelmsford company.

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Unisys Corp says it has sold 1000 of its new 6000/50 Convergent Technologies-sourced 80386 Unix/DOS machines in the seven months since the launch of the product; easily the biggest European order is from the Deutsche Bundespost, which is taking some 500 of the machines this year.

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Also Unisys will be announcing a high performance multi-tasking, multi-user 80386-based workstation and software enhancements in its BTOS family of computers at the Info 88 Information Management Exposition and Conference in New York City this week.

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Ballston, New York based The Software Group has Enable/OA, extending its high-end integrated software application with multitasking capabilities under the MS-DOS, OS/2, Xenix and Intel-based Unix operating systems. The multitasking was originally developed in 1986 for a federal bid; the company has also added some 150 new features including the ability to read WordPerfect and Samna file formats. Enable/OA ships next month through distributors and resellers including Micro D and Softsel. The \$595 PC package will be followed "shortly" by a Xenix version; a three-dimensional spreadsheet will be available late in the fourth quarter.

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Inmos International Plc is previewing a 25MHz T800-G25S version of its flagship Transputer part, for volume production next year. The T800 combines 32-bit integer processor with 64-bit floating point processor and 4Kb of fast static RAM on the 1.5 micron CMOS chip. Inmos rates the 25MHz T800 at 2.9 MFLOPS and plans 30MHz next year.

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BIIN'S FIRST MACHINES USE 80960 QUASI RISC SOFTWARE FROM IXI AND RELATIONAL TECHNOLOGY

BiiN Inc, the Intel Corp-Siemens AG joint venture company, yesterday announced its first products, the BiiN 60 and BiiN 20, and sprung a big surprise by reluctantly revealing that the underlying processor is not a modified 80386 or an iAPX-432 but the 80960 introduced by Intel in April (UX No 176). Intel says that the 32-bit 80960 applies RISC techniques to create a high performance architecture that can be easily modified for specific applications; conceived primarily for embedded applications where 32-bit performance is needed, the 80960 is said to include elements of the ill-fated iAPX-432. The company sees the US government as its likely first customer, and so has formatted BiiN Federal Systems. The BiiN 60 can be configured with two to eight processors, and performance is claimed to exceed 40 MIPS. It features dynamically-selectable fault tolerance and is designed to support more than 1,000 terminals in transaction processing environments; it is available immediately. BiiN 20 is a desk-side or desk-top box with one or two processors, performance up to 9 MIPS, for shipment in March 1989. A key feature of the architecture is that many functions typically found in system software are done in hardware for increased reliability, availability and scalability. Database functions - transaction integrity and distribution - are built into the BiiN/OS operating system, and the hardware architecture harks back to the iAPX-432 by combining an advanced form of user access control with a hardware-enforced mechanism to check security on every access a running program makes to data or to system services. And, in another hark back to the iAPX-432, BiiN/OS and its utilities are written in about 2m lines of Ada language code code, and operating system services are directly accessible in the form of Ada packages. For Unix buffs, the BiiN Open System Interface Extension, BOSIX, will provide a Posix-compliant interface and 250 Unix utilities. The BiiN iiCONS Window Manager - which turns out to have been supplied by IXI Ltd of Cambridge, UK, implements the X Window System. BiiN has also signed with Relational Technology Inc to offer its complete Ingres product line as BiiN's flagship database management system. No prices were provided.

IBM TAKES ENTIRE NEXT INC USER INTERFACE, TOOLS, FOR AIX

IBM finally confirmed its interest, first reported here in April, in the graphical user interface and object-oriented programming tools developed by NeXT Inc for the NeXT Computer System, and says that it plans to offer them as the graphical user interface to its AIX implementations of Unix. IBM has had to sign software licensing agreements - already reported - with NeXT Inc, Adobe Systems Inc and Stepstone Inc to get all the elements. The company says it intends to use the software to provide a colour graphical user interface - NeXT is promising colour next year - and application development toolkit for workstations running AIX. This could pose problems to NeXT if the user interface proves the most popular feature of the machine in the educational market at which it is aimed, because in February, IBM finally announced its own long-promised scholar's workstation, the 6152, based on the RT but including an 80286 and the functional equivalent of a PS/2 Model 60 as well (UX No 166) and seems certain to offer the interface and tool-kit on the 6152. However Jobs is not likely to be too concerned, because the IBM offering costs about the same as his own - base price \$6,395, and offers rather less. IBM's agreement covers the entire NextStep system developed by NeXT - Window Server; Application Kit; Interface Builder; and Workspace Manager - including the Display Postscript system, from Adobe Systems Inc; and Stepstone's Objective-C, and IBM will be supporting the same application programming interfaces as NextStep. Applications with the same Programming Interface will be compatible and also able to look the same on the screen. Full details of the NeXT Computer System are in page four.

AUSTEC IN TROUBLE OVER RM ACQUISITION

Australian Cobol specialist Austec International Ltd is having financial difficulties following its acquisition last year of rival US company Ryan McFarland (UX No 136). The company's bank has taken control of its assets and shares have been suspended from trading following Austec's inability to repay a \$A17 million debt, according to Computerworld Australia. But according to Pamela Crowley, Director of Marketing Communications at Austec's wholly owned US subsidiary in San Jose, California, there are no plans to take the company into receivership. "It's business as usual. We are continuing to sell, and expect to see a profitable balance sheet at the end of the year". Crowley said that process of buying Ryan McFarland "had not gone as smoothly as expected. It was both more difficult and more expensive than we anticipated, and we are still feeling the aftermath". The company is currently going through "a minor management reorganisation", which should be complete by the end of the month. Austec's main product is its Austec Conformable Environment, which allows conforming Cobol packages to be run across multiple hardware platforms and operating systems: it also recently released a version of its RM/COBOL-85 development environment for Intel 80386-based computers running Unix V.3. Its large user base - estimated at half a million sites worldwide - could make it an attractive proposition for a third party: fellow Australian software house BBJ was recently acquired by Computer Power Group after its own financial problems.

NOW SEIKO PICKS SUN SPARC

The Seiko Instruments arm of Hattori Seiko Co is the latest to sign for Sun Microsystems' Sparc RISC and will use it in all its future high-end graphics workstations and servers - and also signed a three-year, \$50m contract with Sun for Sun-3, Sun-4 and Sun386i stations. Seiko has been integrating its peripherals with DEC and Hewlett CPUs; it says it plans to launch Sparc-based Unix computer-aided design stations at the end of next year.

INTEL SCIENTIFIC EXTENDS IPSC2 WITH DEDICATED I/O AND CONCURRENT FILE SYSTEM

A major extension to the architecture of the IPSC2 concurrent supercomputer range from Intel Scientific Computers, based in the so called, "parallel valley" in Beaverton, Oregon, looks set to take the systems into a wider range of applications, according to company founder and director of technology Justin Rattner. Supercomputers, says Rattner, can be defined as "a method of changing compute bound problems into input/output bound problems". So the company has boosted the I/O performance of the IPSC2 with a new concurrent I/O subsystem, using dedicated 80386 processing nodes to control 700 Mb disk drives via SCSI buses, and at the same time introduced a concurrent file system - CFS - that claims to automatically distribute files and data across multiple disks, allowing users to view the system as if it were a single-disk file system. A typical configuration would add eight dedicated I/O processors and 16 disks, giving 10.8 Gb storage, to an existing IPSC2 system for \$300,000, but larger or smaller configurations are also available. As the individual 80386-based nodes (from 16 to 128 80386-based processors) are connected in a hypercube arrangement through a high speed communications network, Rattner says that the location of the dedicated I/O nodes does not matter - the IPSC2 uses "direct connect" technology to allow routing between any processor without affecting intermediate processors, eliminating the overheads associated with the store and forward architecture of the older IPSC1. As well as disk storage, the I/O system supports connections to devices using Multibus II and VME compatible interfaces - such as network controllers, graphics systems and analogue to digital converters - and each node can support up to seven devices. CFS aims to simplify the management of multiple disks by automatically distributing blocks of files across available disk space, whilst presenting a standard Unix input/output interface to the programmer. So far, IPSC2 systems have been sold mostly to the university and defence markets for computational mechanics and simulation applications, with 130 systems now out in the field. The boosted I/O capabilities should make the machine more attractive to companies relying on external information to feed applications, such as oil companies working on seismic analysis, and also commercial applications like financial modelling, transaction processing, database systems and electronic computer-aided design. Rattner said that an extension to CFS to allow support for the widely used Network File System from Sun Microsystems would be released later next year, allowing the system to be used as a multi-disk server, and that fault-tolerant facilities were also being developed, allowing systems supporting over 100 disks by early 1990.

DEC REVAMPS LOW-END MICROVAXs

Having brought in a high end for its MicroVAX line with the MicroVAX 3000s at the beginning of the year, DEC was scheduled this week to turn its attention to the entry level, and is set with a low-cost, high performance replacement for the MicroVAX II, as well as a Personal VAX 3000 to compete at the top-end of the personal computer market.

REAL WORLD, UK, BUILDS GRAPHICS SUPERCOMPUTER OF 88100s

The first finished product based on the Motorola Inc 88000 RISC microprocessor to come to our notice - Tadpole Technology of course already offers boards - is unveiled this week by 30-month-old Real World Graphics Ltd of Hertford, and a thoroughly innovative machine it sounds. The Supereality is described as a modular graphics supercomputer stuffed with 88100s - the 88100 is the arithmetic logic unit plus floating point processor in the 88000 set - that typically uses 50 of the things in a parallel architecture that "ingeniously conceals its parallelism from the application program". The machine runs a proprietary Unix-based operating system and can be programmed in C and other high level languages, and the company claims display speeds of over 100,000 polygons per second, and an "unprecedented potential" for programmable shading. The resolution is programmable and ranges from PAL and NTSC television raster at the low end to 1,536 by 1,024 pixel resolution at the high end. The elements of the system are the database board, containing "world" model, transformed model and global memory; geometry processor channels for manipulating objects in three dimensions by performing clipping, projecting and lighting calculations; render channels for hidden surface removal and shading calculations; and a frame buffer and video output card that can be configured for whatever resolution is required. All the processing elements are implemented using the Motorola RISC, and the boards are connected by five high-speed buses. Up to 50 geometry and render channels are supported, and the database transfer bus runs at 80Mbytes-per-second for a throughput of 500,000 polygons a second. The workspace is 1Mb or 4Mb and a 64Kb RAM cache for data and instruction is accessed in a single cycle. The backplane is to the Futurebus standard. Real World will offer the Supereality on the OEM market to integrators of flight and maritime simulation, molecular modelling, medical imaging systems, and to the film and television photorealistic graphics markets. Prices range from £20,000 for a 50-processor system to £150,000 at the top end and there are enough 88000s around for deliveries to begin this January.

ICL, OLIVETTI IN ESPRIT II PROJECT USING ACORN RISC

Cambridge, UK-based Acorn Computers Plc's low-cost Acorn Risc Machine microprocessor is at the heart of a European Commission-funded Esprit II project to develop a cheapo multi-function workstation conceptually similar to ICL Ltd's One Per Desk. Called Multiworks, the project is led by Acorn's 80% shareholder Ing C Olivetti SpA, and as well as ICL, participants include Bull SA, AEG AG, Philips NV and SGS-Thomson Microelectronics SA, implying that the last may become an alternate source to VLSI Technology Inc in the US and Sanyo Co in Japan. The project is to design a cheapo workstation to include screen, processor, a telephone, a modem, a facsimile facility machine and other telecommunications peripherals. Despite the fact that the effort is being funded by the European taxpayers, Acorn refused to say anything about it.

OUTSIDER DIGITAL RESEARCH PROMISES STRONG SHOWING FOR X/GEM IN UNIX CLUB PLAY-OFFS

An eyebrow or two has been raised at the news that Digital Research Inc, the perennial nearly company in Monterey, California that should have ruled the microcomputer operating system world after its 8-bit dominance with CP/M but lost out when Microsoft Corp snapped up the Q-DOS blatant copy of CP/M and IBM in turn decided to make that the basis of PC-DOS, is confidently putting forward a development of its Gem Graphics Environment Manager as the basis of the Open Software Foundation's graphical interface to Unix. Digital Research's problems are underlined by the fact that although it received substantial injections of cash from both Motorola Inc and Northern Telecom Ltd some three years ago, it had to go back to its venture capital backers last backers, including the British Abingworth Plc, last year for yet more cash - and Abingworth still does not feel able to value its holding in the company at the aggregate of the cash it has injected over the years, and is currently showing a modest loss on the investment. But a closer look at the Digital Research offering, called X/Gem, shows that the dark horse contender has a chance of springing a substantial surprise. X/Gem derives both from Gem and from the company's new FlexOS real-time multitasking operating system for 80286 and 80386 machines, which is initially being pitched at industrial markets. X/Gem is a series of toolkits for developing graphical interfaces and the company claims that applications development under X/Gem is both easier and quicker than it is under the leading rival products, Microsoft Windows - basis of Hewlett-Packard Co's NewWave contender, or Presentation Manager from Microsoft's OS/2. Microbytes Daily quotes Digital Research staffer Dan Erickson claiming that tasks that need 200 lines of C code to accomplish in Microsoft Windows 2.03 require just a single function call in X/Gem. There are no portability problems because X/Gem includes device-independent resource and function libraries, and while it currently operates with the Monterey firm's own windowing system, it can be adapted to the X Window system which is sweeping all before it in the Unix world.

SUN TAGS HIKED UP TO 15%

Sun Microsystems Inc, the Mountain View company that has spent much of its short life spoiling everybody else's fun in the workstation market by setting rock-bottom prices and then cutting them, has had its strategy thrown right out of kilter by the memory chip shortage, and last week introduced a second round of severe price increases. The company raised system prices on its newer products by an average of 6%, and on its older models by 10% to 15%. It also loaded another \$100 on the price of add-on memory, on top of the 50% increase it imposed back in May. The new memory hike is between 11% and 12%.

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MODCOMP TAPS VLSI TECHNOLOGY FOR KEY CHIP IN TRI-D MINIS

Further details have now emerged on the forthcoming Tri-Dimensional - or Tri-D - family of minicomputers to be announced by AEG AG's Modular Computer Corp, ModComp, at the end of the month (UX No 195) - and instead of bandying MIPS with the old hands at that game, ModComp will be stressing the real-time performance of the new family, measured by the rate at which it handles interrupts and the input-output throughput, as well as the raw processing power. Succeeding the Classic 32 line, the Tri-D machines will run ModComp's existing MAX IV and MAX 32, and its Realix real-time Unix operating systems. The three new models are the Tri-D 9230, 9235 and 9250, the two smaller ones being rated at 2.5 MIPS on the single precision Whetstone benchmark, the 9250 being rated at 5.1 MIPS. Interrupt handling is rated at over 100,000 interrupts a second. Input-output throughput is rated at up to 8.8Mbytes-per-second with two input-output sequencer, IOS, I boards, 12Mbps with two IOS II boards; the 9230 has the IOS I boards, the 9235 the IOS II. ModComp has gone to VLSI Technology Inc for the core of its new processor, the 98010 instruction set processor, and the machine crams that, a standard cell, two arrays, a map cache controller and a data cache controller, onto a single board for the 9230 and 35. The 9250 adds a third array and a second data cache controller for a total of 64Kb cache memory. There is an optional IEEE 754 floating point accelerator supported by the MAX 32 and Realix real-time operating systems which is claimed to increase performance to 5.1 MIPS on the 9250 and to 2.5 MIPS on the smaller two models. MAX IV J.0 is supported on the new machines, but only MAX 32 and Realix support SCSI disks. The Maxnet 32 Distributed System for networking is available as an extension to MAX 32, enabling all models of the new line, plus Classic and Classic II systems to be networked together. No indication of prices yet.

SIEMENS WILL BUY CHIP FIRMS - ADVANCED MICRO A TARGET?

While Siemens AG has been slow to follow its partner Philips NV's example and buying competitors in the US - Philips owns Signetics - don't look for that to continue. Speaking in Munich this week, Jurgen Knorr, head of the Siemens components division confirmed that the Munchener envisaged acquisition of competing chip manufacturers in order to strengthen its position on the US and Japanese markets. Since there's not much point in it thinking small, and given that it's best friends with Intel Corp, currently at loggerheads with its Sunnyvale second source, Advanced Micro Devices Inc, where Siemens already has a 10.5% shareholding, a move to buy the Sunnyvale firm and attempt to smooth out its bitter differences with Intel looks like a good move. AMD shares moved up against the market on hopes of a Siemens bid.

HARRIS CORP WINS ROYAL NAVY'S CLASP CONTRACT

The contract for the \$1.5 million information management system required by the UK's Royal Navy for its Comprehensive Logistics Automated Support Program (CLASP) has been won by Harris Corp of Fort Lauderdale, Florida. Harris will link an HCX-9 system at Bath with an HCX-5 in Washington DC to give UK personnel access to US data sources. The Oracle database was also specified.

COLLEGE KIDS RULE AT NeXT LAUNCH

OTHERS MUST WAIT, PAY MORE FOR ULTIMATE EXECUTIVE TOY

The NeXT Computer System, unveiled, fanfared and launched with all the razzmatazz at Steve Jobs' command on Wednesday, may be the most expensive and desirable executive toy ever invented, but status-conscious executives who want to impress their visitors are just going to have to wait - unless they have indulgent kids at college. Despite expectations that NeXT Inc, Palo Alto, would have to offer its magic toy on the commercial workstation market to keep its highly automated plant in Fremont, California busy, the company insists that the only market into which it plans to sell the machine is the college market - starting early next year. And the college kids who can afford the \$6,500 price tag should be delighted: the features included in the machine are the ones turned up most often by an exhaustive round of polling the Class of 86 to find what it really wanted in a computer. And when impatient executives are finally able to get their hands on the thing, they will find that it costs rather more than the prices quoted here: these apply strictly to educational establishments only.

The operating system is of course Mach, the slimmed-down Unix from Carnegie Mellon University that used Berkeley BSD 4.3 as its starting point, and one of the most attractive features of the machine is the amount of software that comes bundled with it. In addition to Mach, there is the NextStep shell, comprising the Window Server, Workspace Manager, Application Kit and Interface Builder. The object-oriented environment was developed with Objective-C from the Stepstone Corp.

Interface

The Window Server provides a window-based, graphical and intuitive interface to Unix. The Interface Builder works graphically to enable the developer construct an application by choosing from a palette of available objects and using the mouse and keyboard to modify the objects as needed, define the layout and establish connections between objects: now that's what object-oriented programming should be about. Adobe Systems' Display PostScript ensures true WYSIWYG between screen and printer, and is claimed to simplify the programming of graphical applications that support high-quality printing. And there are also a SoundKit, a MusicKit, array processing routines, assemblers, compilers, debuggers and a terminal emulator. A Digital Library on optical disk includes Webster's Ninth New Collegiate Dictionary, with definitions, pronunciations and illustrations; Webster's Collegiate Thesaurus; the Oxford Dictionary of Quotations; the Oxford University Press edition of William Shakespeare; The Complete Works; NeXT technical references and "other pertinent technical references". Bundled applications include the WriteNow word processing program; the Mathematica symbolic mathematics program for equation-solving; the NeXT SQL Database Server from Sybase Inc; Allegro CL Common Lisp; Jot, a personal text database manager; and graphical electronic mail with integrated voice mail capability. NeXT will ship systems to its key customers and developers starting this quarter, and expects to ship systems with final software by the second quarter of 1989 to a broader base of institutions and developers. Apart from the expanded memory, options include 660Mb and 330Mb Winchester from Maxtor Corp, an Ethernet kit, blank \$50 optical disks and printer toner cartridges.

Key chips

One of the most striking internal features of the NeXT Computer System is that the entire processing power of the machine is housed on a single circuit board inside the one foot black cube body of the machine. On that circuit board is a 25MHz Motorola 68030, a 25MHz Motorola 68882 floating-point unit, and a 10 MIPS Motorola 56001 digital signal processor that handles the machine's compact disk-quality sound, speech synthesis, high-speed modem communication, facsimile transmission, array processing, voice mail and advanced numeric processing. The machine comes with a colossal 8Mb as standard, and can take another 8Mb on the motherboard. Taking a leaf out of Uncle Sir Clive's book, NeXT has designed two proprietary gate arrays that differentiate the machine from anything else using the 68030. The two chips are the Integrated Channel Processor to manages the flow of data between the central processing unit, main memory and all peripheral devices. It has its own intelligence, thereby offloading the 68030, so that the latter can run at its full rated capacity of 5 MIPS. The Channel Processor provides 12 dedicated direct memory access channels, including ones for Ethernet and for disks, monitor, printer and other peripherals. Next reckons that the Channel Processor chip replaces several hundred chips performing similar functions on a mainframe, and thus "raises sustained system throughput to a level impossible with either personal computer or workstation architectures". The other custom chip designed for the machine is the Optical Storage Processor, which controls the vast 256Mb exchangeable read-write optical disk drive from Canon.

Suppliers endorsements

Perhaps the biggest achievement of NeXT Inc was to get large parts of the industry so excited by Steve Jobs' plans that they were prepared to subsidise the company with unbeatable OEM prices, and vast credit, just so they could say they were associated with the product. And so it was that we got releases from Canon Inc on its 256mb erasable optical disk drive; Adobe on Display PostScript - revealing that the laser printer uses a Canon SX engine; Maxtor Corp saying it is sole supplier of the optional magnetic disks; and Motorola Inc on its three core microprocessors. The \$6,500 configuration includes the disk drive, and 17" "extremely high-resolution" MegaPixel Display from Sony Corp. The 400 dot per inch PostScript laser printer is another \$2,000.

UNISYS, NCR, FUJITSU, ICL, FUJITSU: AT&T MUSTERS POWERFUL SUPPORT IN UNIX TALKS

While the industry heavyweights in the Open Software Foundation still have the bulk to win any tug-o'-war, AT&T Co has managed to marshal a surprisingly strong team for its own view of the appropriate compromise between the two Unix camps (UX No 201). Against IBM, DEC, Hewlett-Packard Co, Siemens, Bull, Nixdorf and Apollo Computer, AT&T is now able to field Unisys, NCR, Fujitsu, ICL and Amdahl, Prime Computer and Gould Computer as well as Olivetti and Sun Microsystems, and without the massive muscle of Siemens and Hitachi, in terms of total business done, the two sides would be a near even match. The sticking point now seems to be whether the Unix kernel should be the one from IBM's next release of AIX, or the one in AT&T System V.4 - and from more than one direction is coming an insistence that IBM has intrinsically the better product - one source even dubbed it Unix System V.5. AT&T is understood to have made a serious offer to relax restrictions on access to its technology, on condition that the Foundation agreed to adopt AT&T technology - indeed the phone company is said to be suggesting that the Foundation should share the development work with its own labs.

Current Foundation plans are for a future version of IBM's to be the basis of OSF Unix: this version is said to incorporate V.2 and V.3 features but to steer clear of AT&T extensions such as the Remote File System that, coupled with AT&T's licensing policy - which could now open up - angered manufacturers back when V.3 was released. DEC, which required considerable effort to bring its BSD-based Ultrix to System V Interface Definition compatibility, is said to be the main objector to any further shift towards AT&T technology. This may remain a considerable sticking point for any attempts by AT&T to get System V technology adopted by the Foundation, but, on the other hand, just about every serious RISC and complex instruction set microprocessor runs AT&T System V.3 Unix now, which has to make it easier to extend the operating system for those processors by using Foundation features built on an AT&T kernel than to try extracting all or part of a product built on an as-yet undelivered drastically rewritten AIX product. Another issue is that AT&T is insisting that as part of any rapprochement, any company should be free to become a Foundation sponsor with a seat on the board - and most of the 11 companies in the AT&T camp may well want to pay their \$4.5m dues and get a seat on the board - which could lead to somewhat chaotic board meetings and an embarrassment of cash flowing into the Foundation. It is clear that the negotiations are going to be extremely difficult and are likely to be protracted, but almost all parties are agreed that the stakes are so high that they have to succeed.

MULTIFLOW WINS JOINT MARKETING AGREEMENT WITH TEKTRONIX

Multiflow Computer, Inc, the Branford, Connecticut builder of very long instruction word scientific computers has been going through a difficult time since it launched its Trace series of machines, but the company has won a powerful partner which it hopes will help it ease its problems. It has won a joint marketing agreement from Tektronix Inc, under which the Beaverton, Oregon company will co-operate in marketing Multiflow's Traces as compute servers for the Tektronix family of high-resolution graphics netstations and workstations - the newest of which are described in page two today. The agreement calls for ships of Multiflow computers and Tektronix netstations and workstations as an integrated computing system for design engineers and others in the mechanical and electronic engineering computer-aided design, and computational chemistry markets. Tek is the third company after Apollo Computer and Silicon Graphics to sign such joint marketing agreement with Multiflow.

... AS TEKTRONIX REPLACES ITS LEADING WORKSTATION PRODUCTS

Tektronix Inc has added two more workstations to its graphics range, with the release of the 4319 bit-mapped workstation and the 4211 Netstation. Tektronix is hard at work implementing workstations around the fledgling Motorola 88000 RISC microprocessor - it was the first manufacturer to sign up for the chip - and says Motorola parts will continue to play an important role in future products, although Intel chips will remain in other products. The Beaverton, Oregon-based company says its combination of 88000s produces an incremental performance increase unmatched by Sun Microsystems' rival Sparc, and points to the 88000's availability, as well as its own research in Gallium Arsenide. Tektronix decided to adopt the 88000 one year before the chip's official launch, and will continue to co-operate its research with Motorola, which also provided design input for the new 68000 family stations. Built around a 20MHz 68020 processor, the 4319 graphics workstation adds a 68881 floating point co-processor, has 4Mb standard RAM, expandable to 20Mb, with 1.2Mb floppy and 86Mb hard disk; it supports Ethernet, X Window and Tektronix's version of Unix System V, Utek. Like the 4310 series, the 4319 is aimed at graphics-intensive applications such as computer-aided design, architecture and civil engineering. A range of software packages are available for the £10,000 product, including the Anvil-5000 CAD/CAM system from Manufacturing & Consulting Services Ltd, with which Tek will jointly market the new products in the UK. Meanwhile, the 4211 Netstation - which uses the Texas Instruments Inc 34010 graphics processor - is claimed to offer workstation functionality at a terminal price; it has on-board Ethernet and the main processor is the 16-bit bus Intel 80386SX which, when combined with dual processor architecture, allows it to produce 40,000 vectors per second - compared with the 4111's 8,000. Main memory of 2Mb is standard with options up to 4Mb. Replacing the 4200 graphics terminal, the £6,000 Netstation is compatible with all software applications for the 4111 - which is Tektronix's biggest moneyspinner in the graphics market. Marketing agreements for the new station been reached with software firms ESRI and Precision Visuals Inc.

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3COM EXTOLS LAN MANAGER

After 18 months of joint development, 3Com Inc and Microsoft Corp have finally begun shipping LAN Manager as part of the 3+Open line, saying it is the first networking product to support both existing MS-DOS and Macintosh applications, as well as new OS/2 based distributed processing systems. Based on OS/2, the LAN Manager supports existing MS-DOS users, to whom it claims to offer an improved service over the old MS-DOS-based 3+ system by providing a better user interface. However, despite widespread reluctance to migrate to OS/2, both companies feel that end users will express little concern over the fact that the machine is OS/2-based, and are optimistic that LAN Manager's release will encourage a trend towards wider acceptance of OS/2 at the server end. 3Com has also announced early support in the industry for the 3+Open line - DEC will license LAN Manager technology for use on VAXes, while X Open has an agreement with Microsoft to publish LAN Manager protocols and application programming interfaces as part of the X/Open Portability Guide: OS/2 LAN Manager is now supported on "the three most important local area network server architectures," OS/2, Unix, and VMS.

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Clear signs of a slowdown in Motorola Inc's third quarter figures, with growth in sales and profits slowing sharply, are likely to aggravate growing worries of a turndown in the chip business.

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FileNet Corp, Costa Mesa, California has added software that enables the Sun Microsystems Inc workstation families and DEC's VAX workstations and processors to use information stored on FileNet integrated image and data processing systems: the package includes FileNet's Client Library Tool Kit and kits for SunOS start at \$2,540, for VAX/VMS at \$15,000, available from January; the company also said its IWS workstation with 20" high-resolution display is being reduced to \$8,800 - but didn't give the previous t.g.

A Cray Research Clay-25/4-128 super-computer worth \$16.5m is to go into the US National Aeronautics & Space Administration's Langley Research Center Central Scientific Computer Complex in Hampton, Virginia in the first quarter of 1989; the Computer Complex also has some new Convex Computer CPUs on order.

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Prime Computer Inc and General Electric Co have announced they had signed a definitive agreement for Prime will acquire GE's Calma business and enter into a strategic alliance with GE for the development and purchase of CAD/CAM software: specific terms of the agreement were not revealed.

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And the Natick minimaker also said that it had concluded a technology licence agreement with MIPS Computer Systems Inc that allows Prime to offer MIPS compilers on all of its Unix-based systems rather than just the ones based on the MIPS RISC chips.

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The TOPS arm of Sun Microsystems in Alameda, California has a FlashBox to enable Apple Macs and MS-DOS micros to communicate on LocalTalk-compatible networks at 770Kbps or up to three times faster than the AppleTalk data rate: it is \$189, and is out in the US in December 1988.

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News of new members of the Open Software Foundation still continues to trickle through, and a total of 33 members have now been revealed: most interesting amongst recent additions is the telecommunications section of the Swedish PTT, Televerket, a Unix user as well as parent to leading Swedish Unix system manufacturer Diab Data: other new members include Pacific Bell, Informix Software, Landmark Graphics, and the UK system software house Data Logic, as well as three more computer manufacturers - Computer Consoles Inc, Data General and Norsk Data.

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Unisys Corp is taking Unix onto the factory floor, and says it will introduce several new Unix software application products at the Autofact '88 show at Chicago's McCormick Center Hotel on November 1st: the new products address manufacturing applications such as electronic document interchange, shop floor data collection on personal computers, and distributed manufacturing resource planning.

Control Data's ETA Systems Inc in St Paul, Minnesota, says that it has taken another eight orders so that it now has 27 ETA-10 supercomputers installed and on order, exceeding the total number of the predecessor Cyber 205s CDC sold.

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Intel Corp's Intel Scientific Computers in Beaverton, Oregon has enlisted the aid of Verdix Corp, Chantilly, Virginia in the implementation of the Verdix Ada Development System environment on Intel Scientific's iPSC/2 Concurrent Supercomputer: Intel hopes that full Ada support on the hypercube machine makes it a highly desirable platform for large scale Ada programs such as those being pursued for the US Strategic Defense Initiative, the space station, and for Battle Management/Command, Communication, Control and Intelligence systems; the iPSC/2 already supports Lisp, Fortran and C languages.

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Convergent Solutions Inc, on its way to Unisys Corp with its parent, Convergent Inc, has won a \$9.9m contract from the US Army for an Army-wide licence to the cs/ADS Application Development System for use under the BTOS and CTOS operating systems (notice that Convergent, already thinking like a Unisys company, puts the Burroughs BTOS derivation before its own original CTOS!): the contract runs to 1993 and the Army seems to be extremely happy with the product, saying that its Stannis software "was developed in a fraction of the time it would have taken using traditional computer languages," and that cs/ADS was originally enlisted when the Army tried to develop a personnel system using Cobol and fell behind schedule

- and with that kind of endorsement from the top brass, it is not surprising that Convergent Solutions is hard at work on implementations of the product for the Unix, OS/2 and MS-DOS environments.

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Correction: Last week some subscribers were inadvertently sent copies of Unigram.X which included an advertisement for Root Computers - this obviously should have read Unisoft, the company's new name.

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AT&T RELAXES LICENSING FOR UNIX V.3 NETWORKING EXTENSIONS

AT&T has relaxed its requirements for Unix V.3 licensees to take the full range of Network Services Extensions included in the version - previously a major sticking point with many of the companies that subsequently joined the Open Software Foundation. V.3 networking extensions included the popular Streams I/O services, the OSI Transport Layer Interface, but also the less popular Remote File Sharing (RFS) system, seen as superfluous by many licensees. Previously, AT&T had insisted that all systems claiming to be V.3 conformant would need to utilise RFS along with the other NSE components. But at the end of last week, AT&T sent letters to its licensees saying that this was no longer a requirement. The move has been welcomed by the industry: ICL's Peter Cunningham said it "reflected AT&T's more open attitude to its technology and licensing". It also removes a further obstacle towards a reconciliation between AT&T's Archer Group and the Open Software Foundation.

...AS JAPAN REVIEWS UPGRADE OF SIGMA OS TO UNIX SYSTEM V.4

In a development that will indirectly bolster the AT&T-aligned Archer group in its battle with the Open Software Foundation (see page two), the IPA, Information Technology Promotion Agency in charge of the Ministry of International Trade & Industry-sponsored Sigma project, is to establish an operating system standardisation committee with a remit to examine the issues and make proposals on Unix standardisation. The Sigma OS is based on Unix System V.2 where the industry is now rapidly moving towards System V.4; accordingly, the new committee will review world trends towards standardisation and consequent changes required to the Sigma OS. The Sigma Project is a Japanese national effort to address the acute dearth of software developers by designing a standard hardware and software environment to accelerate application development.

SUN FEDERAL ADDS SECURE SUNOS UNIX FOR B1 DISTRIBUTED SECURITY

Sun Microsystems last week announced a secure version of its SunOS operating system, called SunOS MLS (Multi-Level Secure). Running on standard Sun-3 and Sun-4 hardware as well as Tempest versions of Sun products, the new system is an extension of commercial SunOS, Sun's merge of AT&T's System V and Berkeley 4.2 Unix. Development work was carried out by wholly owned subsidiary Sun Federal Inc, which achieved a B1 rating for the operating system, specified by the DoD security specifications listed in the "Orange Book". Sun claims the offering allows them to offer one of the most complete secure distributed computing environments available, when using Tempest workstations and fibre-optic networking. Features include a multi-level secure windowing capability allowing users to manipulate and display data at different classification levels simultaneously - even on the same screen given security clearance - and mandatory access control security principles, using security labels to determine right of access to files or devices. There is also a system wide auditing capability and a method of enforcing hardware password protection. Sun said its primary market for the new software would be government applications, but said that enhanced industrial security was also of increasing concern. First customer shipments are scheduled for June 1989: cost is \$3,000 for a two-user licence per workstation.

HP READY WITH PM/X

Hewlett-Packard says it will announce its commitment to introduce Microsoft Corp's Presentation Manager user interface for the Unix environment in two weeks time: the product, PMX, will allow the use of HP's New Wave user environment on Unix via its support for X Windows, and will provide a common look and feel and applications programming environment across DOS, OS/2 and Unix machines: apparently development was only possible after "significant changes" to the Presentation Manager code were agreed between HP and Microsoft. And Hewlett-Packard has abandoned development on its proprietary Widget toolset for X-Windows, and will instead adopt whatever technology is chosen by the Open Software Foundation: according to UK Marketing Manager Trevor Wing, HP, Wing told attendees to last week's Open Software 88 conference organised by Sphinx Ltd in London, will in future drop any competing in-house developments that do not get chosen as part of the OSF Level One specification, and has committed to support "all shippable products that the Foundation introduces". According to Wing, HP has also dropped a proprietary database access system in favour of OSF technology.

CRAY HITS SNAGS ON CRAY-3

Cray Research Inc has hit problems - thought to be associated with the Gallium Arsenide chips - on the upcoming Cray 3, and as a result has reported a 37% fall in third quarter profits to \$22.6m, 73 cents a share on sales down 21% at \$145.2m. The company says the Cray-3 snag is likely to cost an extra \$10m this year, and that profits will therefore be up only 5% to 7% compared with 1987, against analysts forecasts of 10%. It now expects to lease more machines and sell fewer in 1989, and as a result, it is likely to grow turnover only 10%, and is budgeting accordingly. Some observers fear that the problem on the Cray-3, which is due out in late 1989, may also delay the launch.

ACORN PICKS X.DESKTOP, UNIPLEX

Acorn Computers Plc has gone to its Cambridge neighbour IXI Ltd and its X.desktop for the graphical user interface to its forthcoming Unix box built around the Acorn RISC Machine chip, and Uniplex Ltd for its Uniplex Business Software, including both the Uniplex II Plus applications and Uniplex Advanced Office.

ARCHER GROUP AND AT&T CONCESSIONS PUT PRESSURE ON OPEN SOFTWARE FOUNDATION

Although both AT&T and the Open Software Foundation (OSF) insist that talks looking to resolve the conflict between the two rival Unix developments continue, it was fairly clear that negotiations were not going too smoothly last week when a group of eighteen AT&T supporters - now known as the Archer Group - made a public commitment to "pure" Unix V.4 (UX No 202). The eighteen members - Amdahl, CDC, Fujitsu, Gould Computer, ICL, Intel, Motorola, NCR, Olivetti, Prime, Sun Microsystems, Toshiba and Unisys on the hardware side, joined by software companies Human Computer Resources, Informix, Lachman Associates, Micro Focus and Unisoft - claim to account for around 75% of the Unix systems so far sold. And although AT&T itself is not a member of the Archer Group, it is re-enforcing the move by conceding some of the main points of contention that led to the original dissatisfaction of the Hamilton Group and the formation of the Foundation in the first place.

Timed with the announcement of the Archers, AT&T's Data Systems Group President Robert Kavner re-stated AT&T's intention to spin-off future development and licensing of Unix System V into a new Unix software division, "separate from our computer business". Kavner said further plans would be announced "shortly", and significant developments are now expected before the end of the year, a far cry from the previous position that such a move was "a couple of years away" (UX No 181). AT&T has also dropped the controversial licensing requirements that insisted on the inclusion and implementation of Remote File Sharing on Unix versions from V.3 onwards (see front page), and is currently "on tour" with its V.4 software developers conferences - "to make sure we're on the right track", according to conference speaker H Garrett Long, responsible for large systems integration at Bell Labs.

Negotiations continue

Henning Oldenburg, Director of European Operations with the OSF at its newly established Brussels headquarters, said that the Foundation had already held talks with ten of the Archer companies, and that further negotiations with AT&T were continuing this week. Oldenburg confirmed that the barrier to further progress was currently the choice between IBM's V.2/V.3 compatible AIX kernel as a base for the OSF Level One specification against AT&T's V.4 kernel. "The Archer Group is insisting on the use of V.4 - full stop", said Oldenburg. "OSF is willing to consider V.4 technology, but only if we can put it through the 'open process', with both V.4 and AIX on the table so that our members can pick out the best technology of both". What could turn out to be a further sticking point is the future development of the operating system: OSF plans to take base AIX technology from IBM and continue development itself; and would insist on doing the same with AT&T's V.4. Oldenburg did not seem impressed with AT&T's plans for a separate Unix division - "it's no good if it turns out to be a 100% owned subsidiary", he said. Even so, the recent concessions from AT&T, and increased pressure resulting from the formation of the Archer Group should spur both sides on towards finding a resolution, with some predicting an announcement in the very near future. Meanwhile, all is quiet: the latest official AT&T statement says only that the two sides have agreed to continue talks, and that none of the issues will be discussed outside of the meeting place until a decision has been reached.

SVID ISSUE 3 FORMS BASIS OF UNIX V RELEASE 4

Whatever the outcome of talks between the Open Software Foundation and AT&T, it is very clear that a high level of market pressure has re-shaped AT&T's attitude to the open systems marketplace in a way that would have seemed inconceivable even a year ago. No new version of Unix has ever been trumpeted in the way that System V Release 4.0 has, and never have software developers been given so much information, and chances to comment, on a system that is unlikely to reach the marketplace until the first quarter of 1990. Attendees of the V.4 Developer Conferences (UX No 199), such as the London event that took place this week, were weighed down with technical information on the new release, including draft releases of the Application Binary Interface for V.4 systems, and a revised draft of the Open Look user interface specification.

ANSI and Posix

Release V.4, which aims to merge the current System V, Berkeley Unix and Xenix variants of the operating system, will be based around Issue 3 of the System V Interface Definition (SVID), which expands on the current Issue 2 SVID by encompassing the full base operating system services specified by the ANSI C language and Posix portable operating system specifications. The ANSI X3J11 committee working on C added about 30 C library routines to the 150 already included in SVID 2, mostly to support internationalisation, while the Posix P1003.1 standard added another 30 system calls to SVID 2's existing 100, addressing terminal control, signal handling functions (from BSD Unix) and job control functions. AT&T has also added functions that provide Streams I/O services and the OSI Transport Layer Interface to the base operating system. On top of this mandatory base will be optional extensions to the SVID, including networking, utilities, administration, software development and terminal interface extensions. SVID Issue 3 will be available in draft form from the middle of the first quarter of next year. Beta versions of Release 4.0 source will be issued by the end of the second quarter, with initial binaries and ports by the third quarter.

ASHITON-TATE AGREES TO DO VMS/ULTRIX dBASE PRODUCTS FOR DEC

DEC and Ashton-Tate Corp has revealed an agreement under which Ashton-Tate will develop, and DEC will market and support, versions of Ashton-Tate's dBase database management and applications development software for the DEC computing environment. The Torrance, California company will develop character-based dBase products for VAX users with VT terminals, and graphics-based products for DECwindows/XUI workstations, with modules to run under both VAX/VMS and the Ultrix implementation of Unix, and to provide local and remote transparent data access and sharing with VAX Rdb/VMS, and native dBase databases. An MS-DOS-to-VAX database link is included in the agreement to enable MS-DOS dBase applications running on networked micros or ones connected to DEC's new PCLan/Server 2000, to access data in remote DEC Rdb/VMS databases transparently. Transparent read-only access to mainframe databases from dBase is part of the plan, including connections to IBM's DB2 and Cullinet Software Inc's IDMS/R, achieved through DEC's Vida and DECnet/OSI SNA Gateways to IBM networks. No timetable for the products nor financial details of the pact were given by either party.

* **Beating its self-imposed deadline by a week, Ashton-Tate Corp yesterday began shipping the delayed dBase IV version to its customers.**

33 MHz 68030 UPGRADE "DOUBLES SPEED OF MAC II"

A 68030-based accelerator board for the Macintosh II launched recently by Daystar Digital, Flowery Branch, Georgia, is said to boost the performance of a Mac II "between two and five times, depending on the application", according to Daystar president Andrew Lewis, talking to Microbytes Daily. The board, named the 33/030 Accelerator II, uses a 33 MHz version of Motorola's 68030 chip, compared with the 16 MHz version used on the latest Mac IIx (UX No 198). The board includes an optional 68882 floating point co-processor (also 33 MHz), though the original 68881 on the Mac II can also be used. No wait state operation is achieved through the use of high speed memory cache, using 32K bytes of 25-nanosecond static RAM, which does not affect existing memory modules. The Daystar Accelerator does not require a separate Nubus board: instead it slots directly into the original 68020 socket on the motherboard. Adapted systems are claimed to maintain compatibility with all standard Mac II software and Apple's A/UX Unix. Availability from December, no prices were given.

COMPUTERLAND STORES TO RETAIL UNIX SYSTEMS

ComputerLand Corp reckons that there is now a retail market for personal computers running Unix, and has done a deal with the Santa Cruz Operation Inc under which ComputerLand will provide complete systems based on Compaq Computer Corp's 80386-based micros running SCO Xenix 386 - which should be called Unix now. ComputerLand will make the entire SCO Xenix/Unix product line available to all its North American franchisees who are authorised by Santa Cruz Operation.

NIXDORF TO PUT TARGON NAME ON APOLLO GEAR

Helpfully plugging the hole left in its West German operations by a drastic shortfall in orders from Siemens AG under its long term supply agreement, Apollo Computer Inc has won Nixdorf Computer AG as a second major West German OEM customer for its workstations. Under the agreement, no doubt negotiated during the longeurs of Open Software Foundation meetings - the two are both founder-sponsors - Nixdorf has the right to market Apollo's workstations worldwide as part of its Targon line of Unix systems, which also includes its own 680XO multiprocessors and Pyramid Technology Inc's Unix minis. No value was put on the agreement.

MOTOROLA SHEDS MORE LIGHT ON ITS VMEexec REAL-TIME SUPPORT PRODUCTS

Motorola Computer Systems Corp has now given details of the VMEexec line of real-time support products for Unix System V systems that it hopes will become an industry standard operating system for VMEbus and Unix applications. The products, first previewed in October 1987 (UX No 150) are claimed to provide enhanced productivity through the maintenance and support of only one operating system and driver, the portability of applications to and from Unix, and easy exchange of input-output devices from different supplier. Motorola maintains that the line is capable of defining a set of standards for real-time System V applications; it claims widespread, though unnamed, industry support for VMEexec, including several major contracts to be announced at the end of the year. Future influence in the debate over standards will continue through participation in the VME International Trade Association, VITA; however European General Manager Bernd Huber concedes that Motorola cannot afford to wait until a more formal standard arrives, pointing out that the VMEbus itself took five years to become standard. VMEexec replaces the VersaDos operating system, though VersaDos users now can migrate to a real-time environment. The line consists of a 68030-based real-time development system, the VME Delta Model 1147, which has a 20MHz MC68030 processor, 4Mb or 8Mb RAM, an MC68882 floating-point co-processor, 4 MIPS of performance and up to 600Mb of Winchester disk storage; a real-time executive, RTEID; a System V Interface Definition Library to interface Interface Definition-compatible applications and RTEID-compliant kernels; and an MVME143 embedded controller for real-time operation with 32-bit VMEbus Interface with 4Mb of DRAM. VMEexec was developed with Telesoft, Microtec and Software Components Group, which developed the Ada compiler, debuggers and kernels respectively; it will be available in February, 1989, with a start-up kit costing \$3,500.

* **Motorola Inc has bought Gould Inc's Gould Center in Urbana, Illinois on undisclosed terms to enhance its Unix expertise. The centre will work on the VME Delta boards and systems.**

CULLINET SOFTWARE READY WITH UNIX PUSH

Cullinet Software Inc is set to announce support for Unix System V in November, users attending the Cullinet User Week in St Louis, Missouri were told last week. Vice President John Landry revealed that a Unix version of Cullinet's IDMS/SQL database management system would be available early next year. According to Landry, Cullinet applications will eventually be capable of accessing data from any database supporting SQL: first on the cards is Oracle, scheduled for April next year. Cullinet's Enterprise Computing strategy aims at providing the company's database, application and computer-aided software engineering (CASE) products on micros, departmental systems and mainframes.

NESTOR'S NEURAL NETWORKS WIN ENDORSEMENT FROM CDC, MORGAN STANLEY, ARTHUR D LITTLE

With much less hyping than was accorded artificial intelligence software, neural networking technology (UX No 128,135) appears to be making considerable commercial headway, with the likes of Textron Inc's Avco Financial Services unit trying out neural nets for analysing loan applications, BancTec Inc in Dallas planning to introduce a system next year to read handwritten characters on cheques, and great enthusiasm for the technology in the US Department of Defense. One of the pioneers of the technology is Nestor Inc of Providence, Rhode Island, which a few weeks back was able to announce three agreements that make it clear that the company and its technology are being taken very seriously indeed. The company has won an agreement from Control Data Corp's Institute for Advanced Technology under which the CDC unit will list and provide seminars on the Nestor Learning System to its 3m plus subscribers. Nestor and the big Morgan Stanley & Co Inc investment bank have entered into a non-exclusive licence agreement to use the Nestor Decision Learning System for an equities trading application. And consultant Arthur D Little Inc has agreed to launch a co-operative effort to market Nestor's neural artificial intelligence products to the financial and industrial markets. Nestor believes that its neural-based system of artificial intelligence is superior to anything yet developed by anyone and says that after several months of on site trials, Morgan Stanley concluded that its self-programming Learning System was the only artificial intelligence system yet developed that is suitable to its applications. The company notes that all its systems are adaptive information processing systems that derive their own rules, or learn from experience, unlike conventional expert systems. Pattern and object recognition, and decision making capabilities in the financial markets are among pre-sent applications using the Nestor technology, and the company has now moved on to research into applications in industrial vision systems.

MICRO FOCUS OFFERS COBOL/2 FOR 386/UNIX, TWEAKS McFARLAND

Building on the "strategic" relationships it has forged with Unix manufacturers over the past year, Newbury-based Cobol supplier Micro Focus Plc has announced that it has a version of its Cobol/2 compiler for Intel 386/Unix. In addition to capturing the Unix-based small system section of the applications development market, the long-term aim behind the move, claims European marketing manager Stuart McGill, is to "erode" the current Ryan-McFarland RM Cobol V2.0 customer base. According to McGill a one-off mailshot to 400 key RM users in the US, showed a "staggering" 25% keen to move over - a figure which he believes will be reflected within the 20 to 30 top RM accounts identified by the company in the UK. The move will clearly add to floundering Austec International Pty's woes (UX No 202). Austec was rapidly dismissed by McGill as an "incidental" provider of "adequate" technology, so it doesn't sound as if the UK firm is interested in picking up the pieces. Although keen to emphasise that conversion was simple and subsequent performance gains immense - "anything between 50% to 1,000%" - McGill also said that the company has extended its Value Added Reseller Incentive or VIP Programme to cover Europe. Under the programme, already running in the US (UX No 199), resellers are invited to test Micro Focus Cobol/2 on a free one month trial basis, and are then offered various levels of on-site, follow-up, and Compatibility Hotline migration support.

...AND mbp FOLLOWS WITH VISUAL COBOL
mbp Software and Systems, based in Orgatechnik, Germany, but now with offices in both California and Hertfordshire in the UK, has also released a version of its Visual Cobol for the Intel 80386, although its claims of being the first to offer such a product were minimised somewhat by prior notice from both Austec and Micro Focus. Visual Cobol for Unix V.3 on the 80386, includes multi-keyed ISAM and C-ISAM support, direct calling to and from C routines, multiple Sort/Merge options, extended Chaining utilities and interactive symbolic debug facilities. A screen management system, SMS, for automating screen design is also bundled in. The release follows Visual Cobol versions for the IBM 6150 in August and OS/2 last month: it is also available for MS-DOS, local area networks, and Motorola 68000 and National Semiconductor hardware.

SUN WILL RISE IN SCOTLAND

Sun Microsystems Inc is expected to announce shortly that it has chosen Linlithgow, West Lothian as the base for its European manufacturing operations. The Financial Times believes the proposed plant will initially employ about 300 people.

WHITE KNIGHT FOR CADNETIX?

Goldman Sachs & Co has been busy in its quest for white knights to save Cadnetix Inc from Daisy Systems Corp, and Hewlett-Packard Co heads the list of firms said to be interested. Also near the top is Cadence Designs Inc, and others tapped include Prime Computer Inc, Valid Logic and Intergraph Corp. It is not clear whether Daisy was invited to talks to counterbid, or be acquired with Cadnetix (UX No 200).

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IBM's NeXTSTEP "WILL NOT CLASH WITH PRESENTATION MANAGER"

The fact that IBM has been showing so much interest in the NeXTStep user interface from Next Inc (UX No 202) will not affect its long term commitment to OS/2 and the Presentation Manager, despite defensive sounding comments reported from Microsoft Corp's Bill Gates expressing his "disappointment" in the technical innovation from Steve Jobs' firm. While OS/2 and its interface has long been promoted as IBM's strategic system for PS/2s and SAA host environments, IBM spokesman Scott Brooks told Microbytes Daily that the NextStep technology was intended "purely for Unix environments", and so presumably intended for use on IBM's main AIX platforms, the RT (6150) PC and the PS/2 Models 70 and 80. Users, said Brooks "can expect a steady stream of enhancements to both our OS/2 and Unix-based systems", and he said that IBM products would follow "closely behind" the release of NeXTStep Version 1.0 on the NeXT computer, expected during the second quarter of 1989. Neither IBM or NeXT presented the product to the recent user interface Request for Technology issued by the Open Software Foundation./FP

DEC REPLACES MICROVAX II RANGE - NEW DISKS, I/O AND CLUSTERING

DEC last week revealed its replacements for the MicroVAX II range yesterday, but there was no sign of the expected new VAXstation. Main features of the new MicroVAX 3300 and 3400 models, which run VMS, Ultrix or DEC's VAX-ELN real time operating systems, are a faster cpu, new disk drives and input/output controller, and a dual host capability. Using the debit/credit benchmark, DEC rated the hardware at four transactions per second, and said that a MicroVAX 3400 is 50% faster than IBM's AS/400 for 60% of the cost. The cpu is a "less highly tuned" version of the MicroVAX 3000 chip used in last year's 3500 and 3600 models, with a slower clock speed and one (rather than two) levels of cache, giving twice the performance of the MicroVAX II cpu, according to DEC. Maximum, error-correcting code memory is 28Mb. I/O performance has been boosted with the first in a new generation of hard disk units - or integrated storage elements, as DEC insists on calling them from now on - the RF30 ISE, half height, 150Mb disk using thin film plated media, which incorporates the I/O controller and gives triple the I/O performance of the older RD systems on the MicroVAX II. The speed limitations of the Q-Bus have led DEC to include a new storage bus, the Digital Storage Systems Interconnect (DSSI), which allows dynamic dual host configurations under VMS to be set up so that users on either of the two hosts can access any of up to six disks: this gives easier access to data and a measure of fault tolerance. Six (3300) or twelve (3400) Q-Bus slots are retained for other peripherals. Prices start at £16,430 for a single user server configuration up to £84,750 for a bundled dual host system. Availability is immediate for VMS, January for Ultrix versions.

AT&T ESTABLISHES SYSTEMS INTEGRATION DIVISION

AT&T Co is joining the rush to get into the turnkey systems implementation business and has established a Systems Integration subsidiary. It will start life with between 200 and 300 people and will initially go after contracts in telemarketing, data networking and network management in the financial services, manufacturing and distribution businesses. It will agree to work with both AT&T and third party computers and telecommunications kit, and although it will compete with the likes of Electronic Data Systems and Computer Sciences Corp, it says it will collaborate with either on specific contracts. However its bid for the US government's big FTS 2000 telecommunications project remains with AT&T Federal Systems.

OPEN SYSTEMS FOR EUROPE - PROGRAM FINALISED

The final programme details of December's Open Systems for Europe conference, organised by Unicom and presented in collaboration with Unigram-X, have now been settled. The three day seminar will cover technical issues on the first day, with the keynote speech presented by Commission of European Communities Director of Informatics Walter de Backer, and others as detailed in UX No 201, with the addition of Mike Lambert from X/Open, Henning Oldenburg from the Open Software Foundation and Andrew Twigger from Unisoft. Day two will focus on strategic and policy issues, with speakers from Relational Technology, Olivetti, CAP Group, British Coal, ICL (John Dickson, Chief Operating Executive), Groupe Bull and IBM UK; the final day includes practice and implementation sessions, with procurement policies discussed by the CCTA, LAMSAC, the NHS, Automobile Association and Lloyds Insurance Brokers Committee, and open system user case studies discussed by Dr Pamela Gray of Sphinx. Olivetti's speaker is still to be announced, due to the unavailability of Vitorrio Cassoni. Venue for the conference, which will be held between December 6th-8th, is the Mount Royal Hotel at London's Marble Arch: contact Unicom for further details on 0895 56484.

SONY'S 650Mb 5.25" ERASABLE OPTICAL DRIVE NOW AVAILABLE

Sony Corp's erasable magneto-optical disk drives are now available in the US: the company is offering the SMO-S501 self-contained subsystem and the SMO-D501 integratable model. It also offers two 5.25" cartridges for the drives, the EDM-1DA1 with 512 byte sectors and the EDM-1DA0 with 1Kb sectors, storing a formatted 650Mb and compatible with 3M Co's erasable optical cartridges. Sustained data transfer rate is 7.4M-bits per second, and short-stroke seek time is 20mS, with access to up to 3Mb of data in less than 40mS; the average access time is 90mS. Single unit pricing for the drive will be \$4,650. Sony already has a fan of the drives in Hewlett-Packard Co, which says it "has been conducting extensive product performance and reliability tests" of the products "and is excited about the potential opportunities for mass storage."

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Nixdorf Computer is to begin shipments of its Pyramid Technology-based fault tolerant Targon-32 system in the US next Spring, according to Electronics News: the system has been available in Europe for some two years, but lack of support capabilities delayed its US introduction.

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Honeywell Bull UK Ltd has announced the Xenix PC SP, a new Unix system based on the company's 80386 personal computer and Santa Cruz Operation's Xenix System V which allows up to 15 users on one PC SP to alternate between Xenix and MS-DOS; options include development tools to create programs in both MS-DOS and Xenix environments, and multi-tasking windows to run applications to run concurrently; available immediately, the Xenix PC SP starts at £8,000 for a 70Mb system rising to £9,500 for a 140Mb disk system.

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Digital Equipment Corp, DEC, reported first quarter net profit down 17.2% at \$223.4m on turnover up 16.3% to \$2,942m. Net per share fell 16% to \$1.71.

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Sun Microsystems Inc has reported first quarter net profit up 59.0% at \$20.6m on turnover up 102.6% to \$388.5m. Net earnings per share rose 44% to \$0.52.

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Cadnetix Inc says it is continuing discussions with an unnamed third party regarding sale of the company and has contacted unwelcome bidder Daisy Systems Corp to invite it to participate in similar discussions: it expects to start negotiations with one or more such parties soon.

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Ing C Olivetti & Co SpA's new LSX3000 machines have hit the spot with the Swiss national railway, which wants 600 of the things, plus 1,000 personal computers, 1,500 printers and 300 workstations to automate its passenger service: value of the contract is \$18m and it is due to be completed by 1991.

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AT&T Co has reported third quarter net profits up 16.2% at \$587m on turnover up 3.3% at \$8,750m; nine-month net rose 8.2% to \$1,673m on turnover up 3.4% at \$25,854m. Net per share rose 17% to \$0.55 in the quarter, 10% to \$1.56 in the nine months.

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Apple Computer Inc is forecasting that it will grow at 25% to 30% this fiscal year - taking it to annual sales of between \$5,000m and \$5,200m for the year to September 1989, in a personal computer market it expects to grow by 15% to 20%. the company reported fourth quarter net profit up 50.6% at \$107.9m, on turnover up 48.6% at \$1,168.7m; net profit for the year to September 30 was up 84.0% at \$400.3m, on turnover that rose 53.0% to \$4,071.4m. Earnings per share were up 56% to \$0.84 in the quarter, 87% to \$3.08 in the year.

The C Itoh Techno-Science subsidiary of the vast C Itoh & Co trading house, which markets Sun Microsystems workstations, has bought a 40% stake in Tokyo company Total Management Services in order to increase its expertise in the business management and accounting software field, in particular development of accounting systems: Total Management is primarily a consultancy serving accountants; in the past four years C Itoh Techno Science has sold 3,500 Sun workstations, and currently has orders for 1,500 for delivery by March.

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Fujitsu Ltd has granted Sony Corp a licence for to offer its Thumb Shift keyboard as an option on the News Unix workstation: the News is being marketed to software developers and in-house desktop publishing users, and the keyboard, which is claimed to enable users to key faster, will assist in the development of the new market; Fujitsu is already supplying the keyboard to ASCII Corp and Sony will offer it as the NWP410 at \$390 from November.

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The latest in NEC Corp's range of office computers, the NEC System 3100A range and the NEC Systems 3050A range went on sale last week: they are the successors to the NEC System 3100 and 3050 ranges, which have sold 80,000 machines in the past year; the top of the range Model 90A in the 3100A series can have a maximum of 72Mb with 240 workstations networked and is based on a proprietary 32-bit processor with a cycle speed of 20MHz to 25MHz and prices go from \$13,000 to \$300,000.

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In the US, the new DEC MicroVAX 3300 and 3400 - see front page - start at \$12,430 for a 3300 for factory or lab use, through \$25,630 for a complete server system to \$41,000 for a time-sharing system.

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Computer Power Group Ltd, Melbourne, Australia, has now completed acquisition of all the assets of BBJ Computers International Pty Ltd of Melbourne, Australia, including BBJ's Today generator and applications written with it.

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Cadence Design Systems Inc has, as reported, given up on its plans to distribute the Ella VLSI design system from Praxis Systems Plc of Bath, UK, but will continue to handle Ella sales inquiries for Praxis in the US until new distribution channels have been established.

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The West German end of the Siemens AG - Intel Corp venture has been incorporated as IBIIN Informations Systeme GmbH & Co in Nuremberg, with an initial staff of 60 people.

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Hewlett-Packard Co has taken a 15% stake in Palo Alto neighbour Conductus Inc, agreeing a five-year superconductivity research programme.

Siemens AG chose the Forrestal Center, Princeton, New Jersey for its 150-strong first US research laboratory, to support 35 product development centres across the US. It also upped funds for joint research with US colleges to \$2.5m a year.

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Silicon Graphics Computer Systems Inc has reduced prices on its mid-range product line of three dimensional graphics workstations, including the Iris 4D/50, Iris 4D/70 and the Iris 4D/80 Series up to 25%.

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Apollo Computer Inc has reported a third quarter net loss of \$3.6m, up from a loss last time of \$2.9m, on sales up 16.3% at \$157.1m; net loss for the nine months was \$1.1m, against a profit last time of \$11.2m, on sales up 20.2% at \$469.5m.

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Unisys Corp has reported third quarter net profit up 16.4% at \$151.0m, on turnover that was up 2.0% at \$2,267.7m; net profit for the nine months was up 28.1% at \$462.6m, on turnover that rose 1.7% to \$7,028.1m. Earnings per share were up 11% at \$0.72 in the quarter, 21% at \$2.22 in the nine months.

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Sun Microsystems is working on a new version of the Sun-4 workstation, according to a report in Computer Systems News: it will use a CMOS version of the SPARC processor from Cypress Semiconductor Corp, and includes a new bus architecture for faster memory access.

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Cray Research Inc has supplied a Cray-2 supercomputer along with three Convex minisupercomputers - two C210s and a C120 - to the NASA Langley Research Center, Hampton, Virginia: linked by Hyperchannel, the Convex systems will act as front-end processors to the Cray-2: the deal is the first instance of the two companies teaming up to fulfil a contract.

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Ardent Computer in the UK has won an order from Minstral Computer Systems of Bracknell to provide the Dore (Dynamic Object Rendering Environment) visualisation software for use on the Minstral Hitech range of graphics workstations: Ardent has also won an order to supply its Titan graphics supercomputer and visualisation software to the University of Leeds.

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Meanwhile, Ardent in the US has signed an OEM agreement with Computer Graphics Laboratories, Roslyn, New York, which ships animation-compositing and special effects systems to the film industry: the deal calls for the immediate shipment of two Titan systems.

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The UK Unix User Group and UKnet winter technical meeting is to be held on December 19th-20th at the University of Kent in Canterbury: contact the UKUUG on 0763 73039.

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AT&T WINS "LARGEST EVER" UNIX CONTRACT FROM US AIR FORCE

The largest computer contract ever awarded by the US Federal Government, has been awarded to AT&T, giving the phone company's computer systems division a much needed shot in the arm, as well as boosting the credibility of Unix System V as a standard operating system. AT&T is hedging its bets over the potential value of the Air Force Communications and Command (AFCAC) contract, setting the figure at "close to \$1 billion", but other estimates put the full worth at more than \$4.5 billion if the authorised procurement limits for equipment and services are met. Robert Kavner said the contract was the largest won by AT&T since it entered the commercial computer business four years ago: its annual revenues from computers have been estimated at \$1 billion. AT&T won the contract in conjunction with partners Control Data Corp for disk drives and TRW Inc for networking and engineering, against competition from IBM and Computer Science Corp, Zenith, Honeywell, Lockheed, and Planning Research Corporation. Others, such as DEC and Wang Laboratories, dropped out last year after arguments about the specification of Unix System V (UX No 152). First shipment of "an enhanced version" of AT&T's 3B2/600 computers will be made early next year, with as many as 20,000 computer shipments envisaged by the end of the contract. Amongst software chosen for the contract was Unify Corp's newly announced Unify 2000 relational database package and Accell/SQL 4GL (see page 3).

FPS COMPUTING BETS THE COMPANY ON MULTI-RISC UNIX SUPERCOMPUTERS

Admitting that it had "failed to take notice of the demands of the marketplace", FPS Computing - more familiarly known by its old name of Floating Point Systems Inc, has completed a year-long effort to set the company back on its feet by launching a new range of supercomputers based on open standards. After radical re-structuring, involving new management, substantial layoffs, and halting of research and development products such as the transputer-based T-Series systems, FPS is betting the company on the new Model 500 64-bit supercomputer range, based largely on technology from Celerity Computing Inc, which it acquired back in April (UX No 176). Described as a mid-range supercomputer, the FPS Model 500 can be configured with from one to four ECL RISC processors bought in from Bipolar Integrated Technology - these can be scalar processors or a mixture of scalar and vector processors. Top-end machines are rated at up to 133 MIPS and 167 MFlops and can support up to 512 users for around £1 million, but at the low-end, a single scalar processor system rated at 33 MIPS cost £200,000. FPS says that traditional Unix performance bottlenecks such as context switching have been dealt with by specially designed hardware including a large number of registers and process tagged addresses, as well as Celerity's Berkeley 4.3 System V compatible symmetrical processing version of Unix, introduced in 1986. The machine is in fact, largely based on the aborted Celerity 6000 (UX No 148) with FPS enhancements. Initial shipments have already been made for beta test sites.

...AND FPS SIGNS OEM AGREEMENT WITH STELLAR

FPS also announced the signing of a joint marketing and technology development agreement with Stellar Computers Inc. under which FPS will resell versions of the Stellar GS1000 Graphics Supercomputer and Stellar CS1000 Computational Server as FPS models 300 and 350 systems. FPS plans to sell the systems both as entry-level offerings to its supercomputer range and as graphical front-ends to the Model 500 - and is said to be working with an unnamed networking company in Mountain View, California, to develop a high speed communications link between the two systems.

PLEXUS WITHDRAWS FROM GENERAL PURPOSE UNIX MARKET

In a move that completes its paring down from a general purpose Unix supplier to image processing system specialists, Unix pioneers Plexus Computers Inc has sold its Unix system service and support operations to Motorola Inc's Computer Group for an undisclosed sum. Under the terms of the agreement, Motorola will assume responsibility for supporting the Plexus user base in North America and Europe, estimated to include around 2,500 Unix-based computers worldwide. According to Plexus president Paul Klein, the agreement will provide both continued service and support and a growth path for its customers using Motorola's Unix-based machines. "Plexus will focus its field resources on the image processing market" said Klein, who added that the XDP systems business now accounts for the majority of the company's revenues. Plexus changed strategic direction in 1987 to market systems designed to manage multiple types of data, such as image, text and alphanumeric (UX No 122). Its most recent sale was a \$10 million, multi-site installation at the Prudential Insurance Company of America.

IBM DOMINATES "APPLICATIONS" EXPO

The focus of this year's Unix Expo, held in New York's Jacob K Jarvits Centre, appears to be on applications, with IBM dominating the building with its 10,000 square feet stand, almost a quarter of the available space! Included on the multi-level stand was a 3090/600E, connected to a 4381, 9370, PC RTs and PS/2s, with a host of third parties participating on the stand. Launches not covered elsewhere in this issue included the first 33MHz 68030 system from Motorola Computer Systems, and new software from Locus Computing for DEC hardware, and the Santa Cruz Operation. And X/Open took the opportunity of launching its X/Open guide to Secure Systems.

SONY SHOWS NEW WORKSTATIONS AT UNIX EXPO

Sony Corp's policy of introducing new products to the marketplace at different times in Japan, Europe and the US can get very confusing: the company's launch of "three major lines of 68030-based Unix workstations" which took place at the start of Unix Expo this week included the previously launched dual-68030 based Series 1800 workstations and NWS-721 diskless workstations (UX No 171), as well as the new Series 1700 and 1900 machines. Across each of the lines, Sony's new erasable optical disk drives are available as options, using the SCSI interface. The company also launched a low-end NWS 711 68020-based diskless workstation, billed as "the most affordable workstation on the market" with a starting price of \$3,995. The mid-range 1700 Series are the first single processor 68030 workstations released by the company, while the 1900 Series follows the 1800 by using a second 68030 for handling graphics, networking, disk and tape input/output, and is a floor pedestal configuration with four 9U VME slots. The 1800 and 1900 machines are available 30 days from order, and the 1700 will be ready by February. Other announcements included the NWB-251 graphic display subsystem and NWP-516 19" colour display monitor. Software included is Sony's NEWS-OS version of Unix 4.3 BSD and X Windows V 11, and the company has entered into strategic alliances with software houses such as Wolfram Research Inc for its Mathematica programming language (UX No 186), Hunter Systems Inc for XDOS (UX No 177), and Uniplex Inc for office automation software.

INTERMETRICS WRAPS UP ACQUISITION OF WHITESMITHS

Intermetrics Inc, Cambridge, Massachusetts has completed the acquisition of privately-held Whitesmiths Ltd, of Westford, Massachusetts (UX No 201) Whitesmiths develops compilers and operating systems, notably the Idris real-time Unix-like, and markets them worldwide. It had \$2.5m sales last year, and the acquisition is for an undisclosed amount in cash and notes. Intermetrics designs and markets systems engineering and software services and development tools for real-time signal processing, navigation, avionics, and communications applications.

SUN A BIG BENEFICIARY OF NATWEST'S £15m CITY ORDER

Sun Microsystems Inc, as the supplier of hardware for the securities dealing room information systems sold by Reuters Holdings Plc will be a major beneficiary of letters of intent totaling £15m signed with Reuters and with British Telecom to equip National Westminster Bank Plc's electronic dealing room complex in Broadgate House in the City of London. Telecom will be supplying telephones and its dealer boards under the letter of intent.

MOTOROLA TO MARKET MODCOMP TRI-D MINIS

Modular Computer Systems Inc, Fort Lauderdale, Florida duly announced its new Tri-Dimensional series of minis previewed in UX No 202, and also announced a "strategic alliance" on the new machines with Motorola Inc's Microcomputer Division in Tempe, Arizona, under which the latter will support the new machines. It turns out that as well as the VLSI Technology gate arrays, the new machines include Motorola's 88000 RISC and its 68030 microprocessors as well. The pact is forecast to lead to \$50m of business for Motorola over five years. A combination of application specific integrated circuits developed by Modcomp and Motorola VMEbus subsystems form the backbone of the Tri-D Series.

APOLLO WINS HEWLETT FOR NETWORK COMPUTING SYSTEM...

Hewlett-Packard Co has followed IBM in taking a licence for Apollo Computer Inc's Network Computing System, and is evaluating how to add it to Hewlett's family of Unix computers. Network Computing System is designed to enable dissimilar and incompatible computers to be linked together with routines from an application being distributed for execution on the most appropriate special purpose CPU - floating point, symbolic, parallel or other such.

...WILL RAISE WORKSTATION PRICES 7% FOR CHRISTMAS

Apollo Computer Inc has belatedly joined the ranks of the workstation manufacturers putting up prices and blaming the exorbitant cost of memory chips. Apollo clearly wants to stimulate fourth quarter business before it improves its margins, because it is holding the increase - an average 7% - until December 19.

CLF's RAIR CHOOSES ALTOS MACHINES TO JOIN RUSH INTO UNIX

London-based TFB Rair Ltd, part of the CLF Holdings Plc group, is the latest UK firm to sign an OEM deal with Altos Computer Systems, for the new 80386-based Series 1000 and 2000 systems. Rair chose the boxes for its "major push into the Unix market" because it needed a leading brand name for its vertical market business in the retail market and legal professions. Rair and Altos also worked together to implement the Concurrent DOS and BOS operating systems for Rair's current user base, and enable it to migrate to Unix if it wishes: the move also gives Altos an entry into the still lucrative, if declining Concurrent DOS marketplace. The machines will go out both to resellers under the Altos label and under the Rair and LSI Octopus labels for turnkey applications. Marketing manager Nick Flowerdew said the Altos hardware would not clash with the existing Black Box II line from Acer Counterpoint: low-end Black Boxes have an AT bus, and will appeal to a different set of resellers, according to Flowerdew, while multi-processor Black Boxes will address the higher end of the marketplace. The company will continue to manufacture its low-end micros running Concurrent DOS from its Central London base. And Rair is also boosting its software margins for dealers with a new licensing scheme. The Rair Added Margin Partnership (RAMP) allows dealers to sub-license source code for £1,000 a month, entitling them to unlimited copying. A £750 run time licence for each system sold is also payable, along with an annual £1,800 source support contract. Initially, Rair's Unison business software will be licensed in this way, but Flowerdew said the company's retail and legal market software would also come under the scheme.

APPLE MULLS ACORN, INTERGRAPH IN RISC QUEST

Apple Computer Inc, with ambitions to make a major push into the high-end workstation market (UX No 196), is likely to desert the Motorola 68000 family at the top end and follow the market rush towards Reduced Instruction Set Computing - but has by no means made up its mind to vote the Motorola ticket and go for the 88000. According to Computer Systems News, its quest for a suitable RISC has led it to review everything from the Intergraph Inc Clipper chip set to Acorn Computers Plc's Acorn RISC Machine - fabricated in the US by VLSI Technology Inc. The 88000 is on the list, as is the MIPS Computer Systems Inc R3000. One part - also made by VLSI - that is said to have received almost not attention, is the Sun Microsystems' Sparc, and the Am29000 is out of the running, although Apple does plan to use both parts in embedded controllers. Ridge Computers Inc co-founder John Sell, now on board at Apple, is heading the RISC evaluation programme. Although the company is not likely to make a final decision for six months, it is talking in terms of tens of thousands of parts a month, and may decide to use an internal RISC design. There is also talk in Silicon Valley that Apple has it in mind to spin out its high-end workstation developments as in the same way that its software products are now the responsibility of stand-alone Claris Inc.

OSS NAMES HEAD OF DEVELOPMENT - NO NEWS ON AT&T TALKS

The Open Software Foundation has named its permanent vice president of development at Unix Expo: he is Roger Gourd, who joins from Masscomp, where he was director of software engineering. Previously, Gourd worked as senior software specialist for RCA Computer Systems, and later joined DEC in the 1970s, where he was involved in the development of VMS: he has also worked as an independent consultant for clients such as Intermetrics, the United Nations, and the University of Florida. At the OSF, Gourd will be responsible for 250 to 300 technical staff currently being recruited, according to OSF president Henry Crouse. Initially, efforts are being concentrated on the development and delivery of the OSF's graphical user interface component. Last week's meetings between OSF and AT&T led to "letters of understanding" being exchanged between the two parties, according to an OSF spokesman, but no firm dates for any resolution have been released. As we went to press, speakers from both OSF and AT&T were due to speak at Unix Expo.

SUNRIVER CARD CONVERTS PCs TO FIBRE-OPTIC STATIONS

SunRiver Corp created quite a stir last year by taking a new approach to high speed bit-mapped graphics on multi-user systems (UX No 165), using fibre-optic links to provide full graphics capabilities on its own remote Cygma terminals connected to a 80386-based host. This was achieved through the high data transfer rate of 32 Mb/sec on the fibre optic links, and device driver support from Interactive Corp, Microport Inc and the Santa Cruz Operation's Unix implementations. Now the company has extended the concept further by allowing existing PCs to be connected to a fibre-optic system. PC LightCard is a full size card which fits into any available 8 or 16 bit slot, and allows PC users to run DOS applications on the PC and hot-key into a multi-user mode to run Unix/Xenix or multi-user DOS applications running on the host. The card's file transfer applications also allow high speed file exchange between the host and remote PCs. Up to four Cygma stations or PCs can be attached to each host adaptor on the host 386 machine. Currently supported on SCO Xenix System V, standard device drivers for the LightCard are currently under development for Concurrent DOS from Digital Research, Virtual Systems' Quick Connect and Interactive Systems 386/ix. The LightCard costs \$899, with \$799 for each four user host adaptor: full availability next month. And SunRiver has also introduced a new VGA+ version of its Cygma station with 800 x 600 resolution and 16 colours, which it hopes will take it into the CAD/CAM/CAE and desktop publishing markets. Cost is \$2,499 and availability is January 1989.

UNIFY 2000 TAKES UNIFY CORP INTO SPECIALIST DATABASE MARKET

Introduced on Tuesday at New York's Unix Expo was the first move by Unify Corp away from the general purpose database marketplace towards a new push into specialist markets with performance optimised products. According to Bill Osberg, Vice President of Software Development at Unify, the advent of the SQL standard database will result in all products being at least functionally fairly similar making it more difficult for the individual DBMS suppliers to differentiate their products. Osberg says that Unify will now be concentrating on specific hardware or specific markets, the first being Unify 2000, aimed at users handling large amounts of data on multi-processor systems. "Sybase has optimised its products for client/server operations, and has been successful in the financial marketplace, where traders and brokers using Sun workstations are doing lots of things at the same time. Now Unify 2000 is aimed at distribution and mail order companies, where there are millions of items held on a database catalogue, with people working on ASCII terminals taking orders". Unify is initially offering the system on Sequent hardware. The software is optimised for shared memory operation, says Osberg. The new approach has also led Unify to introduce an environment independent version of its Accell fourth generation language - Accell SQL, which will run under different user interfaces, such as MS-Windows, Presentation Manager, and eventually AT&T's Open Look. And the company has also entered into joint marketing agreements with rivals Sybase and Santa Cruz Operation to provide Accell on other database environments. The Sybase version will be available on Sun Microsystems' hardware, while SCO's Integra database is aimed at the 386-based PC marketplace.

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MARKETING IN THE GUISE OF STANDARDS?

Should the Open Software Foundation really be regarded as a standards setting organisation? Michael Tilson, President of software vendor HCR Corporation of Canada - which is currently applying for OSF membership - takes an alternative view.

The fog of commentary, marketing hype, and hysteria over the need for AT&T and the Open Software Foundation to merge has obscured the single most overlooked fact about OSF - it's a software vendor, plain and simple. And the idea that it could act as a replacement or substitute in Europe for X/Open, which has been suggested more than once, is bad. OSF won't even absorb some of X/Open's responsibility, which is good.

Fortunately, X/Open spokespersons themselves see X/Open as a real specifications body, while OSF is an "implementations" group. And that interpretation in itself says plenty about OSF's emergence as a marketing organisation second to almost none.

After the first formal OSF meetings in late summer, we've had a good look at "OSF in action". The Foundation has set up strong marketing activities, including ads, PR, etc. Why? And why is OSF on a crash schedule to pick a standard user interface even before the market has selected a winner? Why, in the name of establishing an open standard, is a "second Unix" being offered, just when Unix versions were starting to merge? Why could it be bad for the industry if AT&T and OSF merge their development activities?

Mission

OSF has been set up as an independent corporation. It's activities are useful, and membership appears to be worthwhile. The OSF staff are developing a sense of their mission, and a determination to accomplish it. OSF management is acting in good faith - but a key OSF characteristic is largely unstated.

My impression is gained from attending the first meeting, speaking with management, and hearing and reading the information distributed by OSF. Keep in mind that I am trying to read between the lines; you won't find an official OSF statement of purpose that agrees with my interpretation.

Forget about "foundation" and "not for profit" and "shared development effort" and "unifying the industry". OSF has a unique marketing strategy. It's a fascinating and laudable experiment attracting the deep interest of the entire industry. But we need to understand that the OSF management and organisation will not act as philanthropists. They are not like the rest of us - their organisational imperative is to grow in a selected market segment, like any other business. This is not bad, but it is different than many imagine.

There is considerable supporting evidence. Let's answer some questions from the viewpoint of OSF as a software vendor. For example, why the heavy marketing effort? We see extensive advertising, major public relations, market attitude surveys. All of this is well in advance of OSF providing any concrete member service or delivering any software. For a new non-profitmaking foundation acting as a benefactor to the industry, its inexplicable. But for a new software vendor building image in order to carve out future market share, it makes plenty of sense.

Why the panic to choose a user interface? Only now is open windowing technology reaching a significant number of Unix users. There are many good contenders, but none have yet had a chance to be endorsed by the market. If OSF represents an industry consensus to standardise on an interface, its too early. The market hasn't spoken. A group of only four OSF staffers will examine 23 proposed technologies, take input from members, and make a decision in only 60 days.

If they can't decide in that time, the OSF president will choose. For an organisation setting shared industry standards, it's not easily explained. But for an aggressive new vendor, there is an obvious need to grab market share by moving quickly with an early product.

Reluctance

Why introduce AIX, seen as yet another version of Unix? Especially disturbing to independent software vendors is the reluctance to commit to binary compatibility with existing Unix standards on mass market chips such as the 80386. Wouldn't it be more open to allow plug and play software applications on this popular architecture, since all 386 vendors now agree on one standard? The technical obstacles are trivial. But if OSF is a software vendor, it makes sense to seize the initiative from its competition (AT&T and Sun) and sell "OSF-ix" as a new, incompatible wave of the future.

Will OSF be the central source of supply for standard "open platform" software? Listening to the OSF presentations, one quickly learns that the Foundation presumes it will. The OSF pitch involves the whole industry saving efforts by coming together around shared development. In this scenario, OEMs will differentiate themselves only with proprietary applications, but will share OSF operating system and tools. Is this realistic? Certainly, those OEMs must conform to open systems. But given a standard, there is no reason to think either should be the only implementation. OSF has ambitions in operating systems, networking, compilers and other areas - all platforms rather than applications. But in the world of pre-packaged software, these comprise the majority of revenues. Will the rest of the industry roll over and play dead to make room for OSF? I don't think so.

Quit

One good illustration is the OSF competition to select a Mac-like Unix user interface, with companies offering technology including DEC, AT&T, HP and Adobe. Without a market leader, do any of us expect the losers to write off their investments and quit? Once people see OSF as a software vendor, it will have to compete just like other vendors. Even the OSF founders are not obligated to buy from OSF.

There are other ways in which OSF behaves like a software vendor. At the first general meeting, there were some indications that OSF was considering licensing software specifications on a per CPU basis. In effect, anyone trying to follow a standard set by OSF without buying OSF software might find themselves the target of a suit. This is not and won't become OSF policy. but it is a strange situation for a standards body to contemplate.

On the other hand, it is far from unusual for a proprietary vendor to think this way. OSF, whether or not it is "not-for-profit", can be run like a business with an operating surplus fed into expansion of activities, including philanthropic activities such as the OSF Research Institute. It wouldn't be surprising to find competing vendors one day contesting OSF's tax exempt status.

In sum, OSF benefits the industry by keeping the original vendors of Unix honest. If AT&T and OSF merge, we'll be back to the original single-source situation. And talk of the OSF replacing X/Open is in nobody's interest, and won't be, even when some of the results from the consortium begin to show up on either side of the Atlantic.

THEOS 386 SUPPORTS 128 USERS ON AN 80386 MACHINE

The Theos 386 multi-user, multitasking operating system from Theos Software Inc, Walnut Creek, California is finally commercially available although the company has been touting the virtues of the thing for over a year now (UX No.143). Theos is the direct successor of Oasis, which started out on Z80 machines and graduated to the iAPX86 family, and was renamed in 1985 after legal hassles (UX No 43). The new version addresses up to 4Gb of physical memory, and up to 64Tb of virtual, uses the 386 protected mode and can support up to 128 users on an 80386 machine. The company is also offering Theos.C, which it claims enables C programs written for Unix and MS-DOS to be recompiled and run on machines running Theos, which also implements a hierarchical directory structure said to be Unix-like. A Cobol for Theos was in the plan a year ago, as was a windowing environment. Single-user Theos is \$400, a development kit is \$1,600; it is sold here by Midshires Computer Services, Crewe.

FUJITSU STICKS WITH AT&T UNIX - ADDS NEW WORKSTATIONS

Fujitsu Ltd has released four new models of its G10 series workstation, the new ones all based on the Motorola 68030 chip; the top end G160 has 32Kb cache and is claimed to be 2.5 times faster than the 68020-based G150, at from \$7,800 to \$11,730; the company looks to sell 100,000 over three years. Sources in Tokyo say that Fujitsu was siding with AT&T Co in the battle for the soul of Unix (UX No 202) as long ago as last May: the Japanese company rationalises its preference by pointing out that its own Unix version is licensed from AT&T through Amdahl Corp, it buys workstations from AT&T's partner Sun Microsystems - plus it believes the AT&T version of Unix will prevail in the market; needless to say, the arch sibling rivalry between the two meant that if Fujitsu backed AT&T, Hitachi Ltd had to become an Open Software Foundation sponsor.

HEWLETT-PACKARD SQL DATABASE MIXES OBJECTS WITH ITS RELATIONS

Hewlett-Packard Co has been nursing an odd combo in its Palo Alto, California, research dens that may prove just the ticket for graphics-intensive database chores like computer-aided design, computer-aided software engineering, and corporate publishing, reports Microbytes. Known as Iris, Hewlett-Packard's prototype database mixes object-oriented programming methods and Structured Query Language with relational algebra to produce a distributed database system. This technology, which Hewlett revealed at an object-oriented-programming conference in San Diego, California this month, could enable database management systems not just to store information, but to spot flaws and inconsistencies in the information as well. Key to the real-world potential of Iris is its SQL module.

RACAL-REDAC ADDS ASIC DESIGN TO VISULA CIRCUIT BOARD PROGRAM

NEC Electronics UK and computer aided design specialists Racal-Redac Systems Ltd, Tewkesbury, Gloucestershire have joined forces to add application specific integrated circuit - ASIC - capability to Redac's Visula Plus design system. The two companies have agreed to incorporate the block libraries of the NEC CMOS4 gate array family of 1.5 micron dual-layer metal CMOS ASICs onto Redac's system. The validated libraries will be maintained and supported by NEC and additional libraries, including CMOS5, BiCMOS and ECL, are due to be added early next year. It is estimated that up to 50% of all ASIC designs require subsequent reworking as design tools do not always ensure that the chips designed will work within an actual system. However Redac claims that by using the same suite of computer-aided design and engineering tools for the complete design cycle at both the board and the ASIC level, individual ASICs can be designed and verified within the system. To ensure the timing of the manufactured array is correct, back annotation of layout parameters into the simulation data is included, which takes account of timing changes introduced during the layout stage due to the wiring between functional blocks. Visula Plus, which runs on Apollo Computer, DEC, Sun Microsystems and NEC workstations, has traditionally been regarded as a printed circuit board design system. However Redac says the system has recently been used to produce ASICs at NEC's silicon foundries in Japan in response to an evaluation order from Redac's parent company Racal Electronics Plc. NEC is hoping to improve its European ASIC sales through the agreement; total ASIC turnover was \$570m last year, with Europe accounting for only \$12m. But it is not an exclusive deal, and Redac admitted last week that it was talking to other interested ASIC manufacturers.

WICAT SYSTEMS OFFERS OPEN ARCHITECTURE LEARNING SOLUTION

Wicat Systems Inc created the misleading impression in the early 1980s that it was primarily a Unix systems vendor, because the Orem, Utah company was building a 68000 machine on which to offer its proprietary applications, and thought it could make a bit on the side by offering the thing as a general-purpose near-Unix machine. But the Unix market soon took off in a big way and companies with much more muscle came to dominate it, and Wicat was forced to retire hurt and concentrate on its original mission - integrate and market computer-aided education systems. The name does, after all stand for the rather grand World Institute for Computer Assisted Training, and Wicat is a much happier company now that it is concentrating exclusively on its original mission. It still builds its own 68020 machine, but uses it only as a file server, and may ultimately replace it with a bought-in Unix machine. Its strategy now is to put the training database onto the server, but to run most of its software on MS-DOS or OS/2 micros, and last week, it brought the concept together with the Open Architecture Learning Solution to provide true integration of standard micros and off-the-shelf course ware in a "total learning solution".

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FPS Computing - Beaverton, Oregon-based Floating Point Systems Inc - is to cut its local workforce by about 85 and will thus see a larger than expected fourth quarter loss.

- 0 -

That Japanese oddity, a software house, **Asisuto Inc**, headed by an expatriate American, Bill Totten, has joined the Independent Software Vendors division of X/Open Ltd, so that it can contribute its expertise in the area of Japanisation techniques, which will be essential for world-wide standardisation of Unix applications; Ashisuto is the second software house in Japan to ally with X/Open.

- 0 -

Verdix Corp of Chantilly, Virginia has a joint technology agreement with Sun Microsystems Inc to produce a series of Ada language products featuring a development and debugging interface tailored to the window environment: the Verdix Ada Development System will also be integrated with the Sun Network Software Environment, and will be available on all three Sun workstation families - Sun-3, Sun-4 and 386i.

- 0 -

Judge Robert Aguilar has decided to drop the Apple Computer vs Microsoft and Hewlett-Packard suit - but it's nothing to do with his son's place of work, simply that he and Judge William Ingram have 500 patent infringement cases stacked up and the San Jose courtrooms are booked solid until about 1999, so the NewWave-Windows suit is going up to Judge William Schwarzer in San Francisco, who is scheduled to meet the lawyers on November 10.

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Informix Software Inc says its Informix-4GL will support DEC's VAX Rdb/VMS from second quarter 1989.

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Intergraph Corp, Huntsville, Alabama has added the InterPro 3070 to its line of Unix engineering workstations. The C300 Clipper-based 3070 comes with a new, 27" colour display, putting up 2m pixels, compared with the 1m of high-res 19" screens. The 10 MIPS CPU comes with 16Mb to 80Mb memory and 355Mb disk expandable to 4.7Gb; no price.

Sun Microsystems now has the first models in its desk-side Tempest workstations and servers, radiation-protected versions of the Sun-3 160, 60 and 260, and the Sun-4 110, to go with its secure version of Unix (UX No 203).

- 0 -

Emerald City Software Inc, Menlo Park, California, says it is preparing DisplayTalk, a complete Display PostScript development environment, for NeXT Inc's NeXT Computer System: Displaytalk "will provide an object-oriented approach to PostScript development and take advantage of the NextStep software system, with in-context source language debugging, stack and variable tracing, dictionary browsing, and pswrap generation capabilities"; it is due for first quarter 1989 release; Emerald City was formed in 1987 by refugees from NeXT itself.

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Electronic publishing software specialist **Interleaf Inc** is expanding its European operations, Interleaf has opened a European support centre in Hoofddorp, the Netherlands, and has established Scandinavian operations out of Kista in Sweden.

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Apollo Computer Inc is on the offensive with what it calls the "Series 10000 Challenge" campaign aimed at highlighting the Apollo Personal Supercomputer's "lead in standard performance ratings in head-to-head comparisons with leading competitive systems": Apollo is inviting Sun 4/260 and VAX 8800 users to take on the challenge at sites on the East Coast - at Apollo corporate headquarters - and the West Coast - at Apollo's Santa Clara, California from November 1 to November 14, offering them the opportunity to load their Sun 4/260 and VAX/8800 programs on a Series 10000 and see how they run.

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Intel Corp must shortly lift the last of the veils off the 80486 - certainly if **Apricot Computers Plc** is to have a machine out using it early next year as it promises.

- 0 -

Acer Counterpoint Inc, San Jose, California reports that a team consisting of itself, TRW Information Networks Division in Torrance, California, and SSDS in Denver, has bested IBM, DEC and Sun Microsystems to win a contract to automate the US Naval Academy using 42 System 22E multiprocessor, multi-user Unix micros, linked by local-area networks designed and constructed by TRW: the value of the initial increment of the contract is \$6.5m, \$15m in all.

Cypress Semiconductor and its Ross Technology Sparc company have mollified Advanced Micro Devices over their hiring of AM29000 RISC engineer Raju Vegesna. AMD gets limited rights to inspect Ross' RISC work.

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Over the next nine months, DEC will be bringing out new computers to replace about 70% of its current product line, Ken Olsen told the Wall Street Journal: these should include the MIPS RISC-based workstations, the bottom end Personal VAX, and probably towards the middle of 1989, the long-awaited and problematic SuperVAX at the top.

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Sun Microsystems Inc is to split its shares two-for-one on December 20 for holders of record on November 28: it will have about 83m shares outstanding after the split.

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Tandem Computers Inc founder and chief, and Hewlett-Packard Co alumnus Jim Treybig - he really was the one that got away because he quit his alma mater after Hewlett decided not to pursue his fault-tolerant computing dream - has joined the board of MIPS Computer Systems Inc in Sunnyvale: it is the first outside directorship of a computer company that Treybig has accepted.

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Sun Microsystems Inc yesterday confirmed that it will invest \$20m in Linlithgow, West Lothian to build its first manufacturing plant outside the US, and expects to employ 300 people there by 1991: Europe now accounts for 21% of Sun's turnover.

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Adobe Systems Inc, Mountain View, California has licensed full rights to its PostScript language interpreter to Hewlett-Packard Co, but says significant revenues from the agreement are not expected to be show up in Adobe profits till 1990.

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And the workstation family built by DEC around the MIPS Computer Systems Inc RISC must be fairly imminent, with the Personal VAX not too far behind.

- 0 -

According to the Boston-based research organisation the Aberdeen Group, 1992 is the year mooted for Emerald - the name used to describe the reluctant but inevitable merging of DEC's VMS and Ultrix operating environments.

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ARCHER GROUP PREPARES FOR MAJOR LAUNCH NEW MEMBERS MAY BE REVEALED

The Archer Group of AT&T Unix V.4 supporters, which emerged last month after hitches in talks between AT&T and the Open Software Foundation (UX No 203), is planning a major international launch of its proposed industry association over the next few weeks. The launch, which in initial plans has been scheduled for November 29th, will involve a satellite link-up between New York, London and Tokyo, and will be followed by a media tour by the group's newly appointed President, according to sources close to the Archer Group. Interim President is Don Herman, ex vice president at NCR, but a permanent appointment is expected to be announced in advance of the main event possibly at the giant Comdex show next week in Las Vegas. The same sources suggested that new members of the group would be revealed at the launch; specifically Texas Instruments, Xerox, Compaq and Nixdorf, although this could not be confirmed with the companies in question before going to press. TI and Xerox are obvious additions, due to their support of Sun Microsystems' SPARC processor, but Nixdorf is currently a sponsoring member of the Open Software Foundation, and could cause a major stir if it chose to re-align itself with the Archers. Meanwhile, talks between AT&T, the Archer Group and OSF are said to be "continuing, although not on a daily basis", according to an AT&T spokesman. The OSF is understood to have sent details of its technology licensing terms to AT&T, and the Archers are defining what other features they require beyond the V.4 base. Both parties are discussing how, given two kernels, compatibility could be achieved.

MOTOROLA TAKES XDOS MS-DOS-TO-UNIX CONVERTER

Motorola Inc has now picked up the XDOS utility that enables MS-DOS applications to run efficiently under Unix, and says it will bundle the XDOS binary compiler with each System V.3.2 and V.4 version that it sells for both the 68000 and 88000 microprocessor families. XDOS, from Hunter Systems Software Inc, Mountain View, California is claimed to be the most efficient means yet of harnessing the mass of MS-DOS applications for Unix, and was described in detail in UX No 177 - the 88000 is presumably the "other RISC" for which Hunter was doing an implementation, one for the Intergraph Clipper having been agreed upon (UX No 179). MS-DOS applications are claimed to approach the speed of native ones by virtue of of binary compilation: XDOS consists of a binary compiler, which takes iAPX-86 binary code as its source and generates executable binary to run on the target microprocessor, and the XDOS PC interface library, which provides the link from the MS-DOS environment to the target machine's operating system.

CHIP DELAY HITS EVANS & SUTHERLAND SUPERCOMPUTER

Evans & Sutherland Computer Corp has run into big trouble with its ambitious plans to develop a scalar scientific supercomputer aimed at the low end of the Cray Research Inc line, announced in April (UX No 175). The company's plan was to put together a machine that would integrate up to eight 16-processor complexes, each processor to deliver half the power of a 3090 in scientific work. But the project has had to be put back by at least six months from the planned launch date of next month, driving the Mountain View, California firm into the red because Control Data Corp's troubled VTC Inc chip subsidiary has failed to produce the key custom circuit successfully. Electronic News says that National Semiconductor Corp and Hewlett-Packard Co have now been brought in to help VTC, and Evans' other supplier, VLSI Technology, which has produced two chips successfully, to complete the programme. The company is delighted with its design and happy that the problems will be overcome.

SONY LOOKS AT RISC

Having established a foothold in Unix workstation market with its 68000 family-based News line, Sony Corp wants to shoot the line up-market with a RISC-based top-end, but it has not yet decided whether or not to go for the Motorola 88000. It said in New York last week that it was also looking at the RISC chips from Advanced Micro Devices Inc, MIPS Computer Systems Corp and Sun Microsystems Inc -and may seek to make under licence whichever chip it decides to use. Sony reckons that the workstation market is still immature, and liable to undergo major technical changes.

MOTOROLA, HARRIS "EYE GOULD"

Nippon Mining Co made little secret of the fact that it was unlikely to hang on to supermini manufacturer Gould Computer Systems Inc, the first indication being that Gould president James Macdonald was saying only a day after the agreed bid was announced that he might seek to take the business in a management buyout (UX No 196). Now two names are cited as possible buyers Motorola Inc and Harris Corp, neither of which is very surprising since Motorola has decided to pull out all the stops to expand its computer business, and Harris Corp, which lives just down the road from Gould's Fort Lauderdale base in Melbourne, Florida, needs to achieve critical mass for its computer business if it is to survive. But according to Electronic News, Motorola may mainly be interested in Gould's Tempesting military computer business, while Harris may want to close down the manufacturing side and seek to wean Gould's customers over to its own machines. Meantime, to facilitate a sale, the division has been split in two, with a General Computer Division in San Diego for the company's proprietary top-end machines, and a Computer Systems Division in Fort Lauderdale concentrating on real-time Unix systems. The Gould computer business would offer one of the few opportunities for Europeans such as GEC Plc and Norsk Data A/S to get into the US computer market, but so far, only Siemens AG has reportedly shown interest but walked away from any deal.

COMPUTER VIRUS SPREADS TO THE UNIX WORLD VIA ARPANET

"We are currently under attack...." was the message sent out across the US by a besieged computer scientist at Berkeley University in the early hours of last Thursday morning, November 3. The assailant was a computer virus which caused the most extensive penetration of computer systems yet known by this type of intrusion. Upwards of 6,000 computers were immobilised from late Wednesday evening and onwards by a self reproducing program which choked up memory banks, panicking US Defence departments, corporations and universities across the country. A full scale review of computer security in the US is expected as a result, and a post mortem conference is already planned in Washington this week.

The virus was transmitted by 23 year old Cornell University graduate Robert Morris, son of a well known US computer security scientist, into the Internet communications network via Arpanet at Massachusetts Institute of Technology, a computer network linking thousands of systems at corporate research centres, universities and military facilities. The virus, a piece of code, was supposed to travel slowly and secretly through networks, spreading by means of a designer, which should have been wiped out when the service was set up. Apparently a bug in the virus program made it replicate many times faster than intended and by the time a remedy was sent out the lines of communication were far too loaded for it to be received - or had been closed down as a defence. Instead, technicians across the US spent hours devising blocks and traps to counter the attack, which was thought to have been contained within 24 hours of its outbreak. This was a tentative estimate however because the "worm", as it was dubbed, had a tenacious ability to recall itself over and over again even when a system appeared to have been successfully vaccinated against it. Fortunately for those concerned the worm does not appear to have turned. Although swamping the memory of its host system, there have been no reports of it destroying or damaging files in any way. Had it been intended to perform such actions, the consequences would have been incalculable. In the past viruses of this kind have mostly been restricted to the IBM PC and Macintosh world, but in this case it was the Berkeley version of Unix running on DEC and Sun Microsystems hardware that was particularly vulnerable because of a peculiarity in the electronic mail facility. There are no reports of the virus spreading through international networks, University College London being the European focal point of Arpanet, but in at least some cases UK systems administrators were warned not to open 'Christmas presents' in E-mail services!

CULLINET ENTERS UNIX MARKET WITH ENTERPRISE;DB, AT&T PACT

Cullinet Software Inc duly made its formal entry into the Unix market yesterday (UX No 203), and revealed a big contract with AT&T CO. Its Unix offering is Enterprise:DB for Unix, a production relational database system with full support for ANSI SQL, based on the former IDMS/SQL for DEC's VMS. Features include determination of the optimal access path to data at compile time, rather than execution time, and the initial release runs on Sun Microsystems Sun-3 and Sun-4 workstations and on the IBM RT. It supports C and Fortran and is set for first quarter 1989 delivery at from \$4,800 to \$91,800, depending on configuration. The AT&T pact - no value - is for software from the Cullinet Enterprise Computing family to enable AT&T software developers to create applications for multiple environments - Unix, PC-DOS, MVS - without the developer needing to learn more than one environment.

LSI CRAMS "TWO VAX 11/780s" ONTO 200,000 GATE ASIC

LSI Logic Corp, Milpitas, California is highly delighted with "the industry's first" cell-based custom ASIC technology capable of integrating 200,000 equivalent logic gates on a single chip - sufficient to implement the complexity of two DEC VAX-11/780s processors on a single chip. Named for its 0.7-micron CMOS channel length - equivalent to 1 micron gate length - the LCB007 is a member of the company's family of cell-based custom circuits where all layers of the chip are customer specified from libraries and compiler design tools. The part also enables fast static RAM and ROM of up to 144K-bits and 1M-bit respectively to be used as building blocks within the chip. A standard two-input NAND gate has a typical propagation delay of 450pS, and internal toggle rates can exceed 250MHz, so that in some cases it could be used in place of ECL. Designers will also be able to embed core RISC microprocessors such as the ones from MIPS Computer Systems Inc and Sun Microsystems - both available from LSI both as standard parts and as ASIC designs - into their chips. The company reckons that by combining a 32-bit RISC megacell with 30,000 gates of random logic and more than 4Kb of RAM and 64Kb of ROM on a single ASIC will enable a designer to create a system with the performance of a Cray supercomputer in a laptop box if he adds LSI's floating-point accelerator and write buffer. LCB007 cell-based ASIC wafers will be fabricated at Santa Clara, California; Tsukuba; and Sidcup, Kent, and LSI Logic's GmbH's Braunschweig, West Germany, plant will play a key role in assembly and test of finished devices. Design libraries will be out this quarter, and first customer prototype LCB007s arrive mid-1989.

APPLE GEARS UP FOR MAJOR FAR EAST PUSH

Apple Computer Inc is expanding its Apple Japan Inc operations in order to provide itself with a stronger base to expand its sales in the whole Asia-Pacific region, which grew 64% last fiscal year, against 53% overall. It is looking for Japanese sales to reach \$500m by 1992, half of the total revenue target for the Asia-Pacific region, which includes Canada, Australia, and South America as well as South-East Asia. Ambitious Apple is also looking to be a 10 billion dollar firm worldwide by 1992. The second-phase marketing drive in Japan includes new initiatives such as co-operation with third-party developers and dealers, and establishment of a research and development unit - now operational - in Tokyo.

AKHTER AIMS REGENT AND SOVEREIGN MICROS AT EDUCATION MARKET

British computer manufacturer Akhter Computers Ltd based in Harlow Essex, has been showing off their newest products at various locations around the UK in the course of its "educational roadshow" of Universities. Regent is the first of a planned series of multi-user Unix systems. The four and eight port models which retail at £3995 and £7995 respectively are aimed primarily at the small business market. Soon to follow is the Sovereign series, based on Altos kit, which will add mid-range systems and Ethernet capability to the Akhter range (UX No 191). Akhter has also announced the addition of the PC100 to their PC series which uses an 8088 processor and retails at £549 for the basic model through to £1195 for the top of the range system. The company says it has had a great deal of interest from UK academic institutions, which it expects to attract with an aggressive discount schedule.

SCHLUMBERGER CLAIMS FIRST WITH CAD ON THE MAC

In an effort to increase its penetration into CAD/CAM markets, and broaden its reputation as a scientific software supplier, Schlumberger CAD/CAM Division has announced that two of its software packages will be available on Apple Macintoshes under A/UX Unix by the first quarter of 1989. Schlumberger says Modeler and Detailer will be the first workstation class CAD/CAM products for Mac IIs; they are currently available as part of Bravo3 for VAXes, VAXstations and Sun workstations and will be relaunched under the MacBravo name. Schlumberger says Mac users have the same features as Bravo3, but with the benefit of an improved user interface. Modeler is task-optimised for three-dimensional mechanical design, Detailer a mechanical detail draughting product primarily for engineering and manufacturing drawings. The new MacBravo applications from Ann Arbor, Michigan-based Schlumberger CAD/CAM are also able to exchange information with Bravo3, and Schlumberger is further encouraged by the increasing use of workstations for CAD/CAM applications, and the growing use of Macs for such operations. Distribution will be through a limited number of CAD/CAM specialist resellers; talks are nearing conclusion with Desktop Engineering Systems for UK distribution. Prices are £1,500 for Modeler, £2,000 for Detailer and £500 for IGES, the initial graphics exchange standard method of exchanging data; all three, bundled as MacBravo Design cost £2,750.

ANOTHER \$100m FOR APOLLO FROM MENTOR

Mentor Graphics Corp, Apollo Computer Inc's biggest single customer, has given the Chelmsford, Massachusetts workstation builder another \$100m 18-month contract covering much of the Apollo product line. The agreement includes the Series 10000 Personal Supercomputers, and the Series 4500, 3,500 and 3,000 workstations. Not surprisingly, Mentor was among the first Apollo customers to get the Series 10000.

SYBASE ADDS TWO NEW FRONT-ENDS

Transaction-processing database specialist Sybase Inc has launched two new front-end application development systems for its SQL client/server relational database: Fast-build for character-based terminals and APT-Workbench for bit-mapped workstations and window-based systems. Fast-build, based on technology bought-in from Dutch software house Inside Automation BV is aimed at "computer literate end-users" and runs in DOS, Unix and VMS environments: Sybase claims the software achieves a PC quality interface on ASCII terminals including zoom and pop-up windows, but is working on a bit-mapped graphics version due next March. Fastbuild allows access to other file systems and databases (Oracle, Informix etc), while retaining high availability and data integrity. It includes built in text-processing, forms handler, menu designer, data dictionary and enquiry language. APT-Workbench is a more sophisticated "professional programming tool" for designing, prototyping and running applications interfacing to the Sybase SQL server, and features an object oriented 4GL for Sun and DEC hardware. The company has also licensed the Accell development environment from Unify, and is currently completing work on a version of its SQL Server optimised for OS/2 networks in conjunction with Microsoft Corp and Ashton Tate (UX No 163).

THOMSON COMPUTERS HAS NEW MULTI-DATABASE SEA-CHANGE SYSTEM

York-based Thomson Computers has enhanced its Sea-Change fourth generation application development system by providing a multiple file access facility which will enable users to access more than one type of database, and combine data from these separate sources into one report. Multi-Database Sea-Change, which comes hard on the heels of its new generation of Sea-Change accounting systems launched in June of this year (UX No 185), works with industry standard file systems such as C-ISAM, Informix and Ingres as well as Thomson's own X-ISAM. Managing Director Neil Thomson said the system had been developed as a direct response to the problems users face when running a variety of operating systems requiring different relational databases on different machines. It presents a single interface to the user who is able to develop local applications and use data from existing applications held on one or more relational databases. The product will be made available in several stages, initially providing an ability to develop applications in Sea-Change which will integrate with either Ingres or Informix databases. New applications are planned, including French and German language versions. The Multi-Database Sea Change Applications Generator costs £2,200 on the ICL CLAN 4. Multi-database facilities were apparently an important requirement for ICL, which has now signed a joint marketing agreement with Thomson, for worldwide marketing rights to Sea-Change on its ICL CLAN and DRS UNIX-based machines. ICL will market the product via its direct sales force.

COMPUTER CONSOLES SEEKS TELEPHONE ALLIANCES IN EUROPE

Computer Consoles Inc, which markets its Unix-based office automation systems direct and through OEM customers such as ICL in Europe, used to be better known as a supplier of computing systems for automating directory enquiries for telephone companies, and the latter activity remains a very large part of the Waltham, Massachusetts company's business. Up to now, the telephone systems side of its business has been represented in Europe by STC Plc, but Consoles is now scouring Europe for strategic alliances with other phone companies, says chairman John Cunningham. Cunningham looks for Europe to overtake the US over the next five years in the breadth of telephony services offered to business and domestic users. Hottest property is its Audio Response system for its directory computers, and it is holding discussions on the system with Telefonica de Espana next month. Talks have also been held with telephone exchange suppliers Siemens AG, NEC Corp and L M Ericsson AB on achieving technical compatibility between their switches and its systems to pave the way for increased service sales. Cunningham sees a boom in demand for services such as intelligent answering services, selective routing of calls and advance information on who is calling. Cunningham cited four key factors driving demand in Europe: the speed at which PTTs are digitalising their networks; the greater adherence to standards in Europe; greater flexibility of regulatory controls, and the stimulus of the 1992 Single Market prompting PTTs to increase the services on offer.

BIPOLAR ADDS FPS TO CUSTOMER LIST - BUT LAGS BEHIND WITH ECL SPARC

The ECL RISC processors that form the basis of FPS Computing's new Model 500 multi-processor launched last week (UX No 204) turn out to be the same chips used by Apollo Computer in the Series 10000 personal supercomputer, Alliant Computer Inc's FX40 and FX80 systems, and the HP Series 9000 Model 835. The B3110A floating point multiplier and B3120A floating point arithmetic logic unit, along with five port register files, come from Beaverton, Oregon-based Bipolar Integrated Technology Inc, the company currently working on an ECL version of Sun Microsystems' SPARC processor, and are used for both the scalar and vector cpu boards within the FPS 500. Elxsi Corp of San Jose is another customer, using the chips in its Pegasus Superframe (UX No 167). Meanwhile, Les Soltesz, BIT's vice president of marketing, revealed that its BIT1 ECL Sparc was running behind schedule, and would not now be unveiled by the end of the year (UX No 137). "We're close", said Soltesz, "but we're now looking at a product introduction during the second calendar quarter of 1989". BIT is also working on a higher performance BIT2 version: both products are destined to be used in future Sun workstations as well as being sold on the open market.

SOLBOURNE GEARS UP FOR JANUARY LAUNCH...

Longmont Colorado's Solbourne Computer Inc, which announced plans last September to base a new range of super-workstations around an ultra large scale integration (ULSI) version of Sun Microsystems' SPARC processor (UX No 195), is gearing up to introduce its first products as early as January 1989. Last week the company opened area headquarters with sales offices in San Jose, Chicago and Boston, and sales offices in Denver, Minneapolis and Syracuse. Two more offices are planned for Washington DC and Los Angeles. According to David McDonald, senior vice president at Solbourne, beta testing is now well under way and has been "very successful", with early customer shipments beginning in December. Solbourne has also announced a distribution deal with Template Graphics Software Inc, San Diego, California, for its Figaro implementation of the Programmer's Hierarchical Interactive Graphics System (PHIGS) standard. Funded to the tune of \$50 million, Solbourne now employs around 100 staff, and is developing its ULSI version of the SPARC in conjunction with Japanese giants Matsushita Electric Co for use in the Sun-4 compatible, multi-processing workstations.

...AS MATSUSHITA READYS ITSELF FOR 80386 WORKSTATION PUSH

Matsushita Electric Industrial Co has four new Unix workstations, all based on the Intel 80386, and plans to start marketing them next spring: the BE series consists of a diskless machine with an Ethernet interface; a desktop machine that can be used as an MS-DOS computer, running Panacom M software directly; a desktop publishing system, equipped with a 1,312 by 1,312 display; and a deskside machine capable of holding up to 1.5Gb internal Winchester storage; all four have 32Kb caches and run Unix System V Release 3.2, including X Window and Sun Microsystems' Network File System; up to four 80386s can be installed in a single machine for concurrent processing.

CONTROL DATA WINS \$12.6m CHINA, \$16m ETA COMPUTER PACTS

Proving that, despite the gloom, it can still win orders for its computers, Control Data Corp has announced a \$12.6m contract from the Chinese State Meteorological Administration in Peking for a top-end Cyber 992 with a Cyber 962 front-end to process real-time data from the People's Republic's first weather satellite. The order also includes 13 Cyber 910 Silicon Graphics-sourced workstations. And its ETA Systems unit in St Paul, Minnesota has eight new contracts for air-cooled ETA-10 models, worth more than \$16m all told. They are from TRW Inc, Ford Motor, the US National Space Flight Centre, a facilities management deal in Stockholm, Pulsonic Technology Corp, Calgary, Alberta, and Professional Geophysics, Houston. US spooks want the eighth one.

PROLOG SPAWNS NEW LANGUAGE FOR PARALLEL PROGRAMMING

Watford based Artificial Intelligence Limited has previewed a new general purpose programming language aimed at developing software for all classes of concurrent computers. Strand88, shown last week at the ITEX 88 Exhibition in London, is the first commercial implementation of the Strand ('Stream-And' parallelism) language, and becomes available in February 1989. It is the result of a development project into programming parallel architectures. The language enables applications written in sequential code such as FORTRAN on a concurrent computing environment such as a workstation, to be ported to parallel architectures for processing with little or no effort, according to AI. Furthermore, re-programming only needs to be done once to cater for parallel processing during the life of an application, and allows the programmer to ignore the physical architecture of the delivery hardware. Testing of the first Strand 88 release is currently taking place at Intel Scientific Computers in Beaverton, Oregon and Argonne National Laboratory in Illinois. An unspecified UK telecommunications company, a university and a US aerospace company are also said to be involved in the testing and AI intend to use Strand 88 to teach parallel computer programming at two US universities next year.

Prolog, Parlog and Lisp

The Prolog language, and its Parlog extension, have provided the stimulus for the development of Strand, which combines features of each. It can run on stand-alone or multi-user networked workstations, supercomputers, and can extend into a LAN if supported by the target system environment. At present versions are available for Sun 3 and 4 series workstations, Atari Transputer Workstations (ex-Abaq), Transputer Plug-in boards that have Helios support, all Intel iPSC/2s, and System V UNIX/80386 workstations. In addition, AI also announced the results of benchmark tests which it says prove that iPSC/2 LISP, a message passing implementation of Common LISP allowing it to run in parallel, runs Lisp 2.4 times faster on a 32 node IPSC/2 supercomputer than on a Cray XMP. It was developed in a joint venture between AI Ltd, Intel, and Lucid Inc., California. The AI industry has always been a heavy user of computer power, and David Butler, MD of AI Ltd, says that combining Lisp with traditional applications, given the price and performance advantages of concurrent computing, allows a more flexible and powerful approach to problem solving in speech recognition and three dimensional object recognition. It supports lower level message passing of the iPSC/2, and as such joins C, Fortran and ADA in the Concurrent Workbench collection of software tools for the iPSC/2. Expert systems, production systems, natural language translation and understanding, planning, scheduling and non numeric simulation are the likely applications for iPSC/2 Lisp.

STRATUS AND MOTOROLA TO COOPERATE IN RACE TOWARDS CIM

Stratus Computer Inc and Motorola Computer X Inc revealed last week that they are to jointly market a factory automation system intended, in the words of Stratus' William Thompson to "bridge the gap between the islands of automation" in the technological race toward computer integrated manufacturing. The platform is intended to provide manufacturers with a single point of control over their plant operations and consists of Stratus fault-tolerant XA2000 Continuous Processing Systems and Motorola Computer X real time distributed computing systems, integrated by an Ethernet network connection. It is designed to manage dynamic factory environments with a single view of the manufacturing process. It combines the real time features of Computer X, its distributed architecture, standard VMS bus and support of third party UNIX applications with the XA2000's SYBASE/SQL capability to process on-line area and plant applications and to communicate with minicomputers and mainframes running engineering and business applications. The platform is seen as an advanced way to integrate customer demands, engineering changes, materials, machines and manpower within one framework. It is intended to overcome problems usually associated with Computer Integrated Manufacturing such as the time and expense in developing application software and difficulty of modification to meet changing conditions. An interprocess communications model to aid systems integrators and end users in developing applications for the platform is in place, employing an easy programming methodology and high level languages. SBI corporation Fort Wayne Indiana, is the first systems integrator to provide applications software for the platform, and demonstrated a prototype which can be tailored to fit a manufacturers unique requirements in October at Autofact '88, Chicago. Motorola Computer X, a Motorola New Enterprises company based in Schaumburg Illinois, and Stratus Computer Inc, Marlboro Massachusetts, are to market the platform worldwide under a non-exclusive agreement through systems integrators and OEMs, although Stratus' direct sales force will also market the platform directly to end users. It is aimed primarily at the international telecommunications and governmental markets.

PHILIPS ADDS CD-ROM DRIVER FOR MULTI-USER SYSTEMS

Understandably keen to exploit the compact disk technology it pioneered in all sectors of its business, Philips Telecommunications and Data Systems Division integrated CD read-only memory drives into its PC range earlier this year. Now it is looking towards multi-user systems, and in conjunction with its one to five user P3400 box and the SCO Xenix operating system, has implemented an extended file management system for Xenix, allowing users to retrieve data from a CD-ROM from any of the attached workstations. The P3400 is a PC-based system aimed at small businesses, and can incorporate up to five satellite workstations connected to the central processor. The CD-ROM is connected to the central PC as a standard peripheral. Philips says it now offers hardware, software and support for CD-ROM installations, as well as mastering and distributing the disks, which it does in cooperation with Du Pont Optical Company in Hanover, West Germany.

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Intersystems Corp, Cambridge Massachusetts, which announced its first implementation of MUMPS under Unix last June on Altos hardware, was demonstrating the M/SQL system on machines from Sequent, Motorola, Philips and Compaq (SCO Xenix) hardware at the MUMPS user group meeting held in Brussels last weekend: the company has also beaten DEC with a symmetrical multi-processing version for top-end VAX clusters running VMS.

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Reuters Holdings PLC says it has received a letter of intent from the National Westminster Bank for a \$16 million trading room installation: the Triarch 2000 system will include 400 Sun workstations for Nat West's new banking and treasury operations headquarters at Broadgate in the City of London: Reuters confirmed, however, that the value of outright sales of large dealing room installations has been running "well below the level of the first nine months of 1987".

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Sequent Computer Systems now has an Ada compiler validated to Version 1.9 of the Ada Compiler Validation Capability (ACVC) tests, which qualify it for Department of Defense use: the compiler was licensed from the Verdix Corporation and ported by Sequent and Software Leverage Inc (SLI) of Arlington, Massachusetts.

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And DDC International, Lyngby, Denmark, has added two new Ada compilers to its list of on-site validated products: they are the DACS-Sun-3 and DACS-386/UNIX V native compilers for Sun and Intel 80386-based workstations running Unix: on-site validation of compilers for ICL DRS300 and RC900 hardware has also been completed, and DDC says its compilers are also suitable to run on Altos, Apollo, Compaq, Hewlett Packard, NEC, Nixdorf and Prime systems.

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UK Unix distributor Microtex of Ascot is to market Workhorse, from Ireland's Workhorse Systems (UX No 161): the product is a multi-user task manager which will provide Microtex and its dealers with an integrated office automation capability.

Although there is still no word on the final ratification of the American National Standards Institute's ANSI C standards effort, the British Standards Institute, which will be setting up a C compiler validation service, is to hold a two day seminar in London on how the new standard will affect programmers, software vendors and users: speakers at the seminar, on December 15-16 at Kings College in Kensington, include the ANSI X3J11 chairman Dr Tom Plum, and Chairman will be John Souter of Hatfield Polytechnic: contact Neil Martin of the BSI on 0908 220908, extension 2813.

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Relational Technology Ltd, London, has announced an agreement with the British government's Central Computer and Telecommunications Agency (CCTA), for the supply and purchase of its Ingres distributed relational database management system: seen as a major endorsement of Ingres by the government, the deal allows over 500 departments to purchase the database at specially negotiated terms and conditions.

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Valid Logic Systems has announced RapidTEST, the fault simulator/test vector generation part of its TestBRIDGE family of design to test electronic design automation software, which runs on Sun-3 and Sun-4 workstations and DEC VAXStations under VMS.

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X/Open says that four European Government agencies are now supporting its common applications environment (CAE) by establishing it as a guideline for computer equipment purchases: they are the UK's Central Computer and Telecommunications Agency, the Commission of the European Communities, the Swedish Agency for Administrative Development (Statskontoret) and the West German Bundesland of NRW.

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And X/Open's new North American vice president Bill Bonin, says that the Supreme Headquarters Allied Powers Europe (SHAPE) along with other members of NATO are conducting a study into the sharing of software development across multi-vendor hardware, and are looking at the CAE.

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And Ken Coulter, managing director of Informix Software Ltd in London, now takes over as vice president, Europe.

Jeremy Thomas, chief executive officer with the Unisoft Group, has temporarily relocated to San Francisco to fill the role recently vacated by Donal O'Shea, now VP of operations for the Open Software Foundation (UX No 200): Robin Schlee, chief operating officer of the Group will take on the additional role of managing director for Unisoft Limited in London.

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Informix Software Inc., Menlo Park, California, has announced the release of SmartWare for Microport Inc's UNIX System V/386 Version 3.0: Smartware is an integrated office productivity package that includes Smart database, spreadsheet with business graphics, word processor with spellchecker and DOS/UNIX data compatibility, retailing together at \$1595.

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HCR Corporation, Toronto, Canada, is to provide UX-Basic on the AT&T 6386 (\$579 to \$1000) and Sun 4 workstations (\$900 to \$3900), an advanced version of Basic to take advantage of UNIX, including C-ISAM, compatibility with OASIS Basic, extended language features and conversion capability from other Basic dialects.

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Shipment of the SQL Server for OS/2, currently being co-developed by Ashton Tate, Sybase and Microsoft, is now expected to ship during the first quarter of 1989, according to Sybase.

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Engineering Mechanics Research Corporation Michigan US, is to make its engineering applications software available to run on Sony Microsystems's NEWS family of Unix workstations in a partnership agreement with the Japanese company: this includes the NISA and DISPLAY 11 software packages and according to Masato Nakamura, general manager Sony Microsystems Europe, Sony is now well on the way to reaching its target of 200 software partnership agreements with US and European companies.

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Correction: our article "Hitachi to become an open software sponsor" in UX No 199 cited HCR Corp of Toronto as the supplier of a Unix implementation for Hitachi: this work was in fact carried out by Interactive Systems Corp (UX No 104): apologies to those concerned.

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XEROX OPENS XNS TO UNIX SYSTEMS UNISYS AND INTERGRAPH TO LICENSE SOFTWARE

In a further step in its somewhat belated move towards Unix and open systems, Xerox Corp has released a version of its established Xerox Network Services (XNS) protocols for Unix System V.3. The software was developed jointly by the Xerox Systems Institute and software house Mentat Inc of Camarillo, California, and provides networking services for electronic mail, remote filing and printing, document interchange and encoding, and gateway access over a distributed networking environment. XNS protocols, which pre-dated and influenced the ISO Open Systems Interconnection seven layer reference model, specified in 1981, and Xerox says it is committed to supporting a "full and robust OSI implementation, compatible with the emerging standard". XNS is aimed at providing "sophisticated networking for Unix users", but although Xerox claims that 700 companies have purchased the documentation needed to implement the various XNS protocols (which are in the public domain), the most immediate benefit will be access to the Xerox Network System Architecture, including Xerox workstations, networked laser printers supporting the Interpress page description language, file servers and facsimile transceivers. The system will allow remote login from Xerox systems to Unix hosts, and file transfer between Unix and Xerox systems. The company hopes to encourage OEMs and large system developers to produce their own XNS applications: the first two licensees are Unisys Corp and Intergraph Corp, and Xerox says it is working with a number of other major systems and peripheral manufacturers on licensing agreements for the software.

MOTOROLA READY WITH FIRST RISC PRODUCTS

Determined to be first onto the market with board and system-level products using the 88000 RISC chipset, Motorola's Computer Systems division has pre-announced the first of its offerings, which will be available in January next year. They include two board level products: the 20 MIP MVME181 single board computer with a single 88100 microprocessor and two 88200 cache/memory management chips, aimed at the Unix, real-time and embedded systems market; and the MVME188 multi-board set, which uses the Motorola Hypermodule to package up to four 88100 and 88200 chips into a single carrier on the cpu board. The 188 fits onto between three and five boards, depending on configuration, and is rated at between 20 and 50 MIPS. Provisional price bands are £11-13,000 for the 181 and £18-25,000 for the 188. And Motorola says it will also be ready with systems level products based on the boards by early next year, with the first of its Delta 8X family, the Model 8X64, comprising of a cpu/memory management board with 1-4 cpus, 16-64 Mb memory, ESDI controller, 1/4 inch tape streamer, 8 port asynch board, graphics and Ethernet controller and MAP and WAN boards. On the software side, Motorola says its collaboration with Unisoft Corp has resulted in its pre-production SYSV88 Unix implementation which supports multi-processing, combining a single thread kernel booted up on a single cpu with multi-threaded tasking - an approach which simplifies compatibility issues with standard Unix V.3 and V.4, according to the company. Motorola has also defined a Binary Compatibility Standard for both its 68xxx and 88xxx processors which provides for common formats and packaging of software, allowing conformant applications to be ported between processor families by simple recompilation, said Motorola's UK head of marketing, John Shouler. "By next year we will be able to upgrade VME Delta customers by replacing 68000 board with 88000 boards and recompiling the software" he said. The 25MHz 88000 is claimed to offer two and a half times the performance of a 33MHz 68030.

BRITISH OLIVETTI BUYS DIRECT FROM AT&T

Although its parent, Ing C Olivetti & Co in Ivrea clearly had little success in marketing AT&T Co's 3B Unix supermicros in Italy, so much so that it has come out with its own competing LSX line of Unix machines, in the UK, British Olivetti has done significantly better with the machines, albeit in the main through third parties. Accordingly, the UK company has gone straight to AT&T to ensure continued supply of 3Bs. It was not prepared to confirm or comment on the agreement, but AT&T issued a statement effectively confirming it. "As regards OEM agreements," it said, "we see a benefit in simplifying the channels of communications between the supplier and the commercial subsidiaries which actually offer and support the products in the field. In view of this, some Olivetti subsidiaries will have the facility of dealing directly with AT&T in matters relating to their own OEM requirements when activities warrant it."

MAI BID FOR PRIME

\$400m a year MAI Basic4, Tustin, California, have stunned the industry this week with a \$970m tender offer for the venerable Prime Computers, Natick, Massachusetts, which is nearly four times its size. The offer is seen as a move by MAI to flush out a rival bidder for Prime, possibly AT&T, or less likely, one of the Baby Bells. If MAI were to succeed it would incur an almost intolerable debt burden, though they have Drexel Burnham Lambert saying it is "very confident" that the necessary funding can be secured.

AT&T TARGETS IBM 3X USERS AT COMDEX 88

Perhaps getting its own back for IBM's domination of the recent Unix Expo event in New York, AT&T struck back this week with a huge stand at Comdex in Las Vegas (see back page). And pride of place on the stand went to a new marketing program aimed at IBM System 34, 36 and 38 mid-range systems. The so-called 3X/Crossroads programme involves a package of communications options between PCs, Unix-based minicomputers and System 3/X hardware, and the first showing of AT&T's System V-based RPG II programming environment, bought in from Software Ireland of Dublin: which has also licensed it as Unibol/RPGII to Honeywell Bull, Olivetti and Data General. Also on the AT&T stand was new Systems Network Architecture (SNA) connectivity software for the 6386 WGS 80386-based PC.

MID-RANGE EXPERT SYSTEMS MARKET COMES ALIVE WITH NEW SOFTWARE

The middle range of the Expert Systems market has been galvanised into a hive of activity this week with the release of two new systems that are expected to compete for the ground between Intellicorp's Kee at the top end of the market and the Artificial Intelligence Applications Institute's Krystl for PCs at the bottom. Software Sciences, Farnborough Hants, has just released a new version of the Nexpert system products which can integrate with relational databases and IBM mainframes, and is aimed at closely integrating expert systems with commercial data processing. Software Sciences are marketing the Nexpert system, developed and produced by Neuron Data, a French company founded in 1985 and now based in Palo Alto California. Software Science's John Lewis expects the new products to enable Nexpert to deliver around 60% of the capacity of the Kee ES. The new products are available for the IBM AT, PS/2 and 386 machines, the DEC Vaxstation range, Sun, Apollo, Hewlett-Packard 9000 series, IBM RT and other Unix workstations, providing integration with Ingres, Sybase, Oracle and Informix. These are priced at £1200 per copy. Nexpert is also on beta test for IBM mainframes and compatibles, due for release in early 1989. It allows users to develop an ES on a PC or workstation using Nexpert's Object graphical development environment, and then to deliver it on to the IBM mainframe without any changes to the knowledge base. The bridge to IBM's RDBMS SQL/DS is transparent and the runtime library can be linked with any existing application or external program using standard OS linking conventions. This is possible due to Nexpert's Callable Interface providing for call in, call out to external, traditional MIS programs written in COBOL, PL1, FORTRAN or C. Nexpert's Runtime Library is being ported to the MVS OS with bridges to CICS, DB2 and INS. Prices on the IBM machines range from £3,650 (9370-20) to £25,000 (3090/500).

... AND GOLDWORKS EXPERT SYSTEM COMBINES LISP AND C

The latest version of the GoldWorks expert system building toolkit was also launched in London yesterday by Watford-based Artificial Intelligence Limited, the UK distributors for Gold Hill Computers Inc, Cambridge Massachusetts. GoldWorks II has been designed to enable the development of advanced applications and incorporates a set of new features, including support for Microsoft Windows, a graphics layout tool, and browsers to provide a visual representation of the frames and rules in the expert system. In addition Goldworks II offers the combination of Full Common LISP and C, which provides comprehensive rule and frame definition ability. First out is the PC version at the beginning of 1989, costing £5,500, but versions for the MACII and Sun workstation family are promised later in the year, and a DEC VAX edition is to be announced in the near future. Gold Hill say that as yet it has no plans for a version to run on the Mac's A/UX operating system.

HP ADDS INSIGNIA PC EMULATION

Hewlett Packard Co has now introduced the SoftPC Synthetic Hardware that allows HP 9000 computer users to run IBM PC-XT software. Insignia Solutions Inc, developers of SoftPC, already has an agreement with HP, which is to license, label, sell and support SoftPC as an HP product (UX No 186). SoftPC, which requires no additional hardware, allows the HP 9000 Series 300 workstations and 800 mini-computers to emulate a PC- XT and use standard MS-DOS software, including PC-CAD applications, and is now available for a range of HP systems from the 68020-based Model 318M through to the RISC based HP 9000 Model 855. The Series 300 version of SoftPC costs \$850 with a delivery time of around eight weeks, with the Series 800 versions coming in between \$1,275 and \$2,750 with an estimated delivery time of twelve weeks. In addition HP has also improved the IBM AT compatible HP 9000 Series 300 DOS coprocessor which now supports enhanced graphics adaptor (EGA) display emulation, X Window System Version 11, MS-DOS 3.3, and has a larger available address space. The coprocessor system, including hardware and software, costs \$1,335 and has a delivery time of four weeks. Both products have an expert system based on-line help facility and a hypertext feature allowing multi-level access to help menus.

"SPEC" BENCHMARK MAKES SENSE OF RISC

Four of the leading competitors in the RISC and high performance computer market have announced their intention to establish a range of standard performance benchmarks for the measurement and characterisation of reduced instruction set computer systems. The four, Apollo Computer, Hewlett-Packard, Co, MIPS Computer Systems and Sun Microsystems, contend that the emerging generation of advanced computer systems have broken with traditional design concepts and require "a framework for the collection of consistent and meaningful data for evaluation in real world environments". Accordingly, the companies have formed a non-profitmaking organisation, dubbed the Systems Performance Evaluation Cooperative (SPEC for short), which is also being sponsored in an organisational capacity by CMP's Santa Clara-based paper, the Electronic Engineering Times. The need for SPEC has arisen from the present battleground of benchmarking, in which companies are forced to defend their systems by presenting them in a more favourable light, according to EE Times editor Steve Weitzner. The EE Times Benchmark Suite will include public domain applications-based benchmark programs from the areas of electronic publishing, database management, LISP, computer- aided software engineering and electronic computer-aided design, with others to follow in 1989. The group is expected to expand in the near future, and a meeting for prospective members is to be held in December. SPEC is also anticipating contributions from industry at large, including academic institutions and independent testing labs. The benchmark tests themselves are to be run on a single machine and the results reported with exact details of system configuration and cost.

MEMEX UPDATES TEXT RETRIEVAL NOW ON SUN WORKSTATIONS

Memex Information Systems, East Kilbride Scotland, has launched an upgraded version of its Textract hardware-based text retrieval system. With the incorporation of an enhancement called Navigate and Search, Textract - which until recently was restricted to sales on Gould Computer Systems hardware under the name Hypersearch - can be configured and networked to handle distributed, dynamic information networks consisting mainly of textual data. Memex is aiming the product at what it regards as a major emerging market in the 1990s, embarrassingly dubbed "text exploitation", and claims that Textract can search very large databases without any loss in performance. A database to contain one gigabyte of text can be created in 12 hours, and by using sophisticated text compression techniques, requires only half a gigabyte in total storage space. Because the system uses hardware to perform its operations it doesn't execute code, has no occurrence lists and allows other users in the system to have full access to the CPU whilst text retrieval is going on. As well as Sun and Gould hardware, the product runs on the DEC MicroVAX II under VMS, and provides invisible interfaces with other RDMSs such as SQL, Oracle and Ingres. Memex claims that its approach to text retrieval is both fast and cheap - citing the cost of five Sun3 workstations with Textract to handle one gigabyte of data as £0.25m, compared with upwards of £2.5m for a comparable mainframe solution - Textract still has some traditional retrieval deficiencies, such as case insensitive when searching. The exclusive phase of the Memex/Gould deal ended in 1987, and although the agreement as a whole still has two years to run, Memex VARs have been successfully selling Textract systems into applications where they claim that volume and volatility of the text resource makes efficient retrieval impossible by any other means. Sun UK's John Coon regards the improved Textract as an important addition to Sun's application platform and says it has many implications for Sun in the commercial, government and military markets.

...AS ICL GETS READ WITH UNIX VERSION OF CAFS

ICL is currently working on a Unix implementation of its own hardware-assisted high performance database search product, according to the UK weekly Datalink. Cafs (computer-aided fast search) was introduced in 1979 for use with ICL mainframes, and is still only available bundled with Series 39 systems running VME. The new version will run on the DRS (previously Clan) series of low-end Unix micros, taking advantage of a new interface to the Ingres relational database, which is currently being ported to run under ICL's VME operating system.

AFCAC-251 LEAVES SOUR TASTE FOR UNSUCCESSFUL BIDDERS

Howls of protest from unsuccessful bidders now appears to be the inevitable follow-up to the awarding of any major Unix-based contracts awarded in the US. Following AT&T's victory in the recent billion dollar AFCAC-251 small computer multi-user contract from the US Air Force (UX No 204), Honeywell Federal Systems has protested to the General Services Administration's Board of Contract Appeals over the award. Honeywell claims that its technically qualified proposal to the Air Force would have resulted in a 20 per cent cut in costs over AT&T's solution, reports Electronics News, and says that the AT&T bid was only rated as the highest technical proposal because it was allowed to propose higher-priced equipment, exceeding specifications listed in the original request for proposal (RFP) - which was later secretly changed to reflect this, according to Honeywell. Honeywell also protested against the government's failure to act on the recent GSA directive which, although allowing the mandatory specification of Unix System V, also specified "the elimination of an inherent bias ensuing from the use of AT&T software". Other losing bidders, including Lockheed (using Counterpoint systems), Zenith, and IBM, have attended de-briefing sessions on the contract, but have not yet filed their own protests.

...AS HUGHES RELINQUISHES US AIR TRAFFIC CONTROL TO IBM

IBM's PC RT series, known in the UK as the 6150, may have been a loser in the AFCAC contract, but was the winning system at the centre of another huge US contract awarded in July: a \$3.6 billion Advanced Automation System air traffic control installation for the American Federal Aviation Administration, which will be based around a network of PC RTs. This bid, won by IBM in partnership with Raytheon Co and Computer Sciences Corp, was also the subject of an appeal from Hughes Aircraft, which bid Sun Microsystems workstations against IBM. Hughes lost its appeal at the beginning of this month, and has apparently decided against further appeals, according to Electronics News, which looks for it to bid instead on a similar upgrading of the air traffic control network in Canada.

MORE MEMBERS FOR THE OPEN SOFTWARE FOUNDATION

The Open Software Foundation took the opportunity to add more members at its European membership meeting held in Brussels at the beginning of November. The nine new members include four hardware manufacturers - Convex Computer Corporation, Intel Corp, Intergraph Corp and Sequent Computer Systems Inc - software houses Lachman Associates and HCR Corporation, and users DECUS, the Goddard Space Flight Center, and the University of Texas. Intel Corp, and both software houses have also aligned themselves with AT&T's Archer Group (UX No 203), underlying the growing perception of OSF as a software vendor rather than a standards body. The US chapter of DECUS, the Digital Equipment Corporation User Society, has a membership of 40,000.

CADNETIX, COMPLETING ACQUISITIONS, BOWS TO DAISY

Palo Alto-based Cadnetix Corp's quest for a white knight to see off its unwanted suitor Daisy Systems Corp, Mountain View, looks to have failed, and the company has now accepted in principle to Daisy Systems' sweetened \$9.50 a share bid - \$214m in all, made up of \$6.50 cash, \$3 convertible debentures. And Cadnetix will be worth a little more to Daisy than it might have been, because it announced this week completion of the two acquisitions it was in process of making on its own account before Daisy struck - those of HHB Systems Inc and Simucad Inc. Cadnetix paid 1.5 of its own shares for each HHB, valuing the company at about \$60m and will run it as a wholly-owned subsidiary. It paid 700,000 shares for Simucad. Cadnetix adds board layout to Daisy chip design tools.

IBM "ORDERS 50,000 TRANSPUTERS FOR SUPERCOMPUTER PROJECT

Further bolstering bubbling Inmos International Plc, IBM is understood to have ordered 50,000 of the Thorn EMI Plc subsidiary's Transputer microprocessors for use in one of two or three supercomputer development projects it has on the boil. The 3090 Vector Facility is something of a stop-gap to a more rarified series of supercomputer offerings planned by IBM, and was introduced mainly because users were demanding a high-performance scientific capability on their top-end commercial machines. One of IBM's supercomputer projects is actually being done by another company, Steve Chen's Super Computer Systems Inc in Eau Claire, Wisconsin, which is being bankrolled by IBM. Not much has been heard from the Chen camp in the last nine months, leading some to wonder how well things are going there. The Transputer order is for the second project, and it is thought that the third may have been cancelled. The IBM order is only the latest in a string of pieces of good news from Inmos that began when IBM decided to use its Colour Look-Up Table chip in the PS/2. With its commodity static RAM business also seeing soaring demand as ever more personal computers use cache memory, Inmos is doing so well that its value is growing all the time, and Thorn is no longer in any hurry to sell a majority holding in the business.

UK CCTA TAKES LEAD IN PUSH

FOR COMMON OPEN SYSTEMS PROCUREMENT

Government departments round the world are collaborating to produce a common Open Systems Interconnection procurement specification. The UK Central Computer and Telecommunications Agency has already completed a profile called Gosip which is compatible with the US equivalent and has it "laid on the table" as a building block for discussion. France, West Germany and the UK are to work especially closely with the aim of completing the core of a European Procurement handbook by the second quarter of next year. Project co-ordinator at the UK agency Norman Lamb says that the core will comprise specifications for wide area networks, X.25 packet networks and message handling.

HONEYWELL BULL ENHANCES OPEN SYSTEMS SUPPORT FOR DPS 6

Bull SA and affiliates, including Honeywell Bull Ltd in the UK, have a major new release of their Open Systems Interconnection product for the DPS 6 and 6 Plus minicomputer line. OSI/DSA6 4.1 incorporates the X400 Message Handling System and the FTAM File Transfer, Access and Management system to support electronic mail and file transfer between the DPS 6 and alien conformant systems. Open Systems conformance is also enhanced in the Session, Transport and Network layers of the model. The new release will be out here early in 1989 in both packaged and component form, at £6,773 to £13,575 according to configuration. The DPS 6 leads the way in Open Systems conformance within Honeywell's Distributed Systems Architecture, but the GCOS 7 and GCOS 8 mainframe lines are being brought up to the same level, as is the XPS-100 Unix line. Meanwhile, in France only, Bull is announcing SQL Net to enable Oracle Corp databases to be distributed on remote processors and accessible from any of them. Bull also enhanced DPS 6 Plus models and announced the new 80386 Unix co-processor for the DPS 6 Plus 400, launched here in September (UX No 199): the XC-PP enables concurrent access to GCOS6-HVS and Unix from one menu.

APRICOT OFFERS 30Mb 386SX FOR \$2,000

Apricot Computers Plc this week replaced its 80286-based Xen-i product line with a new range of AT-bus microcomputers with the cry "customers buy solutions, they don't buy buses." Chief executive Roger Foster claims Apricot is "firmly committed" to both AT architecture and Micro Channel, and believes AT-alikes will continue to dominate the small and medium size business sectors, with the corporate sector choosing to follow the Micro Channel route. The Apricot Xen-S range of 32-bit personal workstations uses the 16MHz Intel 80386SX processor and comes in four models, all with 1Mb of RAM expandable to 5Mb on board. They range from the Xen-S PC with a 30Mb hard disk designed for use as an entry-level stand-alone system; two workstations, the Xen-S 200 and 210, the latter with a single 1.44Mb floppy disk drive; and the Xen-S 240X, featuring a 44Mb removable medium drive from SyQuest Inc. MS-DOS 3.3 is supplied as standard, with OS/2, Unix and MS-DOS 4.0 available as options. Apricot has incorporated mouse port, disk controllers, Ethernet and VGA graphics on the motherboard, leaving three expansion slots free for specialist feature cards such as internal modems. All models are out now: the Xen-S PC version sells for £1,900; the 200 costs £1,200; the 210 costs £1,400; and the 240X sets you back £2,800.

QUINTAS PROLOG FOR UNIX 386 SYSTEMS

Quintas Computer Systems Inc of Mountain View, California, has introduced a Prolog toolset for 80386-based systems supporting Unix V.3. The Quintas Prolog Integrated Environment includes a development system which adheres to the syntax conventions of the "Edinburgh standard" and has foreign language interfaces. It also includes a run-time generator that allows applications to be developed for both stand-alone and server configurations, allowing shared code executables, dynamic memory allocation, linking with foreign languages, separate compilation of individual source files and portability to multiple target systems.

APPLE PUSHES COMMERCIAL UNIX

Apple's version of Unix, A/UX, was shown in a commercial environment at the Mac User Exhibition in London last week. Although A/UX has been in use in research and development departments and at academic institutions in the UK for some months, Informix's Wingz spreadsheet represents the first commercial application for the operating system to become available in this country. Wingz completed its beta testing in the US on Monday November 14 and first UK customers are to receive Wingz in six weeks time from Frontline Distribution, Basingstoke Hants, appointed as sole distributor in the UK. Some companies, including Callhaven plc London, which markets music sequencing and publishing software on the Mac, have reported a dissatisfaction with A/UX. Informix, however, says it is successfully ported applications to the system, and says that any "holes" in the system these are not expected to present serious problems. The main complaint is that A/UX's Toolbox package is missing a number of crucial components, making it effectively inoperable. A/UX is an implementation of AT&T's System 5.2 Version 2 Unix, and as Apple intend to see it migrating eventually to all AT&T releases, it can be regarded as being firmly in the Archer Group camp in the debate over Unix standards.

UNISYS STEPS UP OPEN SYSTEMS COMMITMENT WITH ENTERPRISE ARCHITECTURE

Unisys' plans for the emerging struggle over Unix standards are to be firmly rooted in strategy rather than products, according to Chris Mellor, Senior Unix Marketing Manager. These plans are formalised in its commitment to the Enterprise Open Systems Architecture approach, an integrated strategy covering all styles of computing from desk to data centre. Unisys is committed to the Archer Group's efforts to establish AT&T releases as the major market standard in Unix, although the group is said to be less than happy about the £500 it paid to a code word company for the "Archer" nametag! Unisys has established an Open Systems Centre at its head offices in London to provide support for Unix based systems and will be linked to regional activity centres in Leeds, Birmingham and London during next year. Each will demonstrate a range of open systems solutions with the assistance of specialists, funded to the tune of £4.5m. Further to this, Unisys declared last week that its 5000 and 6000 systems are now ready for X/Open branding, its merger with Convergent Technology (UX No 193) will be complete by the end of this month, and its System 5 desktops will support Open Look, X Windows and Sun News X Windows. The UK company is holding its Open Systems World exhibition at the Kensington Exhibition Centre between November 22-25th, including 40 seminars with a keynote speech by Rob Wilmott and an exhibition including 30 applications vendors.

1,000 MORE JOBS GO AT AMD

Faced with weakening demand for integrated circuits from the personal computer sector, Advanced Micro Devices Inc is having to cut its 8,500 strong US workforce by 1,000 people, 11.8%, in January. Based on current order levels it expects sales to fall this quarter, and sees no material improvement in the immediate future. It says important customers have excess inventory of programmable logic devices and 80286 microprocessors. It is also mothballing a bipolar fab in San Antonio, Texas, and will convert it to CMOS when appropriate.

SCANVEST RING LEADS EUROPEAN EXPANSION BY PYRAMID TECHNOLOGY

Pyramid Technology, Mountain View, California, has announced a European expansion programme, signing an exclusive distribution and support agreement for Sweden, Norway and Denmark with the Norwegian data and telecomms specialist Scanvest Ring. The two companies initially came together in 1985 with Scanvest's acquisition of Standard Systems, then Pyramid's non-exclusive distributor in Sweden. According to managing director Helge Midttun, the intention is for Scanvest, now 51% owned by Olivetti (UX No 176) to serve more as a systems integrator, and to migrate from proprietary to open systems. In addition Pyramid has set up its Benelux operation with new offices in Amsterdam, and will be announcing a Paris based subsidiary early next year. A new version of X.25 developed in the UK is due to be released soon, and there is a new range of systems in the pipeline, updating the company's pioneering RISC systems with an upgrade to CMOS and TTL technology, due for release next year. At present Pyramid regards Stratus Computer Inc, Marlboro Massachusetts, as its main competitor, and intend to concentrate on developing RISC processors in fault tolerant transaction processing systems in response to this.

JAM OFFERS DATABASE WINDOWS

New York software house Jyacc Inc has signed up the UK's Henley Business Software Ltd of Henley, Oxfordshire, as the exclusive European distributor of its JAM applications manager, a product aimed at simplifying the design of front-end applications for databases that will run on character-based terminals. Five year old Jyacc developed the forms management software out of its own set of C library routines, and more recently has added a fourth generation language - JPL - and an SQL database interface. The product, which allows a developer to create front-ends including windows, pop-up menus and colour, now runs under six operating systems, including Unix, Xenix, VMS and PC-DOS. Henley Business Software says it will be supporting the product in conjunction with its own SQLBase PC database, and with Informix and Oracle under the Unix and VMS operating systems. For graphics-based systems, Henley uses the MS-Windows based SQL-Windows from Gupter Technologies of Menlo Park, California, but managing director Nigel Geary says that Presentation Manager, and possibly X-Windows versions are among plans for the future. Prices for JAM start at £895 for a low-end AT or Sun 3/50 running Unix, rising to £1,295 for an IBM 6150 or Sun 36i, and £2495 for Apollo 4000, HP 9000 and NCR Tower machines.

MAI BASIC ADDS LOW-END BUSINESS MICRO

MAI Basic Four Inc, Tustin, California has introduced a small-range MAI 2500 multi-user supermicrocomputer to replace the 68010-based 2000 which is being phased out of production. The 2500 is effectively a downgraded 3000, which uses the 68020 microprocessor, and like the rest of the range runs under the MBF Unix-based BOSS IX operating system (UX No 101). It is being offered to small and medium sized companies who in time may want to upgrade to larger MBF systems. BOSS retains a Unix command structure but has been designed specifically for business use. The 2500 supports up to 14 concurrent system users or serial devices, as well as Origin, MAI's own 4GL database, and Informix. It provides up to 4Mb of memory and 160Mb of disk storage and communications options available include MAI's Magnet LAN and WAN systems. A basic system configuration costs around £15,000.

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Hewlett-Packard Co is celebrating a \$13m contract for 170 of its low-end HP9000 Series 360 TurboSRX three-dimensional HP-UX Unix workstations from Lockheed Aeronautical Systems Co of Burbank, California: they are for use in aerospace applications such as computational fluid dynamics, aerodynamic analysis of control-surface design, and acoustic profiles, in particular for the long-range air anti-submarine capability aircraft for the Naval Air Systems Command in Washington.

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As well as an £8m two-year contract with the UK Department of Social Security covering its full range of systems, Apricot Computers Plc has an OEM order, believed to be worth £7m for an initial 5,000 Micro Channel Architecture machines, from an unidentified West German company which isn't Nixdorf Computer: possibilities include AEG AG, Siemens AG and Schneider Rundfunkwerke GmbH.

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No comment yet from DEC, but according to Electronic News, the minimaker has followed July's termination of the Argonaut development effort with the coup-de-grace for its Aquarius 20 to 25 MIPS water-cooled ECL VAX, leaving only the air-cooled 10 to 14 MIPS Aridus version of the processor alive (CI No 966).

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First impressions count most, they say, and the first impression of this year's Comdex/Fall in Las Vegas, gleaned on a Sunday tour of the exhibition area in a chaos of hammering and panic that stands wouldn't be ready in time for yesterday's opening, is that flamboyance and flackery will count more than solid innovation at this year's show: despite saying beforehand that Comdex simply wasn't a Unix show, AT&T Co has regained its confidence to the extent that it has resumed its pride-of-place position next to the entrance with a massive 10,000 square foot stand - must have set the company back at least \$1m, say the know-alls, Dick Pick has taken almost as much space by putting three meeting rooms together to create the Pick Pavilion, the Japanese have completely abandoned their traditional reticence and have taken enormous stands, making themselves look just like US companies - and there are OS/2 stickers on scores of stands, with cynics saying that they mean there's someone on the stand who's heard of the new operating system.

Digital Research is showing the new 3.0 release of Concurrent DOS 386, claiming three times better performance when four to five users are hooked to the multi-tasking, multi-user MS-DOS compatible operating system: with 10 programs, each now gets 376Kb, and it is still \$400.

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Prime Computer Inc had no comment on Wall Street gossip that someone was warehousing the shares ahead of a bid - they have put on \$2.50 to \$15.50 in the last few dull trading sessions: AT&T Co is tipped to bid.

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Apollo Computer Inc has won a contract for 100 workstations from the University of Montreal, making it one of the largest workstation contracts ever recorded in Canada: the network of Apollo's Series 3500, Series 4000 and Series 3000 Personal Workstations will be used by nearly 1,000 students and faculty in six labs throughout the university for computer science work.

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Sanyo Electric Co's plans to manufacture computers in the US involve its American affiliate Icon International Inc, whose MS-DOS and Unix machines it currently assembles in Japan: Icon's business is being hurt by the punitive levy imposed by the US on imports of personal computers manufactured in Japan in retaliation for alleged non-compliance with the US-Japan Semiconductor Trade pact.

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Terminal manufacturers Visual Technology Inc of Lowell, Massachusetts, has acquired XPI Inc of Providence, Rhode Island, a small company specialising in X Window-based software: XPI supplied the software for Visual's recently launched 640 terminal, a 68000-based product designed to run X Windows as part of an Ethernet networking system, priced at \$1,995, and including a proprietary Unix-like operating system.

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Weitek Corp has upgraded its WTL 3164 and 3364 floating point processors with three new speed grades, 75ns, 60ns and 50ns, by re-implementing the original 100ns, 1.25 micron technology in a 1 micron process.

Small systems survivor Cromemco Inc, Mountain View, California, has been acquired by Dynatech Corp, and will henceforth be known as Dynatech Computer Systems: while existing product lines will continue to carry the Cromemco label, new products will be marketed as Dynatech systems, and will be sold into specialist niche market areas, said the company.

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The US Environmental Protection Agency has dropped from its request for proposals for an image processing system three key specifications criticised for limiting competition, according to Federal Computer Week. It dropped specs for a Unix-based image file server, the requirement for Structured Query Language and loosened specifications for local area networking, accepting LANs other than Ethernet.

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Another of those ridiculous rows that bedevil relations between Washington and Tokyo has blown up, this time over the Computer Education Centre's decision to use the educational variant of the Tron operating system - to be supplied by Matsushita Electric Industrial Co on an exclusive basis - on 700,000 computers to be procured for use in Japanese schools: the issue appears to be the decision to specify Tron for the schools system, for which IBM Japan and Nippon Unisys are among the 12 bidders building prototypes, on the grounds that it would tend to shut out the US software industry; the complaint looks suspiciously like a demand by the US that it should have a monopoly of the operating systems used in Japan, and while Apple Computer Inc feels disadvantaged over the decision to use Tron, NEC Corp, whose runaway market leader, the PC-9800 series, uses a version of MS-DOS, is no less disadvantaged.

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NCR Corp has received an order from the British Post Office for \$3 million worth of NCR Tower systems: the deal involves over 300 Tower 32/400 systems for integration into the Post Office's SNA network, which will be used to track the movement of Datapost parcels throughout the UK, routing barcoded data to the relevant receiving station and also transferring information to a mainframe using SNA APPC.

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X/Open is to hold the fifth of its European Software Seminars on Wednesday 7th December at the Sheraton Skyline Hotel, Heathrow, London: contact 0734 508311.

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HP-MICROSOFT TAKE FIRST STEPS TOWARDS UNIX PRESENTATION MANAGER

Hewlett Packard and Microsoft last week revealed the first stage in its effort to promote the Presentation Manager interface as common graphical front end to both Unix and PC-based systems. The announcement, at Comdex in Las Vegas, revealed HP's Common X Interface (CXI), which aims to give Unix systems the same appearance and behaviour as PCs running MS-DOS with Microsoft Windows, and MS-OS/2 with Presentation Manager. CXI, which HP says was a direct response to the Open Software Foundation's search for a user interface, is also available in a "three dimensional" version that uses HP's proprietary widget set. CXI source code will be available through licensing, and although most of the CXI programming components can be bought now, from the end user point of view the system will not really be viable until the middle of next year when the window manager needed to run the applications becomes available. Next stage is the long-awaited Presentation Manager/X (PM/X), an extension of CXI which has application program interfaces consistent with MS OS/2 Presentation Manager and will allow developers to port applications more easily from OS/2 to Unix systems and vice versa. However, the task may not be easy. X/Open evaluated the possibility of using Presentation Manager as its standard interface earlier this year, and reported severe performance and technical difficulties. And there is no indication yet that IBM will support PM/X: last month it signed up the NextStep interface from Steve Jobs' Next Inc as the interface for its AIX-based systems. But Microsoft founder Bill Gates was quoted in Computer Systems News recently as saying that he "might try to convince IBM to have a second user interface to AIX". Meanwhile, the Open Software Foundation has reportedly whittled down its choice of user interfaces to twelve, and will be choosing the winning product or products by the end of this year, with a full rationale by January 13th. The next user interface meeting is due to be held in Boston on December 7-8th.

ASHTON-TATE SUES FOX OVER dBASE

Ashton-Tate Corp rocked the software industry late Friday when it filed a suit against Fox Software Inc, Perrysburg, Ohio and Foxbase distribut or Santa Cruz Operation Inc in Los Angeles that extends the scope of "look and feel" actions to cover a programming language. The suit alleges that FoxBase+ infringes Ashton-Tate's copyrights in its dBase II, dBase III III Plus, and seeks to prohibit Fox from proceeding with its threatened infringement of copyrights in dBase IV; monetary damages, recovery of profits from alleged infringement; and injunctive relief to prevent further marketing. Covered are FoxBase+, FoxBase+/Mac, +/386, +/LAN and SCO FoxBase+ for Xenix. "We believe that Fox and SCO have violated our legal rights by copying total concept and feel of dBase III Plus, including the screens and menus, the dBase language, and the entire sequence, order and arrangement of our programs as they interact with the computer program as it presents itself to the user," says Ashton. Fox believes that the dBase language was written by Wayne Ratliff when he worked at the US Jet Propulsion Laboratory, and that, having been developed on Uncle Sam's time, is therefore in the public domain.

RISC FEATURES OF 80386 IN SUPER-CO-PROCESSOR

Intel Corp has been promising that it would accommodate RISC technology with the 80486 high performance 32-bit follow-on to the 80386, and now it seems that the company plans to do this by way of a RISC co-processor for the 486. The floating point RISC co-processor, code-named the N10, is tipped to give the 80486 performance equivalent to that of a minisupercomputer. Raw performance, according to potential customers who have seen the co-processor, is 64MFLOPS in floating point arithmetic, 40 MIPS in integer work. Samples of the part should start appearing in January and volume is expected when the 80486 becomes available later in the year - but they won't come cheap: \$1,500 a chip is the price being mentioned. In an MS-DOS or OS/2 micro, reckons Computer Systems News, the N10 would be used to run graphics and vector processing. The part, with 64-bit bus for double precision work, is said use 2m transistors in sub-micron CMOS to integrate heavily pipelined processor, cache memory, memory management unit and floating point arithmetic unit on a single chip. Will Intel offer it as a stand-alone part without the 80486? It seems unlikely: the company's aim is to maintain a single product line, upwards-compatible with the 8086.

FUJITSU'S HAS 15 MIP SPARC

Fujitsu Ltd yesterday unveiled its second generation implementation of the Sun Microsystems Sparc processor, claiming that its new part is the first RISC to break the one cycle per instruction barrier. The company claims that the first version of the new H family Sparc will offer more than twice the performance of its 25MHz S-25 version, rated at 15 MIPS. The one cycle barrier is a landmark in RISC technology because the typical best performance is 1.25 to 2.6 cycles per instruction; Fujitsu says it has a unique micro-architecture that optimises branches and load-stores, capitalising on aspects unique to the Sparc instruction set, and using existing optimising compilers. Sampling is set for second half of 1989. The company also announced the first available VLSI implementation of a 25MHz Memory Management Unit and a Floating Point Controller for a Sparc RISC, for use with its existing S-25 MB86901 part. The MB86920 memory manager for 64Gb physical, 4Gb virtual address space and the 3.3 MFLOPS single precision MB86911 floating point chip sample next month with volume in February. Volume: \$239 and \$238 respectively.

SPARC COUNCIL FORMED

The five semiconductor companies that have been licensed by Sun Microsystems Inc to fabricate the Sparc 32-bit RISC microprocessor for the merchant market have come together to create the Sparc Vendor Council "to continue and accelerate the momentum of the Sparc effort under the member companies' own direction". The five are Bipolar Integrated Technology, the Advanced Products division of Fujitsu Microelectronics, LSI Logic Corp, Texas Instruments Inc and the Ross Technology subsidiary of Cypress Semiconductor Corp. The Council is chartered to promote Sparc and ensure the continuity of the architecture's openness, performance and scalability. Sparc was designed to be implemented in a variety of process technologies - CMOS, Bi-CMOS, ECL, GaAs.

AT&T "CRITICAL OF AIX"

AT&T was showing visitors to Comdex last week a "highly critical" report of AIX, the core technology chosen by the Open Software Foundation for its alternative Unix version, according to Electronic News. It was written by Archer Group experts given an advance preview of the new release of AIX by the Foundation. The report is said to highlight "significant migration and portability problems", and technical problems with the AIX virtual memory management subsystem. The inability of AIX to support existing file system and object-file formats "would be enormous, with thousands of programs to convert", said the report, which also identifies the virtual memory subsystem as "a feature designed for certain styles of hardware architecture".

PC-INTERFACE FOR ICL FRANCE

Synersoft, a French company based in Paris and specialising in Unix connectivity and windowing porting, has announced the availability of PC-Interface for the ICL DRS 300 and the Clan 4, 5, 6, and 7 ranges - recently renamed as DRS 400 and 500 systems. PC-Interface, developed by Locus Computing Corp of Santa Monica, California, facilitates file transfer between the MS-DOS and Unix operating systems. The porting was made for Level 4 of the ISO/OSI compatible ICL Oslan network, and carried out at the request of ICL France. Synersoft acts as a European representative for Locus in Europe, and holds a full source licence for both the DOS and Unix side.

AT&T BRINGS 3270 MULTI-VENDOR CLUSTER CONTROLLER TO UK MARKET

Three years after the launch of the AT&T 6500 Multifunction Communications System cluster controller in to the American market, AT&T has announced its first efforts to sell the system in the UK, through London-based IBM small system specialists Rental Research. The 6500 represents AT&T's attempts to move into the IBM 3270 marketplace, and competes with IBM's 3274/3174 range of controllers. Although comparable in price, AT&T claims the 6500 offers greater configurability than the IBM machine, with a series of plug-in expansion modules for up to 32 synchronous and 32 asynchronous ports - allowing additional multi-vendor connectivity from the 3270 to Unix-based AT&T 3B, DEC VAX, HP 3000 and other minicomputers, as well as SNA/SDLC and X.25 connections to the host machine. Simultaneous access to up to four hosts is through AT&T dedicated display terminals or via PCs with an add-on adaptor. Rental Research founder John Knight said the company expected sales of \$1.5 million over the first year of the agreement, and is focusing on high value installations: the company's current customers included Chase Manhattan and Reuters. Field maintenance will be handled by an undisclosed third party maintenance company. AT&T said it had not yet finalised arrangements to cover the European market.

RPGII NOW ON IBM 6150 AND NCR TOWER

Jacore Technologies Inc is giving IBM System 34/36 users the chance to start messing around with Unix on the 6150, or RT workstation, which can hardly be IBM's best news of the week. Based in Marietta, Georgia, Jacore has adapted the Unibol implementation of RPGII for Unix, developed by Software Ireland Ltd of Belfast, and recently also introduced by AT&T (UX No 206). RPGII/IX enables System 34/36 users to run their applications under AIX, using the RT as an alternative growth path to the AS/400, thus avoiding the very big price jump System 36 users otherwise face. Jacore also regards RPGII/IX as a solution for those System 34/36 users who would like to add the office automation facilities of the AS/400 by connecting to a System/3X via the RT. Written in C, RPGII/IX offers full emulation of IBM 5251 Model 11 functionality on suitable terminals, a "high degree" of compatibility with 34 and 36 files using the AIX file system, and full utilities. Jacore has a three year exclusive agreement to market the product in the US. Software Ireland are also supplying Unibol/RPGII to NCR Corporation, Ohio as part of its Bandwagon Program which will enable VARs to convert their software applications developed in System 34/36 RPGII to the Unix based NCR Tower family. NCR is also using another conversion tool, Convert/36 offered by ABC Development Systems, Minneapolis, to convert System/36 BASIC applications to ABC's Workstation BASIC, which runs on Unix and can be ported to NCR's Tower Unix operating system.

IBM "TO MICROCODE DISPLAY POSTSCRIPT INTO ALL TERMINALS"

IBM is believed to have committed to the Adobe Systems Inc Display PostScript screen-writing language to the extent that it is considering microcoding the language into all its display terminals. Such a move would facilitate implementing the Common User Access element of Systems Application Architecture across IBM's incompatible product lines, and would enable the company to put more of an IBM stamp onto its AIX implementation of Unix - Display PostScript is a key element in the NextStep user interface from Next Inc that IBM has licensed for use with its AIX Unix product line.

MICROTEX TO DISTRIBUTE ARIX IN HIGH-END SYSTEMS PUSH

Arix UK of Henley on Thames, Oxfordshire, has joined forces with Microtex, Assot, Berkshire, to distribute the Arix 825 and 850 ranges in a deal said to be worth 2 million over the next eighteen months. Microtex, which says it needed more powerful machines to offer customers above the Altos systems it already distributes, now intends to attack the larger end of the systems market in 1989, according to managing director Peter Clair. Arix systems now support up to 704 users networked through local and wide area networks: the 800 series includes a new LAN software package called PCXtended, running under the Arix-OS implementation of Unix V.3.1. Edinburgh University's Artificial Intelligence Applications Institute has added an intelligent capability to the process of chip design: European Silicon Structures (ES2), the Bracknell based silicon compiler company, has signed a £1/4m contract with the Institute which has built a prototype intelligent front end for ES2's existing chip design tools using the AI toolkit, Knowledge Craft. The AIAI is to follow this up by investigating and prototyping systems for auditing and critiquing circuit designs.

UNIX TIDE HAS TURNED, SAYS INFORMATION BUILDERS

The initial launch of the Focus 4GL and database system for Unix users last year (UX No 150) was a muted affair, with Information Builders Inc president and founder Gerald Cohen convinced that the market was not yet mature. Now that has all changed, with three more Unix versions for Apollo, Hewlett Packard and Sun workstations, and a Xenix version for the PS/2, released this week: Focus is also available on the IBM RT/6150, NCR Tower, Pyramid and AT&T hardware. The company is also working on versions for Philips systems, and DEC Vaxes running Ultrix, and Focus interfaces for Unix databases such as Sybase and Ingres are also under development. But although IBI's corporate customers are now accepting users, the really big orders are so far confined to more traditional platforms: Barclays Bank has chosen Focus as its strategic end-user computing environment worldwide, and has so far spent around £2 million on DEC VAX, IBM mainframe and PC versions of Focus, with 63 Focus for VAX licences to be issued over the next two years. IBI also announced the establishment of two new European subsidiaries in Paris, France and Brussels in Belgium.

MAI BASIC FOUR IN \$970m BID FOR PRIME COMPUTER

As reported briefly last week (UX No 206) little \$400m-a-year MAI Basic Four Inc has stunned the industry by launching a \$970m tender offer for Prime Computer Inc, nearly four times its size, saying that a combination of the Tustin, California Basic language business systems manufacturer with the Natick, Massachusetts minimaker makes "excellent business sense". The \$20-a-share offer is widely seen as a move by New York investor Bennett LeBow, who with his partner William Weksel owns 43% of MAI, to put Prime into play and flush out a rival bidder at more than the \$20 a share currently on offer - which compares with a price just before the bid of \$15.875. As reported, possible bidders that have been named include AT&T Co, and, much less likely, one of the Baby Bells. Prime became vulnerable as soon as its weak profit performance following acquisition of Computer Vision Corp early this year was followed by news that chief executive Joe Henson planned to step down in a few months - he has now been replaced by Anthony Craig, ex GEIS. If MAI were to succeed in its bid, the resulting combination would be carry a well-nigh intolerable debt burden: MAI has a commitment from the Canadian Imperial Bank of Commerce for \$325m in financing, is confident that it can syndicate another \$325m to other banks, and has Drexel Burnham Lambert saying it is "very confident" that it can raise \$875m through a private placing of notes - haven't the guys at Drexels been reading the papers lately? The bid is conditional on 67% of the shares being tendered by December 14 - MAI currently has 4.1% of those outstanding, 3.1% fully diluted, and on courts in Delaware and Massachusetts lifting Prime's poison pill and other obstacles to the takeover. In the nine months to September, Prime did \$33.4m net on turnover of \$1,160m, and in the nine months to June, MAI did \$18.7m net on turnover of \$302m.

ARDENT ADDS SERVER TITAN -

SIGNS OEM DEAL FOR NCD X-STATION

Network Computing Devices Inc, the California venture-capital start-up that is developing an X-Window-based network display station for release early next year (UX No 197), has revealed its first OEM agreement, with Ardent Computer Corp, Sunnyvale, California. Ardent says it will reference sell and selectively direct sell the NCD product for use with compute-server configurations of its Titan superworkstation. Initially launched as a dedicated, single-user graphics machine, the Titan can now be purchased without its specialist graphics hardware as a server aimed at department-level scientific and engineering applications. Its maximum four processor configuration provides performance of 64 MFLOPS and 64 MIPS, according to the company. Ardent's Steve Blank claimed that the NCD workstation would provide the cheapest method of adding users to the Server while retaining a high-resolution, windowed graphics interface. "This will provide the same display capability as a diskless workstation, that with a share of the server, costs about \$10,000", said Blank. The NCD16, due out in the first quarter of 1989, should sell for under \$3,000. The product is designed to allow simultaneous access to multi-vendor computers via the emergent X-Windows standard, and will be initially available for Unix and DEC VMS operating system environments. In a separate announcement, Ardent has announced the availability of VMS emulation software on the Titan from Boston Business Computing of Lawrence, Massachusetts. The two packages are the VCL digital command language emulator, and EDT+, which emulates the VAX EDT editor.

ALTOS MOVES UP-MARKET

WITH DUAL-PROCESSOR SERIES 2000

Altos Computer Systems has extended its range of multi-user micros upwards with the UK launch of the dual processor 386 Series 2000 M20DP for up to 128 users. The processors operate at 20 MHz, and each has its own 387 floating point unit and 32 KB of cache. The system allocates applications between the two CPUs, 16 MB of RAM is provided and the whole thing will cost you £49,995. The company has also decided to phase out the 16 MHz model of the Series 2000, replacing it with a 20 MHz model which offers an extra 25% of CPU performance and supports more users. Top of the range single processor model is now the 2000/8-380-MD, which with MultiDrop connectivity, supports up to 64 users and costs £39,995. And Altos has also expanded its Series 1000 range with a 25MHz 386 Series 1000, supporting up to 24 users. The UK division has now released Altos' adLANtes local area network, which handles the whole range of Altos systems and costs around £2,500: it combines WAN, LAN, terminal connections and multiple links between Altos host systems and DOS based PCs.

...AND WILL FLOAT OFF

EUROPEAN BUSINESS FOR 1992

In preparation for 1992 Altos has appointed UK managing director Archie Thomas as its first president of European operations. He outlined the company's strategy for the single European market, saying that Altos intends to float off its European operation to raise capital for expansion, and may even do the same to the eight subsidiary companies within the European group. Revenues from European sales now amount to 50% of worldwide revenues, according to Thomas, and the company has seen as 60% growth in European business over the last few years. Thomas said that Altos intends to establish technology transfer agreements in the chip market, and will announce new systems in the 100 to 200 user range over the next year.

NEC BACKS AT&T IN UNIX BATTLE - OSF APPOINTS PRESIDENT

Japan is beginning to line up squarely alongside AT&T Co and the Archer Group in the battle with the Open Software Foundation for the soul of Unix - perhaps partly because they see IBM as the enemy. NEC Corp has followed Fujitsu Ltd and Toshiba Corp into the Archer camp where only Hitachi Ltd has joined the Foundation, albeit as a sponsor. Meanwhile, the OSF has appointed its permanent president and chief executive officer: he is Computer Associates International Inc's executive vice president for planning, David Tory, who will be taking a leave of absence to join the Foundation.

**NIXDORF DECENTRALISES MARKETING
IN FACE OF FLAT PROFIT
PROSPECTS FOR 1988**

Nixdorf Computer AG has put up such a sterling profits performance for so long that the news that profits this year will only be even with those for last year, on turnover growth slowed to 10% - implying \$3,200m or so, will be seen as a very bearish sign, despite the fact that its disappointing news is still a whole lot better than that from a string of competitors in similar market sectors that are turning in losses. The company is moving to increase sales and cut costs by decentralising the marketing operations in the hope that it can achieve a more global approach to its business and bring new products to market faster. The switch involves dividing the marketing operation into four divisions, each of which will have worldwide responsibility for a particular vertical market segment, the four being banks, retailers, medium-sized businesses and institutions. The head of each of the four will report to vice-chairman Arno Bohn. In the US, Nixdorf is starting to earn real money after years of investment, and profits should rise 30% on a 10% growth in sales to around \$300m.

**MATSUSHITA HAS BUSINESS SOFTWARE
DEVELOPMENT TOOLS FOR ULTRIX**

Matsushita Electric Industrial Co continues to point up its revived interest in the computer market with the release this week of an office automation software development support system that runs on DEC VAX 8000s under the Ultrix version of Unix, and supports Panacom M terminals from Matsushita and NEC Corp PC-9800 personal computers: called SDSS, for Software Development Support System, the product offers development aids such as on-screen flowcharts and design sheets, including the HCP methodology from Nippon Telegraph & Telephone Corp, and the SDEM specifications from Fujitsu, and follows right through the development process to provide tools for debugging the finished product; it is claimed to reduce the effort by 50%, the cost by 18%.

INTEL IS MAKING TOO MANY 80386 CHIPS

Intel Corp has been making too many 80386s, and as a result, its fourth quarter turnover will be approximately 10% below the record \$785m reported for the third quarter, the company says. Earnings per share are now expected to drop to between \$0.40 and \$0.50, against 55 cents a share in the 1987 fourth quarter - but 14 cents of that was accounted for by tax credits; the company had said that the fourth quarter sales would be flat with the third quarter, and that earnings per share would be down - and the new forecast is below what the financial community had been forecasting for the company. Expanding on the reason for the shortfall, Intel says that it is down to a continuing OEM inventory correction affecting the 80386 microprocessor and companion chips. In recent quarters, Intel rapidly expanded production of the parts to meet demand, and "while we are experiencing almost no returns of these products, our OEM customers are pushing out more of their purchases than had been expected," said chief executive Andy Grove, president and chief executive officer. "We have been talking closely with our customers and they indicate that their business outlook is good," Dr Grove added. "We think we will work our way through this situation by the second quarter of next year and expect growth to resume at that time," he concluded optimistically.

**SUN "SETS LOW-END WORKSTATIONS
FOR EARLY 1989" ...**

Sun Microsystems Inc is tipped to beef up its effort at the low end of the workstation market in a bid to take on the Apple Mac II and the NeXT Inc Unix workstations. According to MacWeek, the company will early next year will introduce several low-end Unix workstations that also run MS-DOS, starting with a general purpose 68030-based box, and followed by additions to the 80386-based 386i line. Sun is also said to be eyeing retail distribution via the likes of ComputerLand Corp and Businessland Inc.

...AND ALSO LOOKS TO BOOST TOP-END

Apollo Computer Inc's foray into the superworkstation market last Spring with its RISC-based Series 10000, accompanied by start-ups Ardent and Stellar, left Sun unprepared with a competing product line. Now it seems that the company is indeed interested in the top end of the market, and has been talking to Computer Systems News about its plans. Plans for a high performance 3D graphics superworkstation have arisen out of the company's increasing emphasis on graphics, which resulted in the formation of the Graphics Products Division eighteen months ago, and now employs 300 people. The division is working on rendering, image-processing and video systems. No dates were given.

...BUT RAPID GROWTH "MAY NOT CONTINUE"

According to analyst Sanjiv Hingorani of Salomon Brothers, Sun investors could be in for a "severe earnings disappointment" in 1989. Although revenues at Sun "continue to grow at an explosive rate, margins continue to contract" says the report. The general slow down in the workstation market, increased competition from the likes of DEC and Hewlett Packard, and the "rapid expense growth experienced by the company" are cited as the contributory factors. Hingorani is sceptical of Sun's ability to compete in the general purpose commercial markets dominated by minicomputers and PCs, and says the company's multiple architecture strategy (Intel/Motorola/SPARC) will not endear it to end-users looking for object-code compatibility. Despite revenue growth in 1988, says the report, operating margins declined from 12.9% in 1987 to 10.5% this year. Earnings per share are forecast to expand by 27.4% in 1989, compared with the 61.3% experienced in 1988.

REXON ON THE BLOCK:

ALPHA MICRO HEADS POTENTIAL BUYERS

Alpha Microsystems Inc has been frustrated in a whole string of acquisitions and alliances over the past couple of years, but the Santa Ana, California manufacturer of proprietary multi-user microsystems is determined to increase its volume by picking up one of its siblings. Latest target is believed to be the Business Machines arm of Rexion Inc, in nearby Culver City, California, which does some \$12m a year selling its proprietary Intel iAPX-based multi-user systems. It is understood that San Francisco venture capital firm Hambrecht & Quist Inc, which has management control of Rexion, is seeking offers for the unit, and that Alpha Micro is not the only company to have expressed interest. Only the business systems arm of Rexion is for sale; the group also includes Wangtek tape drives and Tecmar personal computer expansion boards.

HIGH SPEED NETWORKS OPT FOR HSC - FDDI IS "TOO LITTLE, TOO LATE"

A number of companies are lining up to support an industry standard in the fast growing world of high speed communication links. High Speed Channel or HSC (UX No 171), is a 100 Megabits per second operating protocol on a copper cable connection of up to 25 metres, and is expected to be supported by the leading players, including Scientific Computer Systems Corporation, San Diego, California, Ultra Network Technologies, San Jose, California, IBM, DEC and Cray Research. An ANSI standard, the Fibre Digital Data Interface has recently been introduced operating at 100 Megabits, but is described as "too little too late" by Scientific Computers. The high speed communication market, previewed in UX No 171, has recently taken off, with companies offering network solutions to the data transfer bottlenecks confronting super and superminicomputers. Faster local area networks (LANs) are needed by supercomputers because, over the last decade, cpu processing speed has dramatically outstripped the ability of computers to transfer the information processed. The increasing use of powerful real-time technical and graphics based workstations distributed over a network means that millions of bytes are being dumped onto networks, and there is a growing requirement for users to share multiple resources from any node on the network. Operating systems increasingly support distributed computing capabilities which means a user executing a complex application will spend a lot of time just reaching across the network to access a special purpose processor or remotely stored data. The major bottleneck isn't the speed of the data link, but the way in which protocols are processed. Instead of getting data on the network as fast as possible, traditional networks stop the data at various points to process protocols. Ethernet, for example, only delivers about 20% of its data link speed to the application user, which represents less than 5% of a typical workstation's throughput capacity. Network Systems Corp's Hyperchannel which operates at up to 100 Megabits was regarded as the fast communications link up until this year (UX No 179) but has now been superseded by Scientific's Vectornet (UX No 184), 1.4 Gigabits per second, Ultra's UltraNet (UX No 199), one Gigabit per second, and Cray Research's HSX at 800 Megabits. Both Ultra and Scientific are understood to be working on interfaces to the proposed HSC standard from their respective high speed networks. Currently rated at 100 Megabits per second, HSC is expected to be extended to 1.6 Gigabits in the future.

...AS GOULD ADDS HIGH SPEED LINK TO CRAY

Also in the high speed connectivity world, Gould Computer Systems Inc has developed a high speed communications link with Cray supercomputers following an agreement signed with Cray Research Inc earlier this year. The link is part of a new Gould computer, the Supercomputer Front-End Processor (SFE), which uses Gould's NP1 minisupercomputer running under the UTX/32 implementation of Unix. The Universal Input-Output Microengine High Speed External Interface Adapter, or UIOM/HSX (for short!) operates at up to 100 Megabits per second and is a point to point connection between Gould's NP1 System Bus and Cray-2, and the X-MP, X-MP EA and Y-MP Unicos systems. Gould regard the inefficiency of front end computers in maximising the processing capability of supercomputers as a major bottleneck effecting the productivity of such systems. The SFE is intended to decrease the unproductive time that supercomputer users waste while waiting to retrieve or download large files to and from front end systems. Gould says that tests carried out on the adapter at Cray's Wisconsin facilities transferred data from the Cray X-MP to the Gould NP1 at 51Mb per second through Cray's HSX channel. Although the UIOM/HSX only operates on Cray's HXS channel Gould are confident that it will be adapted for other systems in the future. In addition both Gould and Cray are said to be actively involved in the proposed HSC standard outlined above.

NAT WEST UPGRADES NETWORK WITH NCR, BRITISH TELECOM

The UK's National Westminster Bank is embarking on the implementation phase of a multi-million pound operation to set up a branch network computer system covering the whole country. The aim of the network, which will encompass voice and data traffic to and from all branches and departments, is to reduce the massive amount of paperwork the existing accounting system necessitates. Nat West also hopes that the new system will cut response times for both staff and customers accessing information. In the first stage, already underway, branch interface equipment to support existing devices is being installed, and NCR Corp has supplied and installed 2,300 of its 7000 Series systems as branch processors. Sold predominantly in the US as continuous processing point-of-sale controllers in the retail industry (UX No 111), the 68020-based 7000 Series will be migrated to Unix from its current proprietary operating system. Used as a high speed transaction processor for accounting, the 7000s support NCR's Mirian local area network, which in turn is linked to Nat West's X.25 Digital Integrated Network (DIN). Hosts on the network are two IBM 3090 mainframes, located in London and the East Midlands, which will handle the network administration. The second stage of the operation involves the replacement of existing Burroughs 290 systems with British Telecom M1500 terminals and printers. 16,500 Wyse Technology terminals have already been modified for BT by London-based Wyse dealer Trinitec Ltd, and are being installed and maintained by British Olivetti. Nat West expects them all to be in place by early 1990. BT project manager David Hine says that of the 8,500 terminals already installed, at least 90% are now on line, and that future enhancements to the system could mean BT supplying an additional 10,000 terminals to Nat West.

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Demand for Sun Microsystems' workstations and servers from the UK Ministry of Defence is reportedly stepping up, especially for secure systems, although Sun also supplies board level products for integration into specific military environments: now the company has appointed Technitron Systems Ltd of Ascot, Berkshire, as a UK Defence Integrator to distribute systems to the MOD as part of a turnkey solution.

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And Sun has just released SunMathematica, its version of Champaign, Illinois-based Wolfram Research Inc's Mathematica package (UX No 186) which can perform calculations in all areas of mathematics, and includes numerical, symbolic and graphical computations and acts as a high level programming environment: Sun is targeting education, science, engineering and finance as potential markets for the product which becomes available in January of next year priced at £1,500 per CPU, with discounts offered to educational establishments.

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Australian systems manufacturer Labtam Information Systems Pty, Braeside, Victoria, has launched an 80386-based multiple data bus system aimed at both the general purpose multi-user and dedicated workstation market: the V32 runs Unix V.3 and includes a 20 MHz cpu, intelligent I/O controllers and interleaved static column memory, reports Computerworld Australia, and has three main buses - Multibus, SCSI and an internal 32-bit memory bus.

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And Bell Technologies Inc has launched itself in Australia as part of the Lionel Singer Corporation: Bell Tech Pacific will sell on the Bell version of Unix V/386 and Blit workstation graphics software, as well as 386-based hardware and add-on cards.

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Sybase Inc was expecting it a little earlier, but Ashton-Tate Corp now says that the SQL Server, in which Microsoft Corp is the third party, will be shipped on or before April 10 next year: it had originally been promised for delivery this quarter.

The MAI bid for Prime seems to mark the end of another era, that of the second-line minicomputer manufacturer, dealt twin death blows by the rise and rise of merchant microprocessor performance and the migration to Unix: DEC, by virtue of its size and the breadth of its product line, and Hewlett-Packard Co by virtue of the strength - and quality - of its peripherals manufacturing, have thrown off the minicomputer straitjacket, but the dismally slow growth of the likes of Data General - unless its ambitious joint venture with Nippon Telegraph & Telephone Corp pays off, Gould, Concurrent et al suggests that they have little to look forward to as independents but lingering decline.

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The mention of Unix above may raise an eyebrow or two, but once a company is forced to backpeddle on its proprietary operating system and architecture and adopt an industry standard, however desirable that may be from the point of view of the user, the firm's a priori raison d'être disappears, and its survival depends on its being able to offer what three or four others by definition are also offering, at lower cost and with better support and service - and it's an unhappy fact that in those circumstances, the big get bigger, some of the small can survive because of their very low cost base, but the medium-sized either combine or disappear.

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Canadian Imperial Bank of Commerce has upped its commitment to MAI Basic Four Inc's bid for Prime Computer Inc to \$412.5m in senior debt financing for the \$20-a-share offer, half the total senior debt financing required for the proposed acquisition, and the figure includes the \$325m already reported: the bank also says it is confident, under current market conditions, that it can arrange a syndicate of other banks to provide the balance of senior debt financing needed for the bid; it had been promised for delivery this quarter.

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And Prime Computer Inc has agreed with MAI Basic Four Inc in federal district court in Boston not to seek protection immediately under Massachusetts state takeover laws from the hostile bid for Prime from MAI: according to court documents, Prime agreed not to begin legal actions seeking to enforce or invoke the Massachusetts laws unless it gives MAI at least three days' warning before taking the action, but the agreement doesn't prevent Prime from invoking the law; as a result, the hearing on MAI's suit against Prime was adjourned indefinitely.

Cray Research Inc may or may not have a team looking at the concept of a hypercomputer with hundreds of processors for the mid-1990s: John Rollwagen, president said it had, Seymour said the announcement was premature, and poured cold water on the idea: at all events, the Cray Y-MP is going better than expected, with orders for six for delivery next year, and Cray now reckons it may get more of the things away in 1989 than the dozen it had been looking at - but although the value of unit sales is rising, more machines are being leased, which tends to flatten the growth in revenue.

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Pick Systems Inc, Orange County, which is to establish Pick Japan in partnership with Nippon Steel Co and other local interests as its first foreign subsidiary, has plans firm plans to apply to join the Open Software Foundation alternative Unix vendors' club, with a view to offering its database technology at the database evaluation sessions due at the beginning of next year.

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Gossip on the Comdex floor is that there are only three user interfaces that have a real chance in the bidding for the Open Software Foundation's standard front-end to AIX Unix - and two of the three, AT&T Co's Open Look and DEC's DECwindows are effectively ruled out for political reasons, leaving the Hewlett-Packard Co, Microsoft CXI, announced on Wednesday as the likely winner.

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Hewlett-Packard Co looks set to overtake Unisys Corp in terms of turnover next year - though of course about 25% of its business is not directly computer-related: the Palo Alto company yesterday reported net profit for the year to October 31 up 27% at \$816m on turnover that rose a sturdy 22% to \$9,831m.

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Minisupercomputer manufacturer Elxsi Corp, San Jose, made a third quarter loss of \$3.5m, and has had to cut its workforce by another 20% or so after production schedules for a major new computer slipped. The company cut its workforce 10% in the spring, and the new cut means that its workforce is down another 50 people to about 190. The schedule for testing and shipping the new Pegasus 6460 64-bit computer have slipped by a quarter.

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ARCHER GROUP BECOMES UNIX INC - AT&T JOINS

With hopes for a reconciliation between AT&T and the Open Software Foundation fading fast, the Archer Group of Unix System V.4 supporters has made its next move, putting the organisation on an official footing with a new name, new president, and an official list of members. The name, Unix International Inc, appears to have been on the cards for some time (UX No 189), but is not the AT&T spin-off of its Unix activities that many were expecting. Unix Inc, which includes AT&T as a member along with twenty-eight other companies, will instead "guide the future development of Unix System V". Apart from AT&T, the members are: Amdahl, Arix, Computer Consoles, Concurrent, Control Data, Convergent, Data General, Fujitsu, Gould, HCR, ICL, Informix, Intel, Interactive Systems, Lachman Associates, NEC, NCR, Oki Electric, Olivetti, Oracle, Prime, Pyramid, Sun Microsystems, Texas Instruments, Tolerant, Toshiba, Unisoft and Unisys. Two names - Micro Focus and Motorola - are not included as members, despite being amongst the original list of Archer supporters. Organising chairman, as expected (UX No 205) is Don Herman, a retired NCR senior executive who was founding chairman of the Corporation for Open Systems. No indication of funding as yet, but according to Herman, Unix Inc is seeking additional members. Originally scheduled as a worldwide satellite-linked launch, the announcement was instead very low-key, and no further details on structure, membership and operating strategy were given: these will now be released "over the coming weeks".

APOLLO SEEKS BIG INVESTOR; MENTOR A SECOND SOURCE

Sources on Wall Street and in the industry say that Apollo Computer Inc has privately let it be known that it would welcome an investor capable of giving it a large infusion of cash, according to Information Week - and the betting is that any buyer that emerges will be Japanese. The two companies named as possible investors are NEC Corp and Mitsubishi Electric, and an investment by a Japanese partner is seen as a means not only to give the workstation builder the additional working capital it needs, but shore it up against the possibility that it will be the victim of a hostile bidder. If it is faced with a hostile bid, Apollo, which reported combined losses of over \$10m for its most recent two quarters, could seek refuge from one of big OEM customers, with Siemens AG the one with the deepest pockets. Meantime Apollo's biggest single OEM customer, Mentor Graphics Corp, which this month extended its relationship with Apollo with a further \$100m of business over 18 months, wants to reduce its dependence on Apollo by finding a complementary workstation from another supplier, and is reportedly looking at offerings from IBM - the RT presumably, although possibly the 9370 - from Sun Microsystems, and DEC.

DEC ADDS MID-RANGE FILE SERVER FOR WORKSTATIONS

DEC has boosted its workstation business, now second in shipments only to Sun Microsystems, with the introduction of a high capacity file server designed to support large networks of workstations, this time using its VAX 6210 and 6220 mid-range systems as the base hardware. The VAX Fileserver 6200 series provides up to 2.5Gb disk storage and high performance input/output for VMS, Ultrix, and mixed workstation environments. Systems are pre-configured with software to allow file service and network management capabilities, and come with tape drive, system console and networking hardware and software. VMS-based servers include VMS/Ultrix Connection software with Sun's Network File System (NFS) support for Unix and Ultrix workstations, VAXcluster software, VMS services for MS-DOS to allow PC connections. Ultrix-based servers come with a two-user licence for centralised file management, network support and a server licence: they support Unix workstations through NFS and TCP/IP, with DECnet/Ultrix software for communications to DECnet networks. Prices start from £212,000 for VMS and £183,000 for Ultrix versions: conversions to full timesharing VAX systems are available.

"MOTOROLA'S 88000

IS A DIRECT COPY OF CLIPPER!"

Vice president of Intergraph Corp's advanced processor division Howard Sachs, in London this week to introduce the Clipper Risc 300 CMOS processor and reveal plans for a 60 MIP ECL version, has claimed that the rival Motorola 88000 RISC processor "is a direct copy of the Clipper". The company is currently awaiting the outcome of several pending patent cases before deciding what, if any action is to be taken regarding the 88000's alleged impersonation. Motorola meanwhile has strongly denied the accusation. Clive Gay, European microprocessor marketing manager, says that the two are "worlds apart" and that Clipper "barely meets the cycles per instruction standard set for RISC processors anyway". According to Andy Pinckard of MIPS Computer Systems, both chips take a common approach by incorporating proprietary memory management and cache units within the processing unit. Sachs said that out of the 18,000 units Intergraph has shipped since the Clipper 100 was introduced back in 1986, 80% have gone into Intergraph itself, while the remaining 3,600 have been distributed to specialised users such as High Level Hardware and benchMark Technologies, and as samples to major companies, including Philips. Rated at 13 MIPS and 4.5 MFLOPS, the Clipper includes a 32-bit integer CPU, 64-bit floating point unit and two 4 K-Byte caches and memory management units on a six layer printed circuit board measuring 11.5 x 7.5 cm. It is available in 44MHz or 50MHz clock speed versions, with the 10 MIP, 44MHz version already utilised in Intergraph's 3070 Unix-based workstation (UX No 204). The company also plans a 60 MIPS emitter-coupled-logic (ECL) version of the C300 RISC due out in 1989, and a next generation Clipper C400, with on-board vector processor, will be introduced in 1990.

JAPAN TAKES AT&T'S PIXEL MACHINE

Sharpening up its image processing skills, Sumisho Electronics Systems, a subsidiary of Sumitomo Corp, has acquired Japanese distribution rights to AT&T Co's Pixel Machine - remember it? We wrote about it in August last year (UX No 140), and it uses up to 82 of the company's DSP 32 signal processors to create what AT&T reckons is the world's fastest mini-supercomputer, with a speed of 640MFLOPS (down from 800 16 months ago!); it can be used "almost real-time" to produce complicated images and Sumisho expects the PXM 900 to take market share away from the other mini-supercomputers such as Stellar Computer's GS1000, sold by both Mitsui and Asahi Chemical; the nine models in the series sell for from \$81,300 to \$244,000.

CMOS 80286 FROM AMD "WILL RUN 16-BIT SOFTWARE FASTER THAN 386"

Denied masks for the 80386 by Intel Corp, official iAPX-86 second source Advanced Micro Devices Inc, which depends on the Intel family for a substantial part of its revenue, is somewhat stymied and left with two options: it can either develop its own 32-bit part fully compatible with the 80286, or it can continue to enhance the existing part, and for the moment, it is following the latter course. The company has announced that in the second half of next year, it will begin sampling CMOS versions of the 80286 - for which Harris Corp is at present the sole US source - in speeds up to 25MHz: at present the fastest 80286 is made by Harris and clocked at 20MHz. AMD is also promising CMOS versions at 16MHz and 12MHz. It claims that by the end the year its 1988 shipments of 80286s in all speeds will total 3m, and is hopeful that a Dataquest forecast that 80286 shipments will be 10m in 1990 will come good. The company argues that the 80286 runs 16-bit code 20% to 25% faster than the 80386SX, and 5% to 10% faster than the 80386 when measured on the Norton Information System, Landmark Speed, MIPS and Dhrystone benchmarks - and that as almost all current software is still 16-bit, it doesn't make much sense to pay almost twice as much for a 32-bit machine at this stage.

DAISY/CADNETIX SET OUT MERGER TERMS

Daisy Systems Corp and Cadnetix Corp have now got it together, and jointly announced this week the principal terms and conditions of the agreement under which Daisy will acquire Cadnetix for \$6.50 cash and \$3 principle of convertible debetures for each Cadnetix share out: definitive agreement is expected shortly, and Daisy now says the deal will go through as long as it receives acceptances with respect to 50.1% of the shares of Cadnetix by December 13 - if more shares are tendered, they will only be accepted pro rata; those who don't tender will have to settle for more paper, with the cash element scaled down to \$3.78, with \$5.72 in convertibles - and the same formula will apply to excess shares if more than 50.1% are tendered; and to ensure that the deal is wrapped up this time, Cadnetix has granted Daisy an option to buy an additional 5m shares at \$9.50; of the cash element, \$68m will come from Daisy's working capital, the \$27m balance being put up by Cadnetix itself in the form of a loan

JAPANESE ODYSSEY

FOR INTEGRATED MICRO PRODUCTS

Consett, County Durham Unix microsystems builder Integrated Micro Products Ltd, whose name shot round the world when it acquired the Parallel Computers arm of General Automation Inc a couple of months back, is bubbling with news of another coup, this time in Japan. The company, which claims four of the top five Indian manufacturers as OEM customers, has won an agreement from Swire Transtech Ltd, part of the Hong Kong-based Swire Group to market its VMEbus boards in Japan under an agreement Integrated reckons will bring in £1m a year.

CULLINET LOOKS FOR BRIGHTER FUTURE IN OPEN SYSTEMS

After twenty years in the software business, most of it tied to the IBM mainframe world, Cullinet Software has been having a pretty hard time of it over the last two years. The reason, according to UK managing director Robin Dahlberg, was the "shuddering halt" experienced in that marketplace in 1986. "Customers were telling us we needed to support departmental systems, or we wouldn't be around very long", said Dahlberg. In fact, Cullinet's blinkered dependence on the IBM marketplace led to it missing both the rise in interest of departmental and distributed databases, and the new popularity of relational databases over the older generation of hierarchical systems such as Cullinet's IDMS. The result was heavy losses, as the company sank 24% of its yearly revenues on research and development in an effort to catch up. Last May, Cullinet laid off 19% of its workforce in order to drive its expense level permanently down. But during those two years, the company claims to have re-thought its approach to the software market, and through acquisitions and internal development is now ready with its new Enterprise range of products (UX No 205), initially aimed at VAX/VMS systems, but with Unix versions due early next year, and IBM versions "within a calendar year". The technology behind the new products - which include an SQL-compliant relational database, applications builder and generator, and an expert system development tool - comes largely from three acquisitions made during 1986 and 1987. The database originates from Californian-based Esvel Inc, which arose from the same stable of ex-IBMers that also resulted in the formation of Sybase Inc - hence the similar client-server approach taken by both Sybase and Cullinet in the database design. Applied Development Corp provided application development software, and Distribution Management Systems artificial intelligence skills. Cullinet rates its Enterprise:DB database for VMS at 43 transactions per second running the TP1 benchmark on a VAX 8820, which it says far outperforms Oracle's recently launched Version 6, and credits its Enterprise Builder and Generator with similar high performance, due to its ability to output third generation language code through a target machine's optimised compiler. The Unix version of Enterprise:DB is due within three months, and a full set of Unix tools are also under development.

WYSE PUSHES LOW-END MULTI-USER BUSINESS WITH SCO DEAL

Wyse Technology, Santa Cruz, California, has moved into the multi-user market by signing an agreement with the Santa Cruz Operation to add its own moniker to Xenix. Wyse/SCO Xenix will be sold on the IBM PC AT compatible Wysepc 386 super-microcomputer in the UK, incorporating extra features such as file locking and interprocess communication. The company says it can now offer a single source for CPU's, terminals and software to customers building multi-user systems. Wyse's Steve Jamieson hopes these offerings will encourage buyers to move away from minis and reassess the use for PC products, restructuring the low end of the multi-user market. Wyse/SCO Xenix costs £695 and will be available in the UK from mid-December through Logitek Computer Products in Manchester, and Swindon-based Kode Ltd.

68030-BASED APPLE MACINTOSH SE SET FOR JANUARY

All is less than complete harmony in Apple Computer Inc's future products department if a story in the San Francisco Examiner is to be believed. The range of forthcoming Macintosh machines reported from various sources is so large and varied that it lends weight to the paper's report, attributed to Apple insiders, that product plans have been changed repeatedly as a result of internal squabbling at Apple. "There are constant discussions about what's going to happen next," comments one source. Trigger for the story was the intelligence that in January, Apple will bring out a Motorola 68030-based model of the Macintosh SE, offering performance comparable with that of the Macintosh IIx. The box is said to come with 4Mb or 8Mb of main memory, optional 40Mb or 80Mb disk, two expansion slots and built-in black-and-white VDU - making it appear to be aimed at similar markets to those addressed by the IIx (UX No 198). Apple declined comment on the Examiner's report: the paper also looks for the 12 lbs lap-top Macintosh, a cheaper Macintosh II, and a top-end II for launch during 1989.

SAS SYSTEM NOW AVAILABLE ON SUN WORKSTATIONS

The SAS Institute, which launched a Hewlett-Packard version of its data analysis and 4GL package popular with mainframe corporate users back in May, after carrying out a major re-write of the package from PL1 and assembler language into C (UX No 178), is now ready with a version for Sun workstations. Along with a DEC version for Ultrix, Sun hardware was high on the list of SAS customers present at the last SAS user group meeting held in Copenhagen. SAS, claimed to be the largest privately held software company in the US, has set up a strategic alliance with Sun in order to market the new version, which runs on Sun-3 workstations under SunOS: a Sun-4 version optimised for the SPARC architecture is also underway. Sun claimed that user demand for the SAS software on Sun had "exceeded all expectations", and that the new port would be complementary to existing SAS users on IBM mainframes, DEC VAXes, DG, Prime and Hewlett Packard minicomputers and PCs, due to the communications options already in place. SAS now claims to have software installed in 95% of Universities worldwide, and 90% of Fortune 1000 companies.

UNIX SECOND TO DOS, BEATS OS/2 IN COMDEX POLL

According to a poll carried out by Byte magazine at Comdex earlier this month, the most popular operating system on desktop computers by the end of 1992 will be an extended version of DOS. Around 34% of those polled anticipated that DOS with an added front-end environment such as Windows or Desqview would be the most likely candidate for future use, with standard DOS accounting for a further 19% of the vote. The Unix vote was similarly split between extended, graphical versions and standard Unix, with 19% voting for Unix with a graphical front-end such as AT&T's Open Look, and 10% opting for an unadorned version. The total Unix vote thus accounted for nearly a third of all votes cast, at 29%, leaving OS/2 trailing behind on 18%. Votes for the Mac operating system amounted to only 3%, a score partly accounted for by the dominance of IBM-oriented PC products that is usually in evidence at Comdex, something the organisers hope to redress at the Spring show in Chicago, which will include a special "Maxdex" section.

CONCURRENT PLANS SINGLE PLATFORM PARALLEL RISC SYSTEMS "WITHIN TWO YEARS"

The newly revived Concurrent Computer Corporation, born out of the merger between Masscomp Computer and Concurrent Computers last September (UX No 191), has been revealing its intentions for the future, beginning with the launch of two new processors, one next week followed by another in January. The New Jersey based company, expects total revenue in excess of \$400m by the end of 1989, in a real time market estimated to be around \$4.8 billion. Yesterday, in a symbol of the marriage, Masscomp moved into the old Concurrent premises in Cork, Ireland, where all Concurrent systems outside the US are to be produced in future. Integration of the two companies is to proceed in three stages, beginning with the merging of their respective computers, and a single platform is to be adopted within two years: this will involve hardware based around a standard RISC processor, currently unnamed, but thought to be the Motorola 88000. Criteria for the chip include parallel processing power in the 25 to 50 MHz range implemented in ECL technology, interrupt category performance, and the ability to develop up to three generations of systems based upon the chip. Concurrent executives appeared to be showing more than a passing interest in Gould Computers, which is expected to be sold off as a going concern by new owners Nippon Mining. It has also signed a large deal with an unspecified Japanese firm for the supply of an inter dealer broking system.

HEWLETT'S 68030-68882 COMBO STATION IS JUST \$5,500

Keeping up the relentless price pressure at the low end of the workstation market, Hewlett-Packard Co has introduced a new model in its Motorola 68000 family HP9000 Model 300 series of HP-UX Unix stations with a rock-bottom entry price of just \$5,500. The Model 340 is based on the 68030 - speed unspecified, but presumably 16MHz - with 68882 floating point co-processor, and Hewlett rates it at 4 MIPS. It comes in two monochrome and three colour configurations. The 340M supports high-resolution graphics on a 17" mono monitor and is pitched at mechanical design and drafting, and software development. The 340MH has a 19" 1,280 by 1,024 pixel screen with Hewlett's enhanced two dimensional graphics with hardware support for vectors and polygon drawing, pixel replication, area pattern fill and bit-per-pixel addressing, and is aimed at computer-aided design; it is \$8,000. The 340C+ has the same graphics, but adds six colour planes on a 16" 1,024 by 768 colour graphics monitor: aimed at electrical engineering logical and physical design, general scientific computing, software development and two dimensional mechanical design applications, it costs \$8,500. The 340CH moves up to eight colour planes and two overlay planes on the same 16" screen, and costs \$11,000. The 340CHX adds to that an integer graphics accelerator that provides an optimised 32-bit word co-ordinate interface directly to the graphics pipeline, thereby approximately doubling the performance of the Model 340CH, and includes functions such as pan and zoom, and costs \$16,000. Prices include 4Mb memory, RS232C and parallel ports, local network interfaces, the HP-UX 6.2 version of Unix, and the X Window System. No shipment dates were given, but it sounds as if they are available immediately.

NEXT YEAR'S MODEL - THE NEW GENERATIONS OF UNIX

In the first of a series of three articles, we look at just what will be on offer to the users of the new generation of Unix software, due to hit the market towards the end of 1989. This week, we concentrate on "official" Unix V.4. In part two, we will look at the Open Software Foundation's implementation based around IBM's AIX kernel. The third article will try to assess the effects a split Unix standard will have on users of the system.

Whatever long-term effects the formation of the Open Software Foundation has on the Unix market, one thing at least has already been achieved. For the first time since it began marketing Unix, AT&T has had to become acutely aware of its responsibilities to Unix licensees, and is now falling over itself to involve those customers in the future evolution of the system. Instead of simply presenting Unix V.4 as a fait accompli, AT&T has found it a necessity to try to convince its licensees that it can offer both better technology and a comparable deal to the OSF alternative - including early access to the developing code, a relaxation of previously restrictive licensing, and assurances that it will not build into the system features that will favour either its own hardware, or worse still, that of its partner Sun Microsystems. Over the last few months, AT&T technical and marketing executives have hit the road, with seminars and briefings on the next generation of Unix, version V release 4.0, which is not ready for beta testing until the third quarter next year (UX No 203).

Merging versions

Attendees of the AT&T roadshow have been presented with the message that the main objective of V.4 is to complete the merging of Unix variants into the mainstream System V effort. This began with a joint development with Microsoft Corp, resulting in the release of Unix System V/386 Release 3.2 earlier this year, the first version to merge Xenix compatibility into Unix System V. By cornering the Intel-based PC market early with Xenix, Microsoft had built up a wide base of binary compatible software for Xenix which quickly became the most widely installed Unix version, despite deficiencies in the hardware that ran it. AT&T showed little interest in this market until the rapid rise in 80386-based products became evident. The merge, which according to AT&T Unix Europe's Chris Papayianni includes "all major features of Xenix needed to support the migration of applications - but not everything", will not have a major effect on the market until the primary Xenix marketers such as the Santa Cruz Operation and Interactive Corp bring out their own releases under the Unix trade name early next year. System V Release 4 will add compatibility with the University of Berkeley, California derived BSD variant of Unix, used mainly by scientific and technically-oriented companies, including Sun Microsystems with its SunOS implementation. Although not complete, BSD conformance will include the most important BSD interfaces, such as BSD commands, the Berkeley fast file system derived from File System Switch (FSS) and VNodes, support for Berkeley sockets, and Remote Procedure Call (RPC).

The base standards for V.4 will remain Posix and the X/Open Common Applications Environment (CAE), which remain the major reference points with the OSF's alternative Unix. Conformance to Posix has been achieved by enhancing the System V signal handling with BSD extensions, and adding job control and multiple groups and ownership facilities. X/Open conformance meant only "small adjustments to system parameters".

Merging Unix, Xenix and BSD functionality has inevitably involved extensive kernel-level changes, and resulted in a larger kernel. This has been somewhat offset by a modular approach, according to Papayianni, which will allow AT&T to unbundle unwanted functionality for specific licensees. "Office automation users, for instance, might have no desire to take the RPC mechanism". This approach is being reflected in more flexible licencing terms, including the relaxation of the previous requirement in the Unix V.3 licence to take and implement the Remote File Sharing (RFS) facility along with Streams, whether or not it was wanted (UX No 203). V.4 builds on the networking framework set up in V.3 by including a much wider use of the Streams network protocol facility, which was previously limited to little more than RFS protocols. AT&T now admits that Sun's Network File System (NFS) has become the de-facto distributed file system standard, and offers both systems through the file switch mechanism across a variety of transport providers. TCP/IP has been ported on top of the Transport Layer Interface, leaving AT&T the option of migrating to the OSI seven layer model at a later date. The BSD sockets facility - described by Papayianni as "a compatibility issue" - provides a high-level interface to TCP/IP.

Real-time support

The other main areas stressed in AT&T's roadshow sessions have been support for real time programming, and internationalisation. Real-time support in Unix V.4 will include user controlled process scheduling, high resolution timing services, and non-blocking asynchronous input/output. Internationalisation, vital if AT&T is to push Unix into European, Middle Eastern and Far Eastern markets, will be supported by the removal of the use of the eighth bit in utilities and library routines, character set support for non-ascii and multiple code sets, support of the ANSI C X3J11 national conventions for collating, numeric representations, date and time etc, and new message handling facilities. Another important issue - that of security - is also being worked on, although it seems more likely that the B2 security rating currently being worked on will be released not in 4.0, but in a later release, probably 4.1.

Working on the DOS model set in the PC market, and on the success of Xenix in the Intel-based hardware arena, AT&T is banking on its single version of Unix as the basis for its ambitious plan to provide a binary-compatible software base for each of the major hardware platforms on which Unix runs. Applications Binary Interface (ABI) standards, basically subsets of the System V Interface Definition, are currently developed or under development for Intel, Motorola, Sparc and other processors, and if AT&T has its way, will offer the possibility of shrink-wrapped compatible software for Unix - something which, as yet, the rival Open Software Foundation appears to have shown little interest in.

UNITECH PUTS RAPID RECALL UP FOR SALE

Unitech Plc of Reading is selling off its high technology distribution business interests in order to finance the purchase of a US power supply manufacturers, Veeco Instruments. Unitech owns three European distributors; Rapid Recall Ltd of High Wycombe, Bucks in the UK, and semiconductor and communications distributors Celdis Italiana in Italy and Nye Enatechnik in West Germany. According to Unitech financial director Charles Arnold, the sale is necessary to finance the acquisition of Veeco, which will cost around £180 million. Combined turnover for the three companies last year was over £100 million, said Arnold, almost half of Unitech's total last year of £217 million (CI No 986). Rapid Recall, which distributes low-end DEC, Hewlett Packard and IBM PS/2s and 6150 hardware, achieved a turnover of £35 million last year. Arnold said that the sale was "attracting a lot of interest in both the UK and the US", and anticipated that a sale would be completed by the end of the year. Unitech, which will now concentrate on its power supply, connectors, and control products manufacturing business, is expected to raise between £60 and £90 million through the sale.

ABS IN MERGER/TAKEOVER TALKS WITH SHORTLANDS

UK Unix dealer ABS of Brighton is currently holding talks with accounting software specialists Shortlands Computing Services Ltd, Maidenhead, Berks, with a view to the negotiation of a merger or acquisition of the two companies. Shortlands employs 55 people and had a turnover last year of £1.7 million. It sells on its Imperial Gold financial management software in over 100 countries, and has specialised in installations that require multi-company, multi-currency facilities: most recently the company won its largest ever distribution agreement from Australia's largest independent computer company, Computer Power Pty Ltd, which is 30% owned by Rupert Murdoch. Computer Power, which recently acquired the Today fourth generation language technology from BBJ Computers (UX No 198), will have exclusive distribution rights to the product in Australia, worth an initial \$2.5 million, and with a second \$2.5 million phase to come. In the UK, Shortlands sells on systems using Unix-based hardware from ABS, which is part of the Trafalger Group. Talks are expected to reach a conclusion this week.

IBM TO CLARIFY THE RULES ON LICENSING MICRO CHANNEL

IBM is having to walk such a fine line between winning all that is due to it for its personal computer patents and so putting off potential cloners of the PS/2 that the box becomes a premium product for dyed in the Blue wool users only that it is having to bend in patent negotiations in order to reach agreements at all. The company says it plans shortly to issue guidelines on its patent policies, and meantime will anyway not try to collect fees on Micro Channel patents that have yet to be awarded, which suggests that cloners will have between a year and two years' grace on those before IBM sends it its bill for them. Companies say that IBM's approach and tone is much more conciliatory.

STEVE CHEN TOUTS FOR FUNDS

Steve Chen's Supercomputer Systems Inc, which said at its foundation a year ago that it wanted to win potential customers for its machines to help finance the development of the planned SS-1 scientific supercomputer, is now actively seeking five or six companies in areas such as oil, aerospace, cars, drugs and utilities to invest in the firm. Companies that decide to take the plunge will become limited partners in a research partnership formed - and presently equally owned - by Supercomputer Systems and IBM when IBM decided to back the Eau Claire, Wisconsin company last January. The aim is to convert the partners into equity investors when building of the SS-1 begins; each is expected to get under 5% of the equity.

PRIME COMPUTER ALLEGES DREXEL IS MASTERMINDING MAI BASIC BID

Natick minimaker Prime Computer Inc threatens to open up a can of worms in its challenge to MAI Basic Four Inc to reveal who is really behind MAI's \$970m tender offer for Prime (UX No 206). The Prime lawsuit against MAI alleges that the inventor of junk bond finance for takeovers and buyouts in its modern form, Drexel Burnham Lambert, exerts ultimate control over the bid via a series of partnerships that include senior Drexel staff, that it has effective power of veto over the bid, and that it concealed these facts from the Securities & Exchange Commission in its filings about the offer. Prime also alleges that one of the hidden partnerships, Cambrent Financial Group Inc, was formed by Drexel's takeover financing specialist Michael Milliken and his brother - both subjects of a grand jury investigation and defendants in a Securities & Exchange Commission lawsuit that alleges takeover fraud. Prime is effectively claiming that Drexel's not only advises on, but actually controls, hostile tender offers that stand to earn it large fees, a suspicion that has been held for some time by the US government authorities investigation Drexel's. MAI insists that the allegations are "totally inaccurate," saying that all decisions in the bid are being taken by the board of the Tustin, California company. But if Prime's allegations stick, they are likely not only to scupper the MAI bid, but to make it much harder for highly leveraged takeover bids to be mounted in the future.

JAPANESE USER GROUP TALKS INTERNATIONALISATION

The Japan Unix Society sponsored its 12th Unix Symposium in Osaka earlier this month, attracting over 200 Unix researchers and corporate software developers to hear presentations by AT&T Unix Pacific on System V Release 3.2, research on the X Window System, details the Japanisation effort on Adobe Systems' Postscript page description language, user interfaces and Streams: an outstanding feature of the symposium was the presence of a group of gaijin (that's their fairly rude word for non-Japanese people), from various US manufacturers - Apollo Computer, DEC, IBM, Hewlett-Packard Co, Sun Microsystems, - and Bull from France, plus a participant each from China and Taiwan; these people had earlier participated in a Unix Internationalisation Workshop under the joint auspices of /usr/group, and at the meeting, solutions were proposed for localisation strategies, kernel internationalisation, and the handling of different collation sequences through use of setlocale and a new tool for defining collation sequences; the results of the meetings will go to the IEEE Posix committee for inclusion in drafts for worldwide comment.

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Convex Computer Corp, which struck up a deal with Apollo Computer for its Network Computing System in October last year, says it will be delivering NCS systems from the second quarter of next year, and has now begun taking orders: NCS, recently the subject of similar deals from Hewlett-Packard and IBM, will allow workstation users to have transparent access to the Convex C series across a network.

- 0 -

Cypress Semiconductor Corp has formed the 13-employee Cypress Southeast Design Center in the Mississippi Research & Technology Park alongside the state university in Starkville: the centre is chartered to develop advanced design techniques while working on new products for Cypress in CMOS and in BiCMOS.

- 0 -

The UK arm of Relational Technology, developer of the Ingres relational database, has formed a new VAR system house group with the aim of increasing its business obtained through value-added resellers from 20% to 40% over the next two years: RTI UK, which last year had an £11 million turnover, currently has 30 VARS, and hopes to treble that number with the new marketing programme.

- 0 -

TFB Rair has re-written its Conveyancing Partner software using MF Systems' MetaFour fourth generation environment package (UX No 199): Conveyancing Partner II, which was previously written in Basic, can now be adapted to the varying requirements of different practices, according to the company.

- 0 -

Jensen and Partners International (JPI) of Mountain View, California, a company formed by several former Borland employees including Niels Jensen and some colleagues from the Turbo Pascal development team, is planning to release an O2/2 version of its Top Speed Modula-2 product in February of next year: the single pass compiler, with WordStar-like commands and pull down menus, will support Presentation Manager and will be compatible with the DOS version, with the price set at \$195.

The crews of US space shuttles have taken Grid laptops with them on most missions, and starting next year, they will run Xenix System V.

- 0 -

Unisys Corp has decided to pay \$7 cash, and not \$2.80 cash and \$4.20 shares, for its Convergent Inc buy.

- 0 -

Portland, Maine-based Prospero Software Inc, which has a UK branch in London SW13, has launched its Prospero C package for the Atari 520, 1040 or Mega ST: it is an ANSI C implementation with GEM-based programmers environment, and costs £129.95 including VAT in the UK, although early orders can take advantage of the introductory price of £99.95.

- 0 -

Mannesmann Information Systems Ltd says it has sold over £1.5 million worth of Unix systems in the UK since the launch of its 4100 series two months ago (UX No 184), mostly into the legal and manufacturing industry: the systems originate from OEM deals the company has placed with Arix Ltd and Computer Consoles Inc, and support up to 256 users.

- 0 -

Relational Technology Inc has introduced Ingres/386 for systems "in the Compaq/386 class" running Interactive Systems Unix 386/ix implementation of Unix V.3: 25Mb disk space is needed to run the system, which includes the Ingres development tools, database manager, and front-end user facilities.

- 0 -

Concurrent has won an order worth \$3m for an air traffic control system from the German Federal Agency of Air Traffic Control: it is based on a new implementation of the ANSI/Mil Spec 1815a Ada language, claimed to be three times the speed of the previous version, which will be released early next year.

- 0 -

Nixdorf Computer Limited in the UK has signed up with Oxford-based systems house Logical Choice for its UniVerse Pick under Unix software for the Targon/35.

Deductive Systems Ltd, the recipient last week of a Small Firms Merit Award for Research and Technology (or SMART) from the Department of Trade and Industry, says it will use the prize money - which could amount to over £80,000 - to further its research work into transputers: Deductive's object-oriented Generis development environment, highlighted here back in September (UX No 195), is described as "the world's first intelligent knowledgebase management system", and currently runs on VAX, Sun and Hewlett-Packard hardware, but the company is currently working on a parallel processing implementation using an array of the Inmos chips.

- 0 -

Cambridge-based Torch Computers Ltd, which has now changed its name to Torch Technology Ltd, has launched an "X Technology Group" to sell on the company's X-Window products: so far it has produced an X11.2 version of X for Sun workstations, a marketing agreement with Hewlett-Packard, sales to Tektronics and Schlumberger in the US, and an X-based version of its OpenTop user interface for Unix systems.

- 0 -

British Rail's Railfreight Distribution division, which includes the Freightliner, Speedlink Distribution and Railfreight International operations of BR, is to replace its Honeywell DPS 6 system with a Hewlett-Packard 835SE minicomputer to run turnkey accounting software implemented by Unisoft Ltd using the Oracle relational database management system: the software contract is worth \$400,000, and the installation will include optical disk equipment for on-line document storage and retrieval facilities.

- 0 -

Sun Microsystems was demonstrating a 16-megabits per second token ring network between its workstations at Comdex a few weeks back: the company, which supports Ethernet, says it believes that token-ring could speed its growth into new markets, particularly in the commercial field, and that it will expand current IBM connectivity options, but still thinks that Ethernet will continue to be the leading technology in the engineering and scientific marketplace.

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STC-ICL BIDS TO ACQUIRE COMPUTER CONSOLES INC

Perhaps following up a suggestion that was first mooted here back in August (UX No 193), the UK communications giant STC plc announced plans this week for a major acquisition into the US with a bid for Computer Consoles Inc, Waltham, Massachusetts. CCI chairman and chief executive John Cunningham effectively put the company up for sale a few months back, when he made it plain that he was looking to sell his own 10% stake. STC says its primary interest in CCI, for which it has offered \$12.80 per share, valuing the company at \$168 million, is on the telecommunications side: Director of Communications Terry Ward pointed to CCI's \$400m customer base, built up through the company's computerised directory assistance installations and now progressing to digital switching and intelligent communications networks - markets where STC sees its own future. But STC subsidiary ICL also stands to gain from the deal: its top-end Clan systems, now known as the DRS Series 400 are based on CCI hardware, and the company has based its office system strategy around CCI's Officepower software. One cause of contention could be top-end RISC strategy: ICL has committed to Sun's SPARC processor for its future systems, while CCI is shortly to release its own 25 MIPS processor (UX No 177) - although it will also be offering SPARC emulation through an agreement with Hunter Systems. CCI also has a major OEM contract with Unisys Corp in addition to its ICL and STC agreements. The offer is being recommended by the Directors of CCI, who together own 12% of the shares, and Terry Ward anticipates formal completion of the acquisition by mid-January.

OSF TELL ITS MEMBERS "AT&T TALKS ARE OFF"

Attempts to resolve the Unix schism between the Open Software Foundation and AT&T with the newly founded Unix International Inc have finally come to an official halt. Although it has been known for some weeks that talks had been making little progress due to the disagreement over the two kernels, the official line remained that negotiations were continuing. At the end of November, however, OSF President Henry Crouse sent a letter to all OSF members setting out the Foundation's position. "The central obstacle to AT&T's joining OSF is its insistence that the OSF board of directors mandate System V Release 4 in its entirety as OSF/1, rather than permitting users to select the best available technologies through the open system process", said the letter, which went on: "I have reached the conclusion that further discussions with AT&T would be non-productive, and have decided to suspend them". Crouse then assured members that "we have no intention of allowing these, or any other activities, to impact our commitment...to deliver a complete open software platform by the end of 1989". The letter, which reached OSF members the same day as Unix International Inc was announced (UX No 208), also dealt with the Foundation's "extensive re-evaluation of our original decision to use AIX-3 as the basis for our core operating system". The conclusion was that "AIX-3 is a technically superior base for OSF/1", and that the licensing terms would provide "equitable and stable licensing terms by granting OSF the right to provide source and redistribution rights directly for all or any portion of the code. It also places a ceiling on license revenues". AT&T spokesman John Scalco said AT&T had been "surprised" by the letter.

DU PONT ORDERS

50,000 CLIPPER RISCs

Intergraph Corp has received a welcome boost for its Clipper reduced instruction set processor, still widely regarded as the outsider in the RISC race despite its early start and current leadership in actual sales, through a new deal with the electronics imaging division of E I Dupont de Nemour and Co. The deal, with Intergraph's Advanced Processor Division in Palo Alto, California, is for supply of the C100 and new C300 RISC microprocessors, the fastest of which is currently rated at 10 MIPS. The contract envisages volume purchases of up to 50,000 units or more. Although Du Pont is not saying anything about the products in which it will be used, Howard Sachs, vice president of Intergraph's Advanced Processor Division, says that there are "some very state-of-the-art things in graphics and imaging" going on. This is no doubt closely connected with Du Pont's interest in small UK company benchMark Technologies, which Du Pont acquired back in April (UX No 177). benchMark introduced its first Clipper base products at the end of 1986 (UX No 105), and more recently moved into high performance image processing boards and systems. Du Pont, the world's sixth largest corporation, has said that it is aiming to expand its electronic processing business aimed at the printing industry, and is likely to use the Clipper-based hardware for colour electronic imaging systems for use with laser scanning hardware.

NCR OPTS FOR

MOTOROLA 88000 RISC

NCR Corp, which builds all its Tower Unix machines around the Motorola 68000 family, has been playing its cards with regard to a top-end CPU close to its chest, but has now taken the plunge and opted to stay true to Motorola. The 88open Consortium Ltd says that NCR has joined the organisation, which was formed to establish market acceptance of the 88000 microprocessor architecture.

OLIVETTI JAPAN MARKETS AUSTRALIAN EXPERT SYSTEM FOR WORKSTATIONS

Olivetti Corp of Japan, in which the Italian holds 80% and Toshiba Corp the remaining 20%, has started marketing XL, a knowledge-based systems development language - rather than just a shell - licensed by Olivetti from Intelligent Systems Research Pty Ltd of Melbourne, Australia: the language will initially be marketed on the Sun Microsystems Inc Sun-3 workstations Toshiba buys OEM from the Mountain View company and sells as the AS3000 line, and possibly later on Olivetti's own workstation, which is rumoured to be in the pipeline for launch in Japan next year; following the source code licence Olivetti signed with the Australian company for an initial \$200,000, the Ivrean has been working with the Victorian for around 18 months, converting XL to run in Japanese and customising it for Japanese market requirements; the XL language has already been used to develop systems in various industrial environments in Japan, the most recent including a fault-tree analysis expert system for nuclear power stations developed by Dr Kumamoto, of the Engineering Faculty of Kyoto University.

ALTOS COMPUTER PUSHES AHEAD WITH FLOATATION ACQUISITIONS

Altos Computer System Corp's plans for a European flotation (UX No 108), are progressing at breakneck pace, and the company also plans a European engineering and design centre, which could lead to local assembly and eventually manufacture of its machines. Altos says that it will decide within the next two weeks whether to buy a European engineering company or to establish one from scratch. The company also has not yet decided whether it will float its national subsidiaries individually, or the European division as a whole: either way, the parent back home in San Jose will retain a majority stake. It is currently discussing the options with unidentified merchant banks in London, but it is likely that any sale of shares will be by way of a placing with large institutions, with a local quotation following later on.

WANG SETS TOP-END ECL PEGASUS CPU, NEW CMOS CPU TO REPLACE 7000

A major modernisation of its VS business processor line is expected to be announced by Wang Laboratories this week, involving a replacement of the VS300 processor in its VS7000 family with a new CMOS CPU that offers twice the performance of the present one but will cost Wang 30% less to manufacture. Also on the way according to analysts at Paine Webber is a new top-end processor in ECL code-named Pegasus, that will deliver four times the performance of the VS7000, for delivery in third quarter 1989.

OSF MEETS FOR FINAL GRAPHICAL INTERFACE SESSIONS

Boston, Massachusetts is the venue for the final evaluation session to be held by the Open Software Foundation in its efforts to choose a standard user interface technology for members. According to one of the participants, IXI Limited of Cambridge, only six of the original 23 companies selected for presentation to the OSF are still in contention. Although the original plan was for OSF to reach a decision on the interface by early December, the process has been delayed by the Foundation's decision to incorporate technology from more than one company into the final product. IXI says it has been shortlisted for the graphical shell component of the interface with the X.desktop product, but there are apparently now three other categories which together will form the complete OSF offering: toolkits and widgets, user interface management systems, and window managers.

...AS IXI TEAMS WITH SYSTEM STRATEGIES

UK software house System Strategies is designing a family of X Window system based products designed to simplify the task of systems administration on Unix installations. Based around IXI's X.desktop, the product, called Xadmin, provides an icon-based view of system resources. The family of products includes XaPrint for print control, XaUser for creating users and changing permissions, XaSystem for system control and performance monitoring, and XaNet for local area networks. Available at the end of the first quarter of next year, and IXI says it will marketing the product to its existing X.desktop users. Ealing-based System Strategies Ltd was formed recently to market performance measurement and optimisation tools for Unix systems. Its first product was U-View, a real-time graphical performance monitor running on an IBM PC which when connected via a serial link to the Unix system, could be used to monitor up to 30 system variables on a real-time basis for tuning and measurement purposes. Variables measured by U-view include CPU utilisation, disk system, terminal I/O, memory and networking facilities. Prices start at £300.

HP NETS \$19M IN MAJOR 68030 WORKSTATION DEALS

Hewlett Packard has won two major workstation sales in the US over the last few weeks. The first was for 170 3D colour graphics workstations, sold to Lockheed Aeronautical Systems Co for aircraft design work. The workstations were HP's 9000 Model 360SRX machines using the Motorola 68030 processor, the same model which was also the subject of an order from McDonnell Douglas for a further 216 workstations. Total value for the two orders has been estimated at around \$19 million.

ACER'S XEBRA HEADS NEW GENERATION OF X TERMINALS

In a recent presentation to journalists on DEC's X-Window based DECWindows interface, Richard Treadway, Manager of the DECwindows Program, said that he expected new types of terminals taking advantage of bit-mapped screens and X-Windows software to begin making its presence felt on users desks over the next year or so. One of the earliest of these products, costing under \$1,000, has been introduced by Acer Counterpoint Inc, San Jose, California. Named Acer Xebra, the terminals integrate the X Window Server with Ethernet and are claimed to provide the touch and feel of a workstation at the price of an ordinary terminal. Xebra is aimed at users of Unix host systems who want a cheap interface with the X Window System, and is the first product to result from Acer's recent development alliance with Locus Computing Corp, Inglewood, California. The X Window system software is a customised version of the Locus X-Sight package, enhanced by both companies to integrate the X Server with networking capabilities. The Xebra Model 100 has a 10 MHz Intel 8086 CPU with 640 Kbytes of RAM, 512 Kbytes of ROM and a built in Ethernet controller which supports both thick and thin versions. The monitor is a 14" monochrome bit-mapped display, and in the event of a network failure Xebra can operate as a standard terminal over an RS-232 serial line to the host. According to Pauline Lo Alker, President of Acer Counterpoint, Xebra has been created to fill the void between expensive workstations running X at the high end, and low cost terminals without windowing, graphics, or network connectivity at the low end. A series of Xebra terminals are to be introduced between now and next year, each designed for a specific set of application requirements including more local processing power, a colour display and an external floppy disk drive.

...AND KUBOTA SIGNS FOR

VISUAL TECHNOLOGY'S X-WINDOW BOX

Others that appear to be on a similar trail to Acer Counterpoint include Network Computing Devices Inc (UX No 207), and the long-established Visual Technology Inc, Lowell, Massachusetts. Now Visual has signed a \$2 million OEM pact with Kubota Computer Ltd, which markets MIPS Computer Systems processors and Ardent Computer Inc's graphics superworkstation in Japan. The agreement is for the Visual 640 X Display Station, which acts as the server in a client-server architecture of X Windows.

APRICOT PAYS £1.2m TO TAKE OVER AUSTRALIAN DISTRIBUTION

Apricot Computers Plc has finally confirmed that it is taking its Australian destiny into its own hands, saying that it has acquired the Apricot-related business of its Barson Computers Australasia Ltd affiliate in Sydney for about £1.2m. The cash will come from own resources. Barson had sold over 6,000 Apricot computers in Australia since 1984, most of them to government departments.

AMERICAN CIMFLEX GAINS QUOTE IN TEKKNOWLEDGE MERGER

Robotic systems and computer-integrated manufacturing pioneer American Cimflex Inc, which uses a real-time implementation of Unix on its Motorola 68000 family, is going public via a merger with publicly-traded Teknowledge Inc. Shareholders of the Pittsburgh, Pennsylvania company will hold 58% of the merged entity, which will change its name to Cimflex Teknowledge Corp, and holders of the Palo Alto, California based artificial intelligence software pioneer will hold the balance; no further details were given. American Cimflex chairman and chief executive Romesh Wadhvani, and president and chief operating officer Sushil Trikha will carry those posts over to the new company. The chairman and president of Teknowledge will resign but remain as directors and consultants to the new company after the merger, with president Peter Weber becoming vice-chairman. The flagship product at American Cimflex is the Merlin, which can handle 20 lbs at a range of 40" with repeatability of a thousandth of an inch. The Unix-based controllers can handle enables robots to be programmed as single units, as part of a work cell or as part of a complete factory automation system, and Cimflex - originally American Robot - also makes work cell controllers, vision systems, factory workstations and develops related software. Teknowledge, which put itself up for sale in September, last year combined its S.1 and M.1 expert system shells to create the much more ambitious Copernicus system for DEC VAX and for Sun Microsystems and Apollo Computer workstations. Teknowledge reported a loss of \$1.1m on turnover down 62% at \$1.7m for its fiscal first quarter after a loss for the year to June 30 of \$9.7m on sales of \$14.4m. American Cimflex made a \$48,000 profit on \$35.4m sales for calendar 1987.

UNIPLEX SIGNS WITH INFORMIX FOR INTEGRATED SOFTWARE

Office automation specialists Uniplex Ltd, Hemel-Hempstead in Herts, has formalised its relationship with database software developer Informix Software Inc, and has signed a ten year agreement to take a licence to parts of the source code of Informix's relational database management system for incorporation into the Uniplex II Plus office automation suite. Applications developed with Uniplex's own database will in future be 100% compatible with other Informix programs, and Informix tools, such as Informix 4GL, will be usable with Uniplex.

MEMEX TEXT RETRIEVAL HEADS FOR US MARKET

The upgraded version of Textract, (UX No 206), the hardware based text retrieval system from Memex Information Systems, East Kilbride, Scotland, looks set to be a big success in the US: Memex has announced a three year deal with US systems integrator Analytical & Research Technology, Washington, to supply \$2.5m worth of systems, and Lonnie Dixon, president of ART expects Textract "to win over \$1m of business in the next 12 months."

AGFA USES SUN WORKSTATIONS FOR PRESS PUBLISHING SYSTEM

Agfa-Gevaert AG, Leverkusen, West Germany, has launched a software package aimed directly at the corporate publishing market. Based on the Sun workstation, Agfa-Press falls between low-end desktop publishing systems and full-blown commercial software for professionals, into a market which, according to Dataquest figures, will grow to £604m in Europe by 1992, and will account for up to 10% of corporate expenditure on high technology. Press is intended to combine all of a company's literature production requirements within one framework, from newsletters through to books, and is able to present a single corporate identity throughout its literature in a document style. The package can combine text, diagrams and photos from various sources, and gives the user access to a broad range of layouts and styles: finished pages can be previewed on screen before printing. It can connect to a variety of data sources and peripheral devices through a local area network. Agfa says the product will also take account of the multi-lingual requirements that the single European market should necessitate.

CPT MOVES TO SYSTEMS INTEGRATION WITH DOS/UNIX PRODUCTS

Low-cost microcomputers with off-the-shelf software all but killed off most of the companies that flourished in the 1970s and early eighties concentrating on dedicated office automation systems. Now, like Wang and NBI before it, Minneapolis-based CPT Inc has re-focused its business towards greener climes. The company says that it should now be regarded as a systems integrator rather than a manufacturer, and will concentrate its future business on the long-standing OEM deal it has set up with Convergent Technologies (UX No 5). CPT has recently released its EasyAccess software, designed to allow users of its Unix-based Office Dialogue System (ODS) access to the DOS world. EasyAccess can be used with IBM PCs and compatibles in local or wide area networks, and allows an ODS system to support both Unix and PC workgroup activities such as the sharing of printers, file storage, data communication links and departmental or business applications. With the package, users only require one server (the ODS) to link dumb terminals, PCs and CPT document processing workstations into groups sharing applications, resources and communications links. In addition, EasyAccess enables users to access virtual drives in Unix, which have added security and multi-user protection features. To support EasyAccess, the IBM or compatible workstations require a minimum of 512K RAM, PC-DOS or MS-DOS software and MICOM 5210 Ethernet board or RS-232 port, along with ODS-IP software. EasyAccess has already been implemented in the City of London by legal firm Taylor Garratt. CPT is also set to release a new image file system using optical disks in January, and, continuing its standardisation efforts, will implement WordPerfect on its systems in February.

...AS WORDPERFECT ADDS EIGHT NEW UNIX VERSIONS

WordPerfect Corp has released eight new versions of its word processor for the Unix environment. It will now run under SCO Xenix 386 for PCs, MicroPort Unix and DEC's Ultrix, as well as on the AT&T, Hewlett-Packard 9000/300, Sun 3 and Pyramid machines. WordPerfect for Unix is identical to the 4.2 PC version of the program, and the company intends to expand its marketing drive into the Unix market, developing its technical support and market consultancy operations. Other WordPerfect programs, including WordPerfect Office, are also scheduled for conversion to Unix in the future.

SCO PORTS PM/X FOR MICROSOFT

The Santa Cruz Operation has been talking about its involvement with Microsoft and Hewlett-Packard in the development of the much vaunted Presentation Manager/X (PM/X), intended as a common graphical front end to both Unix and PC-based systems, (UX No 207). The existing Microsoft Presentation Manager software is to be integrated with HP's Common X Interface, but must first be translated into C to make it portable. SCO, which is to undertake the translation, admits that even the final version of PM/X will not give all the functionality of Presentation Manager, but says it is to make additions to X Windows Version 11 to ensure it is as complete as possible. The porting should be complete by the middle of next year, according to SCO, and an initial version of PM/X, which could be used by program developers, will be available from all three companies towards the end of next year.

SUN STOPS DIRECT DATABASE SUPPORT

Sun Microsystems is to stop selling and supporting its SunIngres and SunUnify database products, users were told at the Sun user group meeting held in Miami this week. According to a source from Sun, database products are extremely complex and difficult to support, and are subject to quickly changing technology. Sun says it will remove the products from its price list from November 13th, and will give existing users a two month's window to make the transition from Sun to Relational Technology Inc (RTI) or Unify for their support contracts - finishing on February 7th for Ingres, and at a later, as yet undecided date for the newer SunUnify product. In place of selling database products itself, Sun says it intends to form strategic partnerships with several of the leading database companies, including Oracle, RTI, and Sybase for its internal needs, and will work with those companies with the addition of Informix Corp - but no mention of Unify Corp - to provide database technology for its customers, with joint marketing, sales, and engineering agreements.

SUN MARKETS RUGGED REMOVABLE DISKS

And Sun is to include shock-protected removable disk drives within its special products group marketing program. The Data Shuttle 2000 disk chassis from MDB Systems, Basingstoke, Hants, a designer of ruggedised computer systems, was built specifically for Sun-2, 3 and 4 workstations: it allows one or two five and a quarter inch disks to be mounted in individually shock protected removable canisters. Membership of the special products group means the shuttle will be supplied as an optional extra with full technical and back up support from Sun.

THOMSON COMPUTERS IN FUNDING RE-SHUFFLE

York-based software house Thomson Computers, best known for its Sea-Change applications generator, has raised another £750,000 in venture capital from its existing backers and from Renaissance Holdings Plc. The cash will go to replenish Thomson's coffers, apparently seriously depleted following the major effort to develop the company's latest product - the multi-database version of Sea-Change (UX No 205), developed in co-operation with ICL and the subject of a joint marketing agreement between the two companies. IBM is also to market the package. But the backers demanded a high price for the money, resulting in the resignation of founder and managing director Neil Thomson, and "several" redundancies among the company's staff of 40. According to new managing director Rob Lawford, development costs were considerable. "It became obvious over the last couple of months that further funding was going to be necessary". The company said that despite the re-structuring, the core development team remains, and chairman Simon Gurney said that "with the re-financing package, a realistic development plan which includes an OS/2 version of Sea Change, we are confident of achieving steady and profitable growth".

PRIME SEEKS MOVE INTO GEOGRAPHIC SYSTEMS WITH WILD LEITZ

Prime Computer Inc has signed a letter of intent to buy a majority stake in Switerland's Wild Leitz Group geographic information systems division. The 100-strong Swiss unit manufactures the Unix-based System9 geographic information system, which runs on the Sun 3/60 workstation resold by Prime as its WS3600 series. The unit will be turned into a new company - name and location unspecified - in which Wild Leitz will hold a minority stake; so far, no other financial details have been released. The move ties in with the Natick company's continued attempts to diversify into vertical markets, typified by its recent acquisition of Computervision Corp. Prime chief Tony Craig expects the geographic information systems market to grow at an annual rate of 30%, and plans to enhance the System9 product to meet the "developing needs of users". In addition, the company plans to combine sales forces in a targeted worldwide marketing drive. Prime will concentrate on selling System9 bundled workstations to state and local government departments, while Wild Leitz will continue its focus on surveyors and engineering services. The letter also covers a long-term technology exchange; the pact should be definitive by year-end. The systems store, analyse and display geographical data. Key selling points for the System9 are appear to be its feature-oriented 3D database and continuous mapping capability.

TECHNOLOGY FOR BUSINESS PARENT CLF GETS YEOMAN BID

CLF Group Plc, parent of Technology for Business and Rair Ltd as well as being a player in the computer leasing market, looks set to become Irish. It is recommending that shareholders accept an offer from the rather smaller Shannon, Eire-based pure leasing company Yeoman Group Ltd, putting an estimated value of £88.1m on CLF. That translates to 250 pence per ordinary and 140 pence per convertible, representing premiums of 60.3% and 38.6% on the pre-suspension price last Thursday. The offer is £1.25 in cash and 0.3521 Stock Units in the merged company - to be called CLF Yeoman Plc - for each CLF ordinary, and 70 pence cash and 0.1972 Yeoman Stock Unit for each convertible. There is an all-cash alternative of 250p and 140p, an all-share alternative with a limit on the total number of shares to be made available for it, and a loan note alternative for those whose tax position makes this desirable. Yeoman Group is primarily a "big ticket" leasing company benefitting from the shelter provided by the Shannon Customs-Free Airport Zone, but, like CLF, is also in car leasing in the UK; it does not expose itself to residual value risks. It reported pre-tax profits equivalent to £7.8m on turnover of £36.7m for the year to February 28, 1988, when it had receivables of £210m; in the six months to August 31, receivables had risen £235m, and it did £5.4m pre-tax on turnover of £26.9m. CLF did £4.1m pre-tax on turnover of £51.5m in 1987. Irrevocable acceptances have been received with respect to 16.9% of the CLF ordinary shares, and insitutions speaking for another 30.5% of the ordinaries say they presently plan to accept.

CRAY ADDS AUTOMATIC PARALLELISM WITH AUTOTASKING

Cray Research Inc, Minneapolis, Minnesota, has added a new automatic parallel processing capability to its CFT77 Fortran compiling system. Called Autotasking, the software is said to restructure programs automatically for processing in parallel, removing the need for users to write complex code specifically for parallel environments. Cray claim that on an eight processor system, Autotasking performs program execution up to 7.8 times faster than a single processor system. It is available with version 3.0 of the CFT77 and can be used on the Cray Y-MP, X-MP EA, and X-MP multiprocessor systems running under Cray's Unicos version of Unix. Parallel processing performance varies according to the number of processors applied and the amount of parallelism a program contains, which has traditionally meant a high level of programming expertise is required. This restriction has tended to limit the spread of parallel systems. But Autotasking is only one of a number of recently announced systems that claim to automatically decompose programs for users. The Cray system follows hard on the heels of Artificial Intelligence's Strand88 (UX No 205), a language which performs the same task, allowing the transcription of sequential code written on concurrent machines such as workstations to the parallel environment, or being used as a writing tool in its own right. Strand88 can embed to Fortran, C, or Cobol code for transcription, whereas Autotasking is only available on Cray's Fortran compiler at present - the company intends to migrate the system for other languages in the future. And Japan's Institute for Computers Of Tommorrow (ICOT), is also set to release a similar fifth generation language for parallel processing called Kernel Language 1, (KL1), although there are no details as yet on when it will become commercially available.

MICRO FOCUS JOINS THE OPEN SOFTWARE FOUNDATION

Marking something of a temporary U-turn in its position on the Unix schism, Micro Focus Ltd has decided to join the Open Software Foundation. In addition, the company was conspicuous through its absence on the Unix International Inc membership list, announced by the Archer Group yesterday (UX No 208). The company still maintains, however, that its long-term stance is a neutral one, and says it will also join Unix International as soon as it offers membership terms similar to those from the Open Foundation.

HEWLETT-PACKARD FORMS UNIX, LANGUAGES COMPUTER DIVISIONS

Hewlett-Packard Co is rearranging the furniture yet again in its Computer Systems Group, this time creating two divisions and an operation in it. The General Systems Division will be responsible for the HP9000 multiuser-systems business and for development of the HP-UX Unix-based operating systems, with Bernard Guidon as general manager. The Data and Languages Division includes the laboratories devoted to databases, languages and tools, under Waldo Jay Richards as general manager. And the Data Systems Operation will be responsible for the HP1000 minicomputer line for factory-floor markets, which does not yet have a manager.

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With heavy buying from West Germany, foreign investors now hold 48.3% of the voting A shares of Norsk Data A/S, foreign holdings of which are limited to 49%, and the quota is therefore considered full, says the Oslo Stock Exchange: since its problems, rumours that another European would seek a large stake in the company have been flying, with Nokia Oy and Nixdorf Computer AG most often named - but ICL is also seen as a suitable partner.

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ICL is to provide the Project Director for the pan-European Eureka Software Factory project with 12 other companies, including AEG, Sema Group, Nixdorf, Softlab, Cap Gemini Sogeti, Matra and Norsk Data.

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Silicon Graphics Inc plans to open a European manufacturing plant by the end of next year, in preparation for the 1992 Single Market. No indication of which country as yet.

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AEG AG's Modular Computer Systems Inc in Fort Lauderdale, Florida, has won a co-operative marketing agreement with computer engineering services company Generex Corp in nearby Cape Canaveral: Generex will supply software and hardware engineering and system integration services for ModComp's Classic and new Tri-Dimensional Series of real-time mini-computers; under the non-exclusive agreement, the two will jointly pursue specific segments of the energy and transportation markets, and may move on to factories, too.

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Tandem Computers Ltd, the UK subsidiary of US fault tolerant systems supplier, described as "nonsense" reports that it is about to join forces with ICL to sell retail systems here and in North America; one report suggested that ICL would lead joint bids for retail contracts in the US if the deal were agreed in January - a suggestion Tandem's marketing and communications manager Simon Negus described as "naive", ICL admitted the two companies have collaborated on defence contracts in the past, but described the reports as "speculation" on which it would not comment.

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Massachusetts Institute of Technology expects to be granted the "first significant" patent involving superconductor technology for the wire-making process for ceramics that it has licensed to American Semiconductor Corp, Cambridge.

IBM is now shipping OS/2 Extended Edition 1.1 in the US, including the Local Area Network Requester, and a Pre-compiler Applications Programming Interface in the database manager, for \$830: also out is the OS/2 LAN Server 1.0, which provides local area networking for interconnected OS/2 Extended Edition 1.1 and MS-DOS machines on IBM Token-Ring and PC networks, offering resource sharing for printers, disks and serially attached devices and facilities to define, control and manage net access - price \$1,040.

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Toshiba Corp has developed a graphics expansion board for use in engineering workstations, and claims that in Sun Microsystems Inc workstations it speeds up graphics processing 100-fold: the VMEbus board is based on a 32-bit image processor, the T9506, with 3Mb of data memory, and is \$24,200 for 100 copies.

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And Toshiba Corp and Sumitomo Metal Industries Inc have jointly developed "the world's first" specialised image analysis machine, and are calling the thing the ImageVisor: it is claimed to reduce the time required for image analysis processing by between 90% and 99%; the hardware, which incorporates a pipeline processing technique commonly used in supercomputers, and parallel processing of graphics parameters, will be manufactured by Toshiba, and Sumitomo Metals will build an engineering workstation based on it, to be sold through Toshiba and Far East trading, a medium-sized machinery trader, at \$100,000.

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The Burlington, Massachusetts-based Honeywell-NEC Supercomputers Inc marketing company formed to sell NEC's SX series of large scientific machines in North America is depending on its existence on winning some sales for the new top-end NEC multiprocessor that runs Unix, which will be Berrett told Computer Systems News that he believed the partners would call it a day if the new machine does not win them some serious business.

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Honeywell Inc, Minneapolis has decided to sell its custom semiconductor business in Colorado Springs, Colorado, which employs 1,100 and inter alia makes the chilled CMOS chips used in the Control Data Corp ETA-10 scientific supercomputer, and also chips for its Honeywell Bull Inc affiliate: the decision will result in a significant charge against its fourth quarter figures.

Meantime on the IBM supercomputer front, Steve Chen's Supercomputer Systems Inc says that its first machine will run under IBM's AIX implementation of Unix and support the IEEE floating point standard that is also used in IBM's RT Unix machine - but not in System 370.

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The latest source of superconductor technology for American Superconductor Corp, Cambridge, Massachusetts is the US Oak Ridge National Laboratory of Oak Ridge, Tennessee, which has agreed a collaborative programme for development of capacity of high-temperature superconductors.

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NEC Corporation has announced that its NEC Information Systems unit in Boxborough, Massachusetts will begin production of Astra XL Unix systems built around the Motorola 68030 chip before year-end.

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What do you think of OS/2? "A necessary evil, because it's both necessary and evil," Peter Norton of Norton Utilities fame told Microbytes Daily - and as for MS-DOS, it "goes on forever,": the founder of Peter Norton Computing Inc, Santa Monica, California foresees personal computer users eventually falling into three camps, which he terms "OS/2, High-DOS, and Low-DOS," with OS/2 being accepted mainly by "MIS types" in large corporations who want multitasking, what he termed "Unix-like features without throwing away MS-DOS;" he reckons that most users will remain with MS-DOS, with "High-DOS" users the equivalent of today's "power users" - but there will be a huge market of "Low-DOS" users, with 80286 machines quickly becoming the standard, he said; and as for OS/2, well the memory chip shortage has set it back by two or three years.

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Pick specialist General Automation Inc, Anaheim, California says that its discussions for a possible business combination with Irvine, California-based Syfa specialist WesPac Technologies Inc have to date failed to produce a workable agreement acceptable to both companies, although additional proposals have been received from WesPac in the past week that are under consideration: the General is also considering two other proposals for direct investment in the company, and says it also got a written offer from a UK-based investment group to buy the UK operations, but that terms satisfactory to General Automation could not be negotiated, and discussions were therefore ended.

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GERMANY PUSHES FOR X/OPEN CONFORMANCE SIEMENS AND UNISYS TAKE FIRST ORDERS

Standards consortium X/Open is continuing its campaign on the continent with the announcement that several government projects in the Federal Republic of Germany are to adopt to its standards. The Federal Ministry of Trade and Industry, and the Federal Trade and Industry Office have specified X/Open conformance as one of the requirements for their evaluation of tenders for work. Unix is already a standard for the Ministry's multi-user systems, and the adoption of X/Open is seen as a further commitment to the general standardisation efforts of the EEC. And the provincial government of Berlin has also announced that tenders for its information system at the House of Representatives (the ADIS Project), must conform to X/Open standards. The open systems drive is based on a need to prevent the creation of "islands of information" in the Berlin Civil Service according to project director Herr Staszak. A public record office for parliamentary documents with access via videotex is to be developed in the future. In addition the provincial government of North-Rhine Westphalia has made X/Open standards compulsory for multi-user systems below mainframe level in the struggle to meet rising demand and shorter deadlines. Germany currently leads Europe in shipments of Unix systems, with 25.6% of the market compared with the UK's 17.3% in 1987, according to the latest report from IDC (see page four). and there are signs that the Germans are quickly gearing up for the single European market in 1992, by which time X/Open has predicted, open systems will represent 20% of the total market (UX No 186). In a further move, the German Federal Post Office recently announced that tenders for 100 data processing systems for telephone exchanges must conform to X/Open standards. According to Herr Scheib of the Central Telecommunications Technology Office (FTZ), it sees "standardisation in Europe as the most important factor in developing effective co-operation in the European post and telecommunications industry." Orders for systems have already been placed with two X/Open members, Siemens and Unisys.

GOULD BOOSTS ITS REAL-TIME LINE WITH CONCEPT 32/2000

Gould Computer Systems has upgraded its range of Concept 32/2000 family of real-time computer systems, including a top-end model said to be the world's fastest real-time computer. The 32/2040 features main memory which has a cycle time that matches CPU speed - effectively 100% cacheing - which provides deterministic performance. The system's static random access memory design provides a close coupling of cpu and memory, using a new high performance bus providing bandwidth of 293 Mb/sec - although SELbus compatibility with previous Concept hardware has been retained. Real-time features, including directly connected interrupts and interval times, have been added directly on the single-board VLSI CMOS cpu, which includes integrated floating point hardware, and according to Gould, Risc-like technology reduces the number of cycles to an average of 1.4 cycles per instruction. Running Gould's MPX-32 real-time operating system, a real-time Bare Machine Ada, or Gould's UTX/32 Unix implementation, Gould offers Ada, Fortran, and a range of programming tools for the machine. Aimed directly at the simulation marketplace, the Concept family will consist of three models, the 32/2020, 2030 and 2040, and will be commercially available in the third quarter of 1989.

NICHE SELLS OFF UK ARM IN VENTURE CAPITAL CRISIS

Venture capital start-up Niche Technology, established last year to develop hardware and software using the Inmos Transputer (UX No 153), has sold off its UK arm following financial difficulties. The company's Bristol-based operation has been acquired for an unspecified sum by its UK distributor, Transtech Devices of Penn, Buckinghamshire in a deal signed last week, after Niche ran into venture capital funding difficulties. Niche was the sister company of Niche Data Systems, Houston, Texas, producing Inmos International Transputer based solutions for Sun workstations, and began trading in August 1987. Transtech has acquired all Niche's UK assets, including its product line and most of its staff, with the exception of former president Ian Pearson. All of Niche's current trading agreements are included in the deal, and Transtech hopes to launch new Transputer based hardware and software products aimed at the high end of the market. A deal with Niche in the US to continue the development and production of transputer systems is "imminent", according to Transtech's Mike Cahill, who described the takeover of Niche UK as merely a "hiccup" in Niche's research and development programme - set to continue under the auspices of its new owner. Niche in the US, however, appears to be having its own problems: a spokesman declined to comment, except to say that the company is "looking closely at its sources of funding."

UNIX INC HQ

SET UP FOR END OF JAN"

A management team and separate headquarters for the newly formed Unix International Inc (UX No 208) is expected to be established by the end of January in the New Jersey area, and interim president Don Herman will make way for a permanent head by April, according to Computer Systems News. There will be a three-tiered membership, starting at a \$500,000 "principal" membership fee for large hardware vendors, moving down to \$100,000 for general membership and \$10,000 associate membership. Meanwhile, the expected spin-off of AT&T's Unix operations is still thought to be some time away from announcement.

INFORMIX INTEGRATES SQL DATABASE WITH VERITY TEXT RETRIEVAL

Informix Software Inc has signed an agreement with Mountain-View, California-based Verity Inc, allowing the two companies to jointly market Verity's Topic full text retrieval software in conjunction with the Informix line of SQL-based relational DBMS software from Informix. Users will be able to store and retrieve unstructured free text data from applications linked to Informix databases through a software bridge scheduled to be available from Verity during the first quarter of 1989. By linking this bridge with Informix-Turbo, users can integrate free-text retrieval capabilities in online transaction processing applications on hardware supported by Informix. Verity reports that it also has deals in place with Sybase Inc and Relational Technology, and that a deal with Oracle Corp is "imminent".

UNISYS CORP "TO RE-STRUCTURE BUSINESS NEXT MONTH"

Unisys Corp is set to announce a re-structuring of its operations next month, according to an internal memo acquired by Computer Systems News. The paper reports that three product groups will be established, including the existing Unisys Networks division, and new divisions to handle Computer Systems and Network Computing. Paul Ely, Chairman of the recently acquired Convergent Inc, will apparently take charge of the Network Computing Group, which will encompass the Convergent operations with Unisys' other workstation and PC business. Computer Systems Group, headed by Hollis Caswell, will concentrate on the Unisys mainframe business. The Networks division will continue with the management of the company's Timeplex Inc subsidiary. Unisys is said to be making the changes in response to its recent downturn in revenue growth.

ABS COMPLETES SHORTLANDS MERGER

ABS Computers of Brighton says it has now completed the acquisition of accounting software specialists Shortlands Computing Services Ltd, Maidenhead, Berks (CI No 1071). Shortlands, which recently spent £750,000 on the development of its latest multi-currency accounting system, Imperial Gold, said that the ABS offer was the best of several approaches over the last year: no price was revealed, but ABS is thought to have paid around £1 million for the company. ABS managing director John Elsdon said that Shortlands would retain its own identity, and gradually take over software development and support for the ABS Group, which is a master distributor for Zilog, Pyramid and Prime hardware in the UK: no redundancies are expected. Elsdon saw the move as proof that its parent, the giant shipping, property and construction company Trafalgar House, which this week revealed a 40% increase in pre-tax profits to £229.1m to September 30, was now committed to expanding its interests in computing services through ABS. The company is unable to report separate figures from Trafalgar, but says the addition of Shortlands will increase its size by half.

OSF SIGNS ROYAL DUTCH/SHELL GROUP - NOW HAS SEVENTY MEMBERS

The Open Software Foundation has signed up major systems users the Royal Dutch/Shell Group of Companies as members of the Foundation. Handling almost one tenth of the world's oil and gas, the Group are amongst the ten largest chemical business worldwide. OSF, which also revealed that the National Institute for Higher Education in Limerick, Ireland, and the Ecole Nationale Supérieure d'Ingenieurs Electriciens de Grenoble (ENSIEG) had also become members, bringing the total number up to seventy.

INTERACTIVE BUNDLES LOCUS, RTI SOFTWARE WITH 386/ix

Interactive Systems Corporation, Santa Monica, California, is forging ahead with the development of its Intel based 386/ix operating system in deals with Locus Computing Corporation, Santa Monica, and Relational Technology, Alameda, California. Interactive is to bundle the Unix server module of Locus's PC-Interface with the 386/ix, which will be available with the release of version 2.0 of 386/ix, due this month. The company will also market the DOS PC module of the PC-Interface through its distribution network. And Interactive has also bundled Relational's Ingres database management system with 386/ix - at no extra cost to end users it claims - for immediate availability.

FUJITSU CLAIMS TO LEAD WITH 4GFLOPS VP2000 SUPERCOMPUTER

Fujitsu Ltd is claiming to have leapfrogged the competition with its new VP2000 generation of IBM-compatible scientific supercomputers, saying that the machines offer peak uniprocessor performance of 4GFLOPS, more than twice the speed of the current generation. They are also claimed to use the world's fastest 1M-bit static random access memory chips. The VP2000s run Fujitsu's MSP rewrite of IBM's MVS/XA, and Unix is also supported. And, addressing the problem of dearth of applications, which has limited sales of the existing machines outside Japan, the company now claims 260 packages, and has set up development centres in the US and Japan to develop or convert many more. No price or delivery, but the VP2000s are likely to be marketed by Amdahl Corp internationally, and Siemens AG in Europe.

CASE EXPERTS UPGRADE EXCELERATOR REAL-TIME SYSTEM

UK computer-aided software engineering specialists Excelsator Software Products, Hertfordshire, has launched an upgraded version of its Excelsator/RTS, a PC based real time and embedded systems analysis and design tool. According to the company, which is a subsidiary of Index Technology Corp of Cambridge, Massachusetts, Excelsator 1.8a incorporates better verification and graph analysis, a step towards the provision of fully executable specifications, and the ability to simulate a system before any code is written. Popular in applications such as avionics, manufacturing process control, communications and systems software, Excelsator boasts that the autoflight system for a McDonnell Douglas commercial airliner is amongst its US applications. In the UK, the data processing features are used by BP and GEC, and its real time facilities are utilised in bond dealing. Excelsator runs on Sun and Apollo Unix workstations, IBM PC XT, PC AT and on the VAX station range and costs £5,600. Additionally, the company has announced the Customizer 1.8, which allows users and VARs to create systems development environments which support their individual requirements, basically an extended Excelsator/RTS system.

TOPOLOGIX, SUN TEAM TO SELL TRANSPUTER BOARDS

The Inmos International Plc T800 Transputer stars in a new combination claimed to enable Sun Microsystems workstations deliver the power of a minisupercomputer. Sun Microsystems Inc has agreed to joint marketing of the system with its developer, Denver, Colorado-based Topologix Inc. The Topologix Topology 1000 board includes four T800 Transputers, each with 1Mb to 16Mb memory, VMEbus, and the LogixOS distributed Unix-compatible operating system that runs native code on the Topology 1000 hardware and supports most Unix System V calls. It is intended to be used for artificial intelligence, simulation, financial modelling and image processing applications. A user interface written for Sun provides functions similar to other SunView programs; Parallel C, Parallel Fortran and Parallel Common Lisp are available. One or several boards can be used with Sun-3 and Sun-4 systems, and a Sun-4/260 with one board is claimed to deliver over 6 MFLOPS. No prices.

... AS MERCURY GIVES 64-BIT RISC BOOST TO SUN, APOLLO, DEC

And Sun's attempt to compete with Ardent and Stellar systems at the high end of the market has gained further impetus with the introduction by Mercury Computer Systems, Lowell, Massachusetts, of a 64 bit attached RISC processor slot-in board, the MC6400, which it claims, transforms workstations such as the Sun 3 and Sun 4 series into personal supercomputers. The MC6400 unit, which is designed to work in conjunction with the host CPU and operating system, is based on Weitek Corp's XL-8064 three chip set, providing 10 MIPS, 20 Mflops and a CPU time of 100ns. Currently, the MC6400 only supports the VME bus, but in mid-1989 AT bus support is expected to be added for the Sun 386i, Apollo workstations and PC ATs, and DEC's Q bus for MicroVAX and VAXstations will also be supported. Faster Weitek chips, also available in 1989 will reduce the cycle time to 80ns, boosting performance to 12.5 Mips and 25 Mflops. The board is specifically designed to accelerate C and Fortran applications in the general scientific and engineering environment, and operates with Unix V.3, MS-DOS, OS/2, VMS and Aegis. The MC6400 is available now as two separate boards fitting into a single VME slot on both the Sun 3 and Sun 4, four and eight megabyte versions cost £9,795 and £12,495 respectively. Some units have already been sold in the US and UK distributors Microprocessor and Memory Distribution Ltd of Reading says it is negotiating with UK companies in the areas of 3-D graphics, signal processing, and simulation, for orders.

IMP TAKES 88K UNIX FROM UNISOFT - V.4 FEATURES INCLUDED

Also with new Motorola RISC products waiting in the wings, the UK's Integrated Micro Products of Consett, County Durham, says it has become the first European beta customer for System V/88 release 3.2 from UniSoft Ltd, in a deal valued at \$150,000. Developed in conjunction with Motorola specifically for the new 88000 RISC chip, the new version gives users access to many of the features of the forthcoming Unix V.4 release - such as Remote File System release 1.2, the Networking Support Utilities Release 1.2, and the System Performance Analysis Utilities 1.0. The port also conforms to Posix and the Binary Compatibility Standard (BCS), developed by UniSoft and Motorola, and endorsed by the 88Open 88000 user group, to ensure portability of applications between systems without recompilation or relinking. The deal with IMP also covers the System V/88 optional networking extensions, including a TCP/IP transport provider, Network File System, and a set of Berkeley socket extensions.

X/OPEN ISSUES ITS LATEST PORTABILITY GUIDE

The first four volumes of the third edition of X/Open's Portability Guide have now been published - with the remaining volumes promised by March of next year. They include the first details of X/Open's networking and user interface specifications, such as the Transport Interface (XTI), for multi-vendor networking and programming interfaces to the services of OSI level 4, designed to work across different protocol stacks including OSI, TCP/IP and AT&T Starlan. Lyon based company Marben is currently developing a conformance test in XTI for X/Open as part of the EEC sponsored testing programme. A draft definition of X/Open Event Management (XEM) for event handling is to be published in 1989, along with window management programming interfaces based on the Library Interfaces defined by the MIT-lead X/Consortium (XLIB). In addition the definition for COBOL has been enhanced to align with the latest ISO standard, COBOL-85, and also included are the first results of efforts to achieve interworking between X/Open systems and PCs. Meanwhile, X/Open revealed that conformance tests for the X/Open branding scheme, announced in September of this year, will be available in mid-1989, and it expects "to see branded Portability Guide 2 systems emerge very soon." PGIII is published in the UK by Prentice Hall, Hemel Hempstead, Herts, and costs £75 for all seven volumes: tel 0442 21555.

MOTOROLA ADDS DecNET COMMUNICATIONS TO DELTA 68030

Motorola Computer Systems is increasing its assault against the DEC MicroVAX marketplace by adding DecNET communications facilities to its 68030-based Delta systems. The company's MicroDNet implementation of DecNET is claimed to give users full access to files and software on DecNET nodes without modification, additional hardware or software nodes. Low layers of the DecNET protocols are offloaded to Motorola's MVE373 multi-protocol Ethernet controller, co-exists with TCP/IP, and can communicate with DEC systems running the VMS, Ultrix and RSX-11 operating systems. According to Motorola's UK head of marketing, John Shouler, the Delta 3840, which uses a 33MHz 68030, offers a 150% performance advantage at half the price of a MicroVAX. "We expect a strong response" said Shouler. No prices, however, were available as we went to press.

..AS STELLAR DOES THE SAME FOR SUPERWORKSTATIONS

Motorola is not the only company to see the value of DecNET compatibility: superworkstation and server manufacturer Stellar Computer Inc, Newton, Massachusetts, has also implemented DecNET on its GS1000 and CS1000 range of systems, through an OEM deal with Bell Atlantic subsidiary Technology Concepts Inc of Sudbury, Massachusetts. Stellar will make TCI's CommUnity DecNET Phase IV compatible products available on Stellar products in the second quarter of 1989.

"EXPLOSIVE GROWTH" PREDICTED BY YEAR-END MARKET SURVEYS

It's the end of the year, so it's no surprise to see market research companies come out with their latest attempts at quantifying Unix sales and growth over the next few years. The market for Unix supermicros in the US will approach \$5 billion by 1992, according to a new report by Frost and Sullivan, New York, which is based on a survey of 5,000 users and vendors. Entitled "Unix on 32-bit supermicrocomputers market in the US", and costing \$2,200, the report suggests there will be an explosive growth in the demand for multi-tasking, multi-user computers, from unit sales of 76,000 in 1987, to 343,000 in 1992. Frost and Sullivan divides the general US Unix market into three groups. The non-commercial segment which includes academic, government and non-profit users is expected to increase from \$1.95 billion in 1987 to \$7.2 billion in 1992, the commercial non-technical market from \$1.95 billion to 4.8 billion, and the commercial technical group from \$2.6 billion to \$5.9 billion. Price performance ratios of supermicrocomputers will boost their sales at the expense of minicomputers and proprietary operating systems. Significantly the report does not expect Unix to overcome IBM's and Microsoft's efforts to establish OS/2, believing a dual Unix - OS/2 standard for 30386 systems will emerge, but does say Unix will expand its position as the dominant operating system for 68000 based systems. As far as Europe is concerned, a new report from International Data Corporation called "Unix Strategies Marketplace" suggests that the largest growth in small scale Unix systems has been in Spain. Medium scale systems are growing fastest in West Germany, which it also sees as the largest Unix market in Europe. IDC puts the value of Unix shipments in 1987 at \$1.92 billion - in comparison, the figure from rival research group Dataquest is \$2.4 billion. IDC's report will be available shortly - priced £1,950.

MOTOROLA TURNS DOWN MIPS FABRICATION

Following the reported breakdown of talks between Mips Computer Systems Inc and Motorola Inc over the last two months, Motorola has issued a statement saying that it will "under no circumstances sell or market an alternative RISC chipset". According to Computer Systems News, Motorola decided against becoming the fourth supplier of Mips RISC chips because of the damage it would do to the company's reputation. The statement said that Motorola would remain "totally committed to the 88000 architecture". Talks are thought to have begun after Mips secured a deal from DEC to supply the microprocessors for a new range of Risc-based Ultrix workstations, due out early next year. The deal could result in volumes orders from DEC, and both DEC and Mips are thought to have been interested in enrolling Motorola as a source. Currently, Mips has licenced LSI Logic Corp, Integrated Device Technology and Performance Semiconductor Corp to supply its processors. A company spokesman that "Mips has been talking to "most semiconductor manufacturers - Motorola is just one of several".

NIPPON TELEGRAPH SIGNS WITH ALLIANT

Nippon Telegraph & Telephone Corp's NTT Data Communications last week announced that it was getting into the highly-prized systems integration business, initially by joining forces with Alliant Computer Japan: Alliant has so far made 35 sales of its FX minisupercomputers in Japan, and the two are looking to install systems for plant design in engineering companies, and are also looking at computer-integrated manufacturing contracts; the minisupercomputer market is expected to grow at more than 40% per annum to reach between \$100m and \$160m next year.

HAMILTON HAS BERKELEY C SHELL FOR OS/2

Berkeley Unix buffs who have to get to grips with Microsoft Corp's OS/2 but are in dread of leaving their familiar security blanket can now feel much more at home thanks to a C Shell written by Hamilton Laboratories in Wayland, Massachusetts. The C Shell is an interactive command interface and programming language, primarily used on engineering workstations, which was written at the University of California at Berkeley by Sun Microsystems Inc co-founder Bill Joy. The version done by Douglas Hamilton is based on the BSD4.3 version of C Shell, and includes utilities for OS/2. It is claimed to add functionality: developer Douglas Hamilton says that he got hold of the BSD4.3 bug list and went about fixing the whole lot. It includes fully nestable programming constructs; variables, arrays, built-in operators and functions; a mechanism for recalling and editing previous commands; improved input-output redirection, piping, background execution, and parallel threading; command substitution, aliases, and shell procedures; and file name wildcarding that supports regular expressions. A demonstration of the product reportedly showed that the C Shell and utilities operate perceptibly faster than OS/2's command-line processor and utilities. The Hamilton C Shell has already been bought by Hewlett-Packard and Banyon Systems, it costs \$350, and is available now.

ICON READY WITH 256 USER RISC MICRO, MULTI-PROCESSOR 68020s.

Sanyo-owned Icon International, Orem, Utah, is set to launch a RISC-based machine for up to 256 users, the Icon 8000, in the second quarter of next year. Running Unix V.3 and compliant with the Binary Compatibility Standard (BCS), it uses Motorola's MC88000 RISC Microprocessor chip set, provides 15 Mips at 20 MHz, and has a maximum of 64 Kbytes of cache memory. This forms the Virtual Memory Processor (VMP) subsystem. An independent Motorola 68020 processor set makes up the Virtual Disk Processor (VDP) which handles all the file management, and runs parallel to the VMP. The 8000 also allows access to MS-DOS via Icon's Smile interface. In addition Icon's 5000 system was released last week, claimed to deliver the performance of a mainframe, incorporating fault tolerance and a new memory management unit. It runs Unix System V, Unix BSD, Pick and MS-DOS, supporting up to 256 users. A minimum of six 68020 processors are included in basic configurations. Meanwhile, Swindon based Kode computers has extended its Icon range with the UK release of the Kode Icon 2000 model 5 series, which has been available in the US for about six months. It incorporates three 68020 processors, supports Icon's usual range of operating systems, and up to 16 users. The 2000-5 retails from £18,650. Kode also offer Icon 1000, 2000, 3000 and 5000 systems and expect to receive the 8000 model as soon as it is released in the US - no indication of price yet.

INTEL SETS SUB-COMPACT 80386 SINGLE BOARD COMPUTER

The systems division of Intel Corp, up in Hillsboro, Oregon has released a 4Mb 80386-based AT-compatible single board computer with all the trimmings packed onto a single Multibus II board. The iSBC-386/PC16 is said to include a full set of AT support chips, 64Kb cache, the BIOS from Award, VGA graphics, a floppy disk controller, 80387 maths chip - which can be swapped for a Weitek if preferred, two serial, a parallel and an AT port. The initial version of the board - expected to be out in the second quarter of next year - uses the 16MHz version of the chip and it is said that up to eight boards can be run in parallel, and Intel demonstrates its favourite trick of pulling out one of the boards to show how the thing keeps running with scarcely a blip. Insiders who've seen the board say the company is using robotic assembly and has an ingenious soldering technique to get over the fact that wave soldering is too coarse for the surface-mount technology: a robot arm sprays the solder with air hot enough to melt it. Customisable with up to 512Kb EPROM, the board, aimed primarily at industrial applications, will be \$5,000 in unit quantities. Prime Computer uses Intel iSBC boards in its EXL Unix systems.

ORACLE ALTERNATIVE FOR ICL VME USERS

Oracle Corp's Oracle 6.0 relational database under the VME operating system was formally unveiled to ICL Series 39 mainframe users this week: Oracle points out that its own database and tools are integrated with the Transaction Processing System, whereas ICL's relational solution, Relational Technology Inc's Ingres, is offered as a back-end VME server with the tools running on a Unix front end, and that ICL admits that this does not have the performance to replace hierarchical IDMS/X for big applications.

MATSUSHITA PICKS SEQUENT

Matsushita Electric Industrial Co, which plans to plunge into the Unix superworkstation market with the help of Colorado start-up Solbourne Computer Corp, has added another string to its Unix bow with formation of Pana-Sequent Co as a joint venture with Sequent Computer Systems Inc, Beaverton, Oregon to distribute Sequent multiprocessors in Japan. Pana-Sequent will also fund efforts to enhance the machines for a range of Japanese commercial applications. The Osaka venture will start life with 17 people and plans to grow to 90 within five years.

REDUNDANCIES AT KALAMAZOO

Kalamazoo Plc, the Birmingham systems company that has made computers for the motor trade its own, warns that it will make a loss for the first half of its current financial year. It has had to make 99 of its employees redundant, but still sees its full-year profits matching the £2.6m pre-tax it made for 1987-88.

LOWE QUILTS FOR XEROX AS IBM FORMS SEPARATE WORKSTATIONS UNIT

IBM Entry Systems chief William Lowe, generally thought to have been passed over for promotion in September when Richard Gerstner was appointed general manager, IBM Personal Systems recently, has resigned to join Xerox Corp as executive vice-president in charge of the planning, development and manufacturing of most of the company's products, succeeding Wayland Hicks, who is taking on worldwide marketing for Xerox. At IBM, the company has stressed the importance it is now attaching to workstations, where the lacklustre RT is its flagship product, although it looks as if a low-end 80386 station may be on the way, by creating an Advanced Workstations division alongside Entry Systems within the Personal Systems group. The new division falls to Nicholas Donofrio, who was vice-president of development within Entry Systems, while James Cannavino is moving from one end of the micro-to-mainframe link to the other, taking over Entry Systems, now confined to the PS/2. He was president of the Data Systems division - the one that looks after the top-end 3090s.

FUJITSU CLAIMS TO LEAD WITH 4GFLOPS VP2000 SUPERCOMPUTER

Fujitsu Ltd is claiming to have leapfrogged the competition with its new VP2000 generation of IBM-compatible scientific supercomputers, saying that the machines offer peak uniprocessor performance of 4GFLOPS, more than twice the speed of the current generation. They are also claimed to use the world's fastest 1M-bit static random access memory chips. The VP2000s run Fujitsu's MSP rewrite of IBM's MVS/XA, and Unix is also supported. And, addressing the problem of dearth of applications, which has limited sales of the existing machines outside Japan, the company now claims 260 packages, and has set up development centres in the US and Japan to develop or convert many more. No price or delivery, but the VP2000s are likely to be marketed by Amdahl Corp internationally, and Siemens AG in Europe.

DATA LOGIC CHOOSES C ITOH FOR JAPANESE DEALING SYSTEMS PUSH

Raytheon Co's UK subsidiary Data Logic Ltd has appointed C Itoh Data Systems as a distributor for its dealing systems, saying that it chose the division of the Japanese trading giant as a distributor partly because of a long relationship between Data Logic's parent Raytheon and C Itoh in the light aircraft business and because he wants to bring the fruits of UK's success in liberating its financial markets to Japan: the dealing system implements an open architecture using Unix and Open Systems Interconnection protocols.

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Active Memory Technology, Reading, Surrey, is to supply Cambridge University's Computer Laboratory with one of its DAP 610 (Distributed Array Processor) parallel computer systems: the DAP, which employs 4,096 processors to do its work, is to be used in various research projects including mathematical modelling, and has already been adopted by other universities such as Edinburgh, and Queen Mary College.

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X/Open has appointed Stephen G. Lowen, formerly director of IBM's European AIX programme, as its chief marketing officer.

- 0 -

A new entrant into the Cray-compatible minisupercomputer arena is Supertek Computers Inc, Santa Clara, California: the company's S-1 computer costs around \$250,000 and is rated at 18 MIPS and 36 MFLOPS peak performance - but Unix is not expected on the machines until the Summer of next year.

- 0 -

Brentford, Middlesex-based Ace Microsystems, which has sold numberless copies of its LEX word processing and database management package into the Royal Navy, now has a new version ready: LEX 9c includes spreadsheet and graphics integration, spell checker and thesaurus, better help screens, redlining and box-drawing facilities, and a VAX to RMS link: initially available in the VAX VMS version for £2,000, the company will introduce a £500 PC version and Unix version early in 1989.

- 0 -

Motorola Computer Systems Inc has reportedly ended its licensing agreement with SNA software suppliers System Strategies INC in favour of the Advanced Peer to Peer Communications (APP) software from Rabbit Software Corp of Malvern, Pennsylvania: the software will provide Motorola with additional LU 6.2 communications capability, and takes advantage of the Motorola 68020 communications processors used in Motorola's 8000 Series hardware.

- 0 -

Cincom Systems Inc, Cincinnati, Ohio, is scheduled to make "major announcements" concerning its Supra relational database management system next month, according to InformationWEEK, and the likelihood is that a Unix version will be revealed: the company has been working with Nixdorf on the product for some time (UX No 156).

DEC will be launching two desktop machines next month, says Computer Systems News: the PVAX (Personal VAX) will be the new low-end VAX, using the MicroVAX 3000 chipset, and the PMAX will be an Ultrix only system, the first to incorporate the RISC processor from MIPS Computer Systems Inc - both boxes are expected to run DECwindows user interface software.

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Open systems specialists the Wollongong Group Inc, Palo Alto, California, is to merge with Advanced Computer Communications of Santa Barbara, California.

- 0 -

Vortex Technology of Topanga, California, says it can turn DOS machines into UUCP network nodes with its UULink software, giving PCs running MS-DOS the ability to communicate with Unix systems and networks such as Arpanet and Usenet: according to Vortex, UULink provides facilities compatible with the standard Unix to Unix Communications Protocol networking environment, with functions such as e-mail and file transfers, for \$335.

- 0 -

Sony Microsystems, Palo Alto, California, has an independent software vendor agreement with CaseWare Inc of Costa Mesa: CaseWare's Amplify Control computer-aided software engineering system will be used with the Sony News family of workstations, and will be available under X-Windows in the second quarter of 1989.

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Lotus Corp is "very interested in the NeXT computer and the NeXTStep interface", according to MicroBytes Daily, and has been working with NeXT for some time. Sun's Scott McNealy was less impressed, however, saying that Steve Jobs' machine should be compared "to Sun's mid-'89 product, and then we'll compare apples to apples".

- 0 -

Intel Corp looks for orders for its microprocessors to start picking up again in the second quarter of next year, judging by information from its 20 biggest customers, who account for 80% of the orders: it also looks for 80386 and 80286 orders for 1989 to be well above the 1988 levels for the two.

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A System Publications Inc, San Jose, California, has produced two books on the X-Window system: the X user reference guide (110pp, \$12.95) summarising user commands, and the X library reference guide (15p, \$9.95) summarising X.10 and X.11 library functions.

The Birmingham, UK branch of Dutch software house DSA Software, currently demonstrating a Cobol source code generator which it claims boosts production to up to 10,000 Cobol instructions per day, says that it is working on a C generator for release next year: a Pascal version is also available.

- 0 -

Frontline Distribution has been appointed the sole UK distributor of the Wingz presentation spreadsheet system developed by Informix Corp for the Apple Macintosh: the software runs under A/UX Unix as well as the Mac's proprietary operating system.

- 0 -

Control Data subsidiary Micrognosis (UX No 197) will now be selling its DEC and Sun Microsystems-based Trade financial dealing room system in Australia, following its establishment of a Sydney-based Asia Pacific office at the beginning of November: it has already installed systems at Westpac and the State Bank of New South Wales.

- 0 -

Swinton Insurance, a UK-based high street insurance intermediary, has bought 50 Unix-based XPS-100 mini-computers from Honeywell Bull in an order worth around £750,000: the X-15s will run the company's Broker-Pak software for insurance quotations and office automation, and were chosen after Swinton's looked at opposing bids from ITL, Jarrogate and Altos.

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And Honeywell Bull is also celebrating a £1 million order from Gaiianer Tobacco for seven DPS6 Plus departmental systems: six of the machines will include the company's XC-UPP Unix-based co-processors (UX No 199), allowing Unix and DPS software to run on the same machine.

- 0 -

Financial Corporate Modelling Consultants plc (FCMC) of North London, the UK arm of the Berkeley-California-based developers of the Staffware "procedure processing" office automation system, has signed a joint marketing agreement with British Olivetti's Finance Division, which will distribute Staffware and the Mormon mortgage application package on its PCs, local area network and multi-user systems including the 80386-based M380: Staffware is also used by Unisys, NCR and ICL.

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Number 211

NOW STC BUYS NATSEMI'S \$90m DATACHECKER FOR ICL

STC Plc has finally decided that ICL has to get into the US market if it is to survive as a major computer company, and having agreed to buy Computer Consoles Inc - quite as valuable for its computer business to ICL as its other activities are to the STC side of the house - STC has moved to make ICL a leading player in retail systems in the US market by agreeing to pay \$90m for the Datachecker Systems Inc business of National Semiconductor Corp. Net assets of Datachecker are put at over \$50m, and the company did about \$200m turnover in the past 12 months. Under the agreement, STC will also pay royalties to NatSemi for three years on patents and trademarks for use in retail systems. The acquisition will turn ICL into a major player in retail systems worldwide: Datachecker, which was expanded with the acquisition of Data Terminal Systems five years ago, is the second player in the US market after NCR Corp - it uses Convergent Technology Inc micros as the basis of its Epoch system family. ICL already has a foothold in the US market on its own account as a result of the business it acquired with Singer Business Machines 14 years ago, and by combining its own and Datachecker's product lines with the fault-tolerant Unix, transaction processing systems built by Computer Consoles Inc, there is very substantial scope for a major expansion of the business.

INTERGRAPH MERGES TANGENT AFFILIATE WITH CADENCE SYSTEMS INC

Intergraph Corp has agreed to a merger between its 80% affiliate Tangent Systems Corp and publicly-quoted Cadence Systems Inc, under which the Huntsville, Alabama company will end up with a holding in the enlarged Cadence. Cadence will pay \$1.6m of its shares for Tangent, giving the firm an indicated value of \$14.4m, and Cadence will do versions of its integrated circuit design software for Intergraph's Clipper-based workstations for joint marketing by the two companies. It is not clear how much of the Cadence equity Intergraph will hold after the transaction. In April, Intergraph injected \$2m into Tangent to take its stake to 80%; the Toshiba Corp-Motorola Inc joint venture earlier adopted Tangent's Tangate sea-of-gates gate array design software (UX No 177).

TIGERA SELLS WORD PROCESSING OPERATION TO WANG LABS

Tigera Group Inc, the Belmont, California cash shell that also included the software interests of Fortune Systems Corp - it sold the the hardware side, but also the rights to its Fortuneword word processor, to SCI Systems Corp last year - has now sold substantially all of its remaining assets to Wang Laboratories, giving the Lowell company an entree into the Unix software world. The main software offering of Tigera was its Wordera word processing package, developed out of Fortuneword, and this was clearly of considerable interest to Wang, because the firm paid \$1.4m cash for it and assumed some liabilities. Fortuneword, Wordera, and Quadratron's Q-Office all have a common ancestry: the original Fortuneword was written by Stephan Zimberoff, now with Quadratron. Wang has need of an equivalent word processing package to its proprietary systems, now that Unix is a more established option on the VS range. According to Bob Potter of Inta Electronics, a UK Fortune dealer based in Wokingham, Surrey, Wang are now poised either to kill off Wordera or develop the word processor as part of its office automation package. The chances are that Wang will continue with Wordera to try and attack Fortune's considerable user base, especially in view of the doubt surrounding Fortune's future commitment to the market.

ENCORE READY WITH NS32532 MACHINE - RISC PLANS

Encore Computer Corp, the Wellesley, Massachusetts superstart-up that is at last finding its feet after a very troubled genesis, is reportedly ready with a new two-to-20 processor machine based on the latest generation National Semiconductor NS32532 microprocessor. The new Multimax is scheduled for launch in January and is tipped to offer 12 MIPS to 120 MIPS performance at prices from \$150,000 to \$900,000. Encore has also joined the 880pen fan club for the Motorola Inc 88000 RISC microprocessor, and says it plans a two-to-20 processor box with each CPU rated at 15 to 20 MIPS, for shipment by the end of next year at prices from \$100,000 to \$1m. Rather than indicating the demise of National Semiconductor processors in Encore systems, vice chairman of corporate affairs Charlie Anderson insists that the company intends to tread both the CISC and RISC paths, and that no decision has been made one way or the other. And following its fifth consecutive profitable quarter, Encore has now decided to concentrate all its resources on its multiprocessor Unix machines, and has agreed to sell its Annex II terminal server business to Xylogics Inc, Burlington, Massachusetts. Introduced in the spring, the Annex II is an NS32016-based processor with the Intel 82586 Ethernet controller, supporting 16 or 32 ports and as many as 256 concurrent sessions. It was originally developed to front-end Encore's Multimax multiprocessors, and under the agreement in principle with Xylogics, the Marlborough, Massachusetts company gets the right to take Annex IIs on favourable OEM terms. Xylogics agrees to pay \$4m for all rights, the name, the technology, and the inventory, of Annex II, and will take on all engineering and manufacturing staff working on the product. As well as supplying Encore, Xylogics will market the product to other OEM customers as the Xylogics Annex II terminal server. There is also the prospect of repeat business from Gould Computer Systems, which signed a \$4m five-year OEM agreement with Encore for the first generation Annex for use in the Gould Povernode Unix family. Charlie Anderson says that the association with Gould "will continue for the foreseeable future." Encore are also known to be announcing additional funding via a private stock offering, expected raise between seven and ten million dollars, as well as an extension to their contract with the US Defence department that has the company developing a million Mip machine!

ALPHA MICRO AGREES TO BUY GENERAL AUTOMATION

Alpha Microsystems Inc, Santa Ana, California has signed a non-binding letter of intent to acquire troubled General Automation Inc, paying one Alpha Micro share for every 10 General Automation Inc shares out. General Automation's shares were trading at a bombed-out 75 cents apiece ahead of the news. In the interim, Alpha Micro will share the running of the Anaheim, California-based Pick systems manufacturer with incumbent management. It says it is also prepared to put up \$2m to meet General Automation's immediate cash needs, provided it gets satisfactory answers to outstanding queries. Only two years ago, GA was itself in acquisition mood, buying two Unix companies, Parallel Computer Inc and the UK's Aston Technology in a bid to broaden its Zebra product line. But the promised Unix expansion never took place, and GA sold Parallel to ambitious UK company Integrated Micro Products in August (UX No 192). The terms of the letter value the company at about \$3.2m.

SGS-THOMSON IS IN TALKS WITH THORN ON INMOS, THOMSON CONFIRMS

Thomson-CSF SA, Paris last week confirmed that its SGS-Thomson Semiconductors SA venture is in talks with Thorn EMI Plc about taking on Thorn's Inmos International Plc subsidiary. Thomson gave no further details of the talks, but the consensus seems to be that Thorn would transfer ownership of Inmos to SGS-Thomson, and in return receive shares representing a 10% stake in the enlarged company, which would get a firm value some time in the future upon a public flotation of SGS-Thomson. Inmos moved into profit in the first half of Thorn's fiscal 1989, contributing £3.5m of the £97m group operating profit in the term to September.

HARWELL LEADS ESPRIT RESEARCH TEAM ON \$5.8m NEURAL NET PROJECT

A consortium of 10 European companies and research organisations, led by the UK Atomic Energy Authority's Harwell Laboratory, has won funding under the European Community's Esprit II programme for research into applications of neural network technology. Annie - Application of Neural Networks for Industry - is budgeted at \$5.8m over three years. Co-ordinator is KPMG, the international arm of accountants Peat Marwick McLintock, and the other UK participants are British Aerospace Plc and Artificial Intelligence Ltd. West German participants are led by Siemens AG, contributing user perspectives, with IBP-Pietsch GmbH and the Darmstadt Institute of Technology. Cetim, France and Alpha and NTU of Greece make up the full team. In neural networks, data is stored in intelligent synapses between electronic neurons that create weighted combinations of simple processing elements that can be changed as a result of experience. As well as investigating applications in industry, the consortium commits to demonstrating performance of network structures against current methods, and to developing software tools.

ENABLE/OA NOW UNDER MS-DOS, OS/2, XENIX

Enable Software, the wholly-owned UK subsidiary of the New York-based Software Group, has announced Enable/OA, an enhanced version of its Enable office automation system, which now provides multi-tasking under MS-DOS, OS/2, Xenix and Intel-based Unix operating systems. The software was originally launched by the Group in 1984 and its installed user base has grown from 10,000 then, to 25,000 in 1988. The UK office in London was opened this September to market, sell and distribute Enable in Britain and Europe; and Ted Newlin, the President of the Group, claims that the company will have a seven to ten percent share of the European integrated software market in 1989. The newest version of the word processing, telecommunications, relational database, spreadsheet and graphics software application can now read 25 leading file formats including WordPerfect and Samna, from applications such as dBase, Lotus 1-2-3 and DisplayWrite. The system also includes a built-in local area network application which supports networks such as Novell Advanced Netware, IBM PC Network Program, AT&T Starlan, and OS/2 networks. Enable/OA is hyped as being user-friendly, having full on-line hypertext documentation, and uses a common command structure for all applications. Once installed, a telephone support line is on offer for regular users, and a dealer training package called Enable/Learn is being developed in a bid to reduce any maintenance problems. The fledgling operation in Britain has signed contracts with the British Telecom Leeds trunk network operations centre, and Shell, and is about to close deals with two unnamed banks. The system, offered at an introductory price of £664, will be available from January 16 1989, and will be distributed by Xitan Ltd and Frontline Ltd; but companies that have bought their Enable since November 1 1988 will be relieved to hear that they'll be getting a free upgrade.

ULTIMATE RE-STRUCTURES AFTER LOSSES

Ultimate Corp, which eliminated its US direct sales operation in the autumn, has now announced the bill - pre-tax charges of somewhere between \$28m and \$35m against its second quarter figures for the period to October 31. As a result, the East Hanover, New Jersey-based Pick company expects to report a net loss of between \$18m and \$23m for the period, during which operations were at about break-even on turnover that fell to between \$43m and \$49m from the \$52m it reported a year earlier. The company, which does not say how many people will have to go in its restructuring and cost-cutting exercise, acknowledges it became "spread to thin" and that had been trying to do too much in too many markets.

SCO SIGNS WITH LOCUS FOR X-WINDOW

Continuing its foray into the X Window environment (UX No 209), the Santa Cruz Operation has signed an agreement with Locus Computing Corporation to licence Locus' X Window System Version 11.2 products. Xsight is a full X Window system and will run on SCO Xenix; PC Xsight is a server enabling DOS users to have the same graphical windowing interface as applications running on SCO Xsight. SCO says the Locus software, together with an agreement with Lachman Associates for the supply of TCP/IP and NFS, will allow it to offer a complete software package to turn standard PCs into high performance, networked graphics workstations. SCO Xsight and PC Xsight will be available from April next year.

THE COST OF COMPUTING - DISTRIBUTED SYSTEMS "ARE CHEAPER"

Distributed networking systems are more cost effective to run than centralised ones, according to a report by Michael Treacy from Massachusetts Institute of Technology's School of Management. The report, which claims distributed networking configurations can be half the cost of centralised systems, is based on a Network Systems Ownership Model, originally presented at DECworld '88 in Cannes earlier this year. It measures total system life cycle costs as opposed to initial hardware acquisition costs, and was designed to help decision makers examine all of their future network system costs more effectively, before installation. System life cycle costs are now increasingly important because the initial cost of equipment accounts for only 15% to 25% of the total cost of ownership over a five year period, says the report. Divided into three parts, the costs are: installation and acquisition, operations and real maintenance, and incremental and change. There are five cost components within each of the three stages: equipment, software, personnel, communication carriers and facilities (wiring and space costs). Treacy studied all of these and concluded that personnel and communication form a substantial part of the total life cycle costs. Analysing the benefits of alternative network designs and vendors in organisations, Treacy found that centralised company environments are more expensive to run than distributed processing ones - \$6,369 per port as opposed to \$2,757. In the test, distributed DEC sites were claimed to be cheaper than similar IBM ones, \$2,710 against \$3,456 per port over five years. Generally, in a centralised system, personnel costs were found to be 89% greater and communication costs almost thirteen times as great as those for a distributed network. The higher cost of these systems seems to be due to their inherent unreliability of design, according to Treacy. Additional equipment and personnel costs are attributed to attempts to match the availability of a distributed network. More networking staff mean higher personnel costs, redundant backup hardware contributes to increased equipment costs, and the amount of central host processing translates into greater communication costs.

TEXAS INSTRUMENTS CLAIMS FIRST IN QUANTUM TUNNELLING TRANSISTORS

Texas Instruments Inc gave the International Electron Devices meeting in San Francisco last week a resounding send-off by announcing that it had successfully fabricated Quantum Tunnelling Transistors in Gallium Arsenide. The circuits harness the otherwise troublesome phenomenon that when devices are laid out to very fine design rules, some electrons tunnel through the barriers between the current-carrying features on the chip. The Texas engineers have found a way of controlling this leakage of electrons but the circuits use design rules of 10 to 20 thousandths of a micron - 10 to 20 nanons? That means that a million transistors would occupy only a square centimetre of Gallium Arsenide. They are claimed to switch more than 1,000 times faster than conventional circuits, implying speeds of around a tenth of a picosecond. The Texas engineers are optimistic that they will have advanced the technology sufficiently that they will be able to fabricate hybrid chips that include the quantum tunnelling transistors for speed critical functions within the next five years or so. More from IED - page 6.

OLIVETTI'S SCANVEST RING ACQUISITION TURNS SOUR

Ing C Olivetti & Co SpA's purchase of 51% of Scanvest Ring AS of Norway in April for \$71m has turned horribly sour for the Italian, which is now under pressure from the Oslo Stock Exchange to offer the same NKr68.50 a share to the minority holders of 49% of the company as it paid for its controlling stake. That would be a bitter pill for Olivetti to swallow, because since the acquisition, performance at the company has gone sharply into reverse, and the shares were down at NKr18 when trading was suspended last week. According to the Wall Street Journal, if Olivetti refuses to oblige, Scanvest could be the first company to be expelled from the Oslo Stock Exchange. The shares have plummeted because once Olivetti took control, it found unexpected financial problems at Scanvest's Swedish and US operations that cost write-offs of \$12.3m to put right, leading to a loss for the first nine months of \$14.8m against a profit for the same period last year of \$5.8m. The discrepancies in the accounts led Olivetti to say that it wants to renegotiate the purchase price, and Scanvest's chairman Sjur Svaboe, architect of the sale of the majority stake to Olivetti, now says he will be resigning on January 1.

FIFTY JAPANESE ORDERS FOR STELLAR SUPERWORKSTATION

Stellar Computer Inc expects Japanese orders for its GS1000 graphics supercomputer to reach 50 systems by the end of this year, taking the Japanese proportion of worldwide sales to 20%; next year the target for Japan is 200 machines going out through the four local distributors - Mitsui Corp, the Asahi Techno Computer subsidiary of Asahi Chemical, software house Algo Graphics, and FPS Computing Asia with maintenance and support provided by Stellar's Japanese subsidiary.

IBM READY WITH JAPANESE AIX

IBM Japan has released a version of its AIX Unix with Japanese language processing extensions: although called AIX/6100, it runs on the PS/55 and PS/2 as well as on the RT, but costs a daunting \$4,150; IBM at the same time announced a product called DR One for building dealing room systems for securities firms, which accepts digital and analogue feeds for display on multi-window personal computer screens; the product was originally developed by BS Microcomp Pty Ltd of Melbourne, Australia and costs \$8,180 to over \$30,000, depending on functionality; IBM Japan is busy adapting it for the local market. Despite the noise it has made about the things, Sony Corp had still only sold 3,000 of its News multiprocessor Unix workstations by the end of this year. No word on how many have been sold since then, but the company is currently producing the things at a rate of 500 a month. Its ambitions are much greater than that however, and it says it will go to 1,000 a month in February, and rise to 5,000 a month when its new News plant opens up in October.

SAA PORTABILITY "TWO YEARS AWAY" DESPITE SAA COMPLIANCE CLAIMS

Eager to scramble aboard the Systems Application Software bandwagon, a number of software companies are now beginning to present the world with "SAA-compliant" packages. In many ways, this term-banding is misleading, for at this stage, compliance applies to just one third of the SAA components defined by IBM. Although the company has now set out some 600 specifications for developers to adhere to within the Common User Access, it has yet to define workable standards within either the Common Communications or Common Programming interfaces. Consequently, the fundamental portability principle of SAA - the capacity to move applications from machine to machine without re-writing code - will elude users for at least the next two to three years. Or so says Management Science America Inc, which has just announced BrightView, the first of a planned range of application suites designed to fulfill chairman John Imlay's launch-pad promise to make the company's range of financial, personnel, materials management and manufacturing software packages SAA-compliant. MSA small print does concede that, to date, products launched under the Brightview banner are fully Common User Access or CUA compliant. To this end, the new family embraces all the colour and use-of-screen criteria - pop-up panels, pull-down menus, help information displays and red messaging - specified by IBM for the Common User Access, and includes both data-value and field level help panels. But until IBM produces both the elusive DB2 Repository and finalises specifications for the two other key SAA components, the software's progression towards full SAA-compliant status is sorely hindered.

MSA's Ed Holt claims that in two to three year's time, BrightView's mainframe host code will run "equally happily on the AS/400 and the System/370." In the meantime, MSA plans the delivery of Common User Access-compliant applications for the System/370 by the end of March 1989, and similar offerings for the AS/400 by June. The portability issue also reared its ugly head at a recent International Business Communications-sponsored conference chaired by Martin Healey. Although welcoming the idea of SAA at a conceptual level, Healey pointed out that users of old, in-house developed applications - typically banks - would be unable to toe the SAA line through IBM's failure to provide IMS, CICS, and PC-DOS interfaces. MSA denies that this has any bearing on its customers, who are protected through the constant maintenance and automatic upgrading of applications. As an example, it cites the new, January-planned release of its General Ledger package, arguing that "this will be the version that BrightView will work with." Meanwhile, however, users should remember that "SAA-compliant" is still a long way from being synonymous with "portability".

CONCEPT OMEGA ENTERS EUROPE

Concept Omega Corporation, Somerst, New Jersey, has established a European division of its operations in Romford, Essex, and at the same time launched an upgraded version of its Thoroughbred Idol-IV 4GL, and two new supermicrocomputers. Idol-IV is claimed to run on over 100 different hardware and operating systems environments, from Unix to DOS, OS/2, VMS and Thoroughbred/OS, offering a better integrated data dictionary, with the same functionality as other 4GLs, including an English-like development language, report generator and database management system. Typical eight user versions for Xenix and DOS cost £1,300 and £675 respectively. The new supermicros called TS-386/20D and TS-386/20T, which are aimed at the high-end multi-user environment are 80386, 20 Mhz based machines, compatible with IBM PC/AT and PC/XT systems. They can support Unix V.3, SCO Xenix, MS-DOS or Thoroughbred/OS, and are priced from £4,295 to around £20,000 depending upon the operating system and number of users. Concept Omega president John L Johnson, who describes the Corporation as "basically a language company", says that Unix now accounts for 45% of total sales, and that it will develop products for all Unix dialects that may emerge in the future. Its Thoroughbred operating system, originally developed as a spin-off, allowing users to run applications across a variety of operating systems and supporting multi-users on PCs, has proved to be one of its most popular products and is to be developed and sold "as long as people want it."

HEWLETT PACT WITH MOLECULAR ON CHEMICAL WORKSTATIONS

Hewlett-Packard Co is set to follow DEC into the chemical workstations market under an agreement with Molecular Design Ltd. Molecular, based in San Leandro, California, has formed a development and marketing relationship with Hewlett-Packard under which the two plan to design a complete chemical workstation for managing and communicating chemical data. The effort, which is expected to take eighteen months, will combine Molecular's software with HP's HP9000 Series 800 and Series 300 graphics Unix workstations.

...AS APOLLO TARGETS JAPAN FINANCIAL MARKETS

Nippon Apollo Computer is stepping up its efforts in the financial systems market, and in conjunction with a major trust bank, it has a new financial systems project team working on securities dealing software for Japanese banks, broking houses and life insurance companies: the software is being tailored to run on the Domain series of workstations locally networked with other workstations and with personal computers via an expansion board; the software is expected to be ready for sale by the middle of next year, and will be marketed by a specialist financial team.

AT&T, UNISYS

"IN FOR \$300M OF INTEL SBCs"

Intel Corp's new iSBC-316/P16 single board AT-compatible OEM computer based on the 80386 at 16MHz (UX No 210) and similar forthcoming products seem to have found favour with some of the majors in a big way. In what sounds like bad news for resident supplier Ing C Olivetti & Co, AT&T is reportedly in for \$100m of the things, which suggests less personal computer business going Olivetti's way next year - after a nasty fall in 1987, shipments to AT&T have picked up substantially this year. And according to Electronic News, Unisys Corp has signed an even bigger OEM order for the things, wanting some \$200m all told. None of the parties was making any comment.

COGNOS EMBARKS ON MULTI-VENDOR, MULTI-DATABASE STRATEGY

Software houses concentrating on products for proprietary architectures are starting to become a rarity - and the latest to embark on a strategy aimed at the multi-vendor, open systems market is Cognos Inc of Ottawa, Ontario in Canada. Cognos, which claims to be the largest fourth generation software company in the world, with projected revenues this year of 100m Canadian dollars (£45m), made its fortune by selling the PowerHouse 4GL on Hewlett Packard hardware, only later re-writing the software in C for DEC VAXVMS and Data General hardware. Last year, the company released MS-DOS and OS/2 versions of the language, but says it is primarily after business from the mid-range systems business where Cobol is popular. Facing reduced growth rates due to HP's waning enthusiasm for the 3000 Series in favour of Precision Architecture and HP/UX, Cognos says it has spent \$24 million on technology licensing agreements and research and development over the last two years. First results are now being revealed, and include the new StarBase distributed relational database, which it has integrated with PowerHouse. StarBase, with the related StarNet network communications software, has been licensed from Interbase Software Corp, a Tyngsborough, Massachusetts company which is part-owned by Ashton-Tate Corp, and sells its InterBase product line on Apollo, Sun and DEC/Unix hardware. The first version from Cognos will run under VMS, and the company claims it is a "second generation" relational database, using a client/server architecture suitable for on-line transaction processing. Through StarNet, customers will be able to implement distributed database systems over DECNet or TCP/IP, allowing data integrity across multiple databases on the network by using two-phase commit. StarNet can be used independently of StarBase, or in combination with RMS or Rdb/VMS, and Cognos plans support for third party database products such as Oracle early next year, which it will access through an SQL interface. Available from January 5th, prices for development licences range from £8,775 for a Microvax 2 installation to £48,425 for a VAX 8800. Cognos says that Unix versions of its software will be on beta test from early next year, and that eight Unix platforms, including HP/UX, are currently being considered. European vice president Jim Cluchey also revealed that the company would be moving into the IBM marketplace for the first time, "now that the AS/400 has clarified IBM's mid-range policy".

SPHINX BECOMES FIRST UK 3COM VAR

Open systems software house Sphinx Ltd of Maidenhead in Berkshire, has signed up with 3Com Corp to become the first UK value-added-reseller for 3Com's networking hardware and software products. The move marks a push into the corporate market by 3Com's UK division, which it says will be conducted through "strong systems houses able to reach a substantial market segment of corporate accounts". Sphinx will supply the product through its Corporate Solutions Division, and says it will be adding value in the area of distributed application support. According to technical director Brian Mulligan, Sphinx is backing the client/server relationship on a local area network as the future of work-group computing: "the server would consist of an OS/2 or Unix based machine designed and configured to support fast file access and processor intensive operations".

PRIME WINS FIRST ROUND IN COURT BATTLE WITH MAI...

Prime Computer Inc has issued a legal challenge to MAI Basic Four Inc over the extent of Drexel Burnham Lambert Inc's involvement in MAI's \$970m bid for the Natick minimaker, and by doing so has achieved its objective of stalling the bid. A federal court judge in Boston has ordered MAI to suspend the bid until it and Drexel have made further disclosures about their relationship, and about the state of play in the US investigation of Drexel and its true role in past bids. The suspension order is itself suspended until MAI lodges an appeal, which it has promised to do before its tender offer expires on December 22nd, but the ruling casts sufficient doubt on the true nature of the bid to ensure that few Prime shareholders will hurry to tender their stock. Judge David Mazzone did not go so far as to agree with Prime's contention that Drexel actually controls the bid, but he said that the bank played a substantial role, much of which was concealed by lack of disclosure. He also wants the two men who control MAI, Bennett LeBow and William Weksel, to tell Prime shareholders about their previous legal "problems", which include a fine paid by Mr Weksel to settle insider dealing charges, and class action suits against both men from shareholders of companies unconnected with the present bid. Judge Mazzone also struck a blow for sanity in the hyperactive world of debt-laden bids, pointing out that Prime was four times the size of MAI and might prove difficult to digest. He pointed out that only \$20m of equity was involved in the offer, compared with up to \$1,500m of debt that would likely be needed to meet the price and the cost of mounting the takeover. He also questioned the management skills of the two bidders, asking "Is there anything in their business backgrounds that created a single new plant? A device? A new operation?", adding that Prime might well have to spend \$50m defending itself without having anything to show for it at the end.

...BUT MAY CUT MORE STAFF

Prime Computer Inc, Natick has confirmed that it may have to cut its workforce by more than the 700 positions so far announced in order to reduce its cost base to acceptable levels in the wake of its acquisition of ComputerVision Corp at the beginning of the year. The company gave no indication of what parts of its business are likely to be affected by any new round of lay-offs.

FUJITSU USES SUN WORKSTATION FOR ASIC DESIGN

Fujitsu Ltd is to implement a version of its ASIC design software on the Sun Microsystems workstation range: the two packages are ViewCAD, used for logic circuit design, and ZephCAD, a logic circuit merging system, both for in-house use by semiconductor makers; the software was originally written for Fujitsu's 32-bit A series, and the large-scale logic simulation and data transfer modules will be transferred to Sun beginning in January, and work on porting the logic input and rule checking graphics software currently running on Fujitsu's FMR personal computers will begin in April; functionality of the software will simultaneously to be expanded to cover designs of from 50,000 to 100,000 gates.

Modular Computer Systems, Mod-Comp, Fort Lauderdale, Florida, is the latest to beat a path to Mountain View to sign an OEM agreement for Sun Microsystems Inc's Sun-3/50 and Sun-3/60 workstations, which it plans to offer with its new Tri-Dimensional Series and its traditional Classic minicomputer families.

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Hewlett-Packard Co and Sony Corp say they will jointly propose standards for storage of data on Digital Audio Tape drives in February, in the hope that they will meet with approval from the American National Standards Institution, which is due to meet to consider the issue in San Antonio, Texas on February 21: the standard would enable 1.3Gb to be stored on one of the tiny cassettes, and the joint format is backed by seven Japanese, US and European companies - but - needless to say - it has a rival.

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While Oki Electric Industry Co has aligned itself with Unix International Inc, backing AT&T Co's Unix System V.4, Japan's biggest software developer, CSK is facing both ways, joining the Open Software Foundation but maintaining its relations with AT&T.

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Nokia Oy has suffered a grievous blow with the sudden death at 55 of its chairman Kari Kairamo, who masterminded the Helsinki company's rapid international expansion via the acquisitions of Ericsson Information Systems and the consumer electronics arm of ITT Corp's Standard Elektrik Lorenz, West Germany.

- 0 -

Oracle Corp, Belmont, California has formed an Office Automation Division with the Oracle*Mail enterprise-wide office automation information and communications system as its flagship product: the first product is out now on DEC VAX/VMS and Sun Microsystems Unix machines, and is shipped with the Oracle relational database kernel; other versions will follow it soon.

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And Oracle has hedged its bets by joining both Unix International Inc and the Open Software Foundation.

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Valid Logic Systems Inc and Mentor Graphics Corp say they have settled their patent infringement actions against each other, and have entered into cross licence agreements.

Insignia Solutions Inc, Sunnyvale, California, has struck up a similar deal with Motorola Inc to that struck up by Hunter Systems last month (UX No 205), which will result in the bundling of Insignia's SoftPC DOS emulation package with all Unix System V Release 3.2 and V.4 sales: SoftPC will allow any MS-DOS software to be run on Motorola system 68000 and 88000-based hardware without modification.

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The widely used PHIGS graphics standard is moving beyond the Unix and VMS environments to MS-DOS and OS/2: French company CELI of Verrieres-le-Buisson has launched the msgPHIGS library of graphics functions for 2D and 3D modelling and animation on MS-DOS and OS/2 machines.

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Apricot Computers Plc has won a £5 million OEM contract for its Qi Micro Channel boxes in West Germany: the customer is Rein Elektronik GmbH, which has 100 dealers.

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It was a case of "anything you can do..." at the International Electronic Devices conference in San Francisco this week, and IBM led the way by describing an experimental circuit in 0.25 micron CMOS that switches in a blinding 33 picoseconds, an order of magnitude faster than the ECL in today's mainframes.

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Not to be outdone, AT&T's Bell Laboratories described a bipolar transistor that is claimed to switch in 7 picoseconds - the ECL in Amdahl's biggest mainframe switches in about 140pS. The part is expected to find applications in fibre-optic communications.

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And Fujitsu Ltd took the rostrum to announce that it had designed what it claims is the first memory cell for a 64M-bit memory chip - set for 1993 or 1994.

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Jaguar Cars Ltd has bought a Convex C210 minisupercomputer to run the engineering analysis applications programs - including MSC/NASTRAN, ABAQUS, and ADAMS - used to design Jaguar cars: the new system replaces a bureau service, which was apparently proving increasingly expensive as the use of finite element modelling techniques increased.

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And Cray Research Inc is to supply a Cray X-MP supercomputer, value undisclosed, to Mazda Motor Corp: to go into Hiroshima early next year, it is to be used to design cars.

Control Data Corp, Minneapolis, says it will sell its Scientific Information Services subsidiary to the Power Computing Co arm of McDermott International Inc by the end of the year.

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In the first of a series of launches to be made under an "Integration at Work" banner, Sphinx Ltd, Maidenhead, Berkshire, UK, has bundled Uniplex, and fax and telex products from Systems and Telecoms into one package: this allows Unix and Xenix users to prepare all telexes and faxes on the Uniplex word processor, which are then passed to S&T's S-Message management system for checking and sending.

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Steve Jobs has resigned as chairman of his Pixar Inc graphics company in San Rafael, California where he remains the majority shareholder, and is succeeded by former president Ed Cutmull; Jobs stays on the board.

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And Steve Jobs has reportedly ordered software developer Rick Scherle to stop work on an interface for the Apple Computer Macintosh which appears similar to one on Jobs' NeXT workstations: Scherle designed an interface similar to NeXTStep and called it Browser; it displays files, enables users to launch applications and open folders, but displays the information in vertical columns starting on the left with the root directory; he put the thing into the public domain on a Berkeley Macintosh user group bulletin board and soon got the call from Jobs, so he is now working on one that will be a bit different.

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Apple Computer Inc is so worried about all those endless leaks out of the company that it has made a movie to show to new employees, starring the company's chairman John Sculley tossing and turning in his bed at night as he worries about Apple corporate secrets leaking away, undermining the company and his power, before falling into fitful sleep and dreaming of employees shooting off their mouths, one employee telling another about his latest project, and the tale being passed on - and on - but if its an internal movie, how come we know about it? Can't you guess...

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We'd like to take this opportunity to wish all our readers a very Merry Christmas, and a happy and successful New Year.

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