

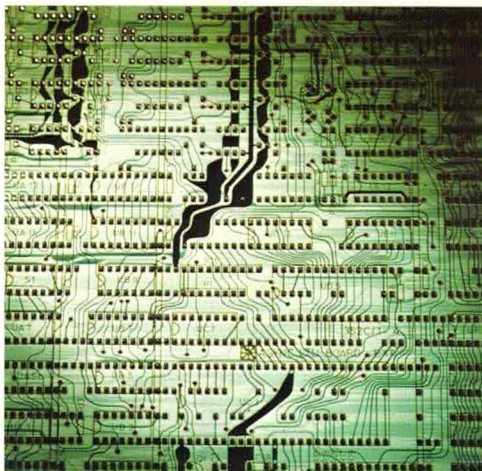
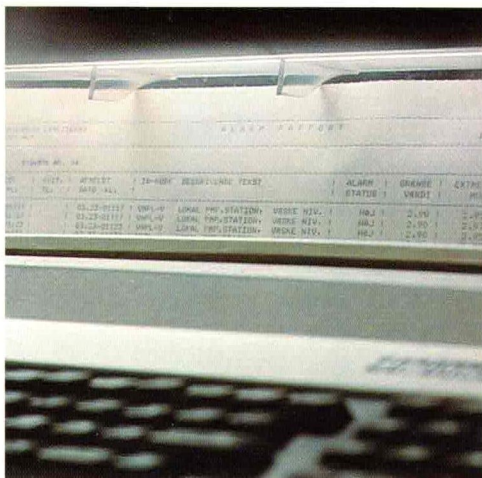
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Edb

Elektronik

Det er 15 år siden Christian Rovsing A/S blev etableret. Ved årsskiftet 1978/1979 var der 321 ansatte fordelt på de 2 divisioner edb og elektronik, der tilsammen råder over ca. 11.000 m² etageareal. Omsætningen i 1978 var på 86,5 mio. kr. svarende til en stigning på 30% i forhold til 1977. Årets nettoresultat blev på 2,1 mio. kr.

Firmaet har igennem årene udviklet et antal produkter og serviceydelser, der i stigende omfang afsættes på det internationale marked. Eksporten udgjorde 30% af 78-omsætningen.

Som det fremgår af delberetningerne fra divisionerne for edb og elektronik, er der indgået kontrakt på flere betydningsfulde ordrer i årets løb, hvoraf nogle rækker flere år frem.

Der er i 1978 lagt store ressourcer i elektronik-divisionens videreudvikling af både hardware og software til CR80 systemet.

Den største ekspansion fremover forventes at ske på eksportmarkederne. Da produkterne har vist sig at være klart konkurrencedygtige i international konkurrence, er forventningerne til eksporten stor. På denne baggrund har datterselskabet Christian Rovsing Corporation åbnet fast kontor i USA til betjening af det amerikanske marked.

De opnåede resultater i løbet af firmaets eksistens er naturligvis ikke kommet af sig selv. Der ligger en kreativ og energisk indsats fra medarbejdernes side bag resultaterne. Firmaets vigtigste aktiv er medarbejdere med stor kompetence og konstruktive egenskaber. En af grundpillerne i firmastrukturen har derfor været at skabe et miljø, der giver grobund for nytænkning og nyudvikling. Udfordringerne til medarbejderne er store, men er mødt med et stærkt engagement og entusiasme i arbejdet.

Christian Rovsing A/S was founded 15 years ago. By the end of 78 the company employed 321 people in two divisions, data processing and electronics. In 1978 the turnover amounted to 86,5 mill. Danish Kroner, which is an increase of 30% over 1977.

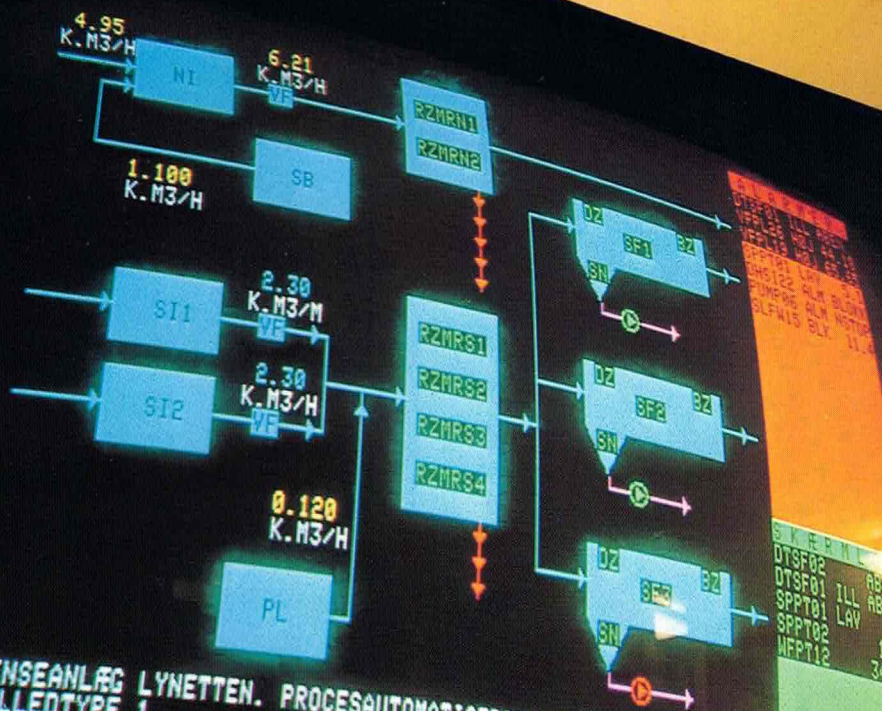
Over the years the company has developed a number of products and services, and sales of these in the international market continue to go up. Of the company's total turnover in 1978 exports accounted for 30%.

As will appear from the individual reports from the divisions, several important contracts were concluded during the year. Some of these contracts will run for several years.

In 1978 large resources were allocated by the electronics division to further development of both hardware and software for the CR80 system.

In the future the largest expansion is expected to be in the export markets, and the expectations from these markets are high, as the products have proved themselves to be clearly internationally competitive. In the light of this, our subsidiary, Christian Rovsing Corporation, has opened a permanent office in the USA to serve the American market.

The results achieved have not come automatically, but can be attributed to creative and energetic efforts from the staff. The company's most valuable asset is a competent staff who possesses constructive qualities. It has been imperative to create an environment that provides the genial soil for new thinking and new developments. Our employees are faced with big challenges, but in accepting them they demonstrate a high degree of involvement and enthusiasm.



PL 28	PL 29	PL 30	PL 31	PL 32	PL 33	PL 34	PL 35	PL 36	PL 37	PL 38
10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

DTSF02	DTSF01	SPPT01	SPPT02	WFPT12	ABEN	ILL	LAV
					5.1	19.4	34.10

RENSEANLÆG LYNETTEN.
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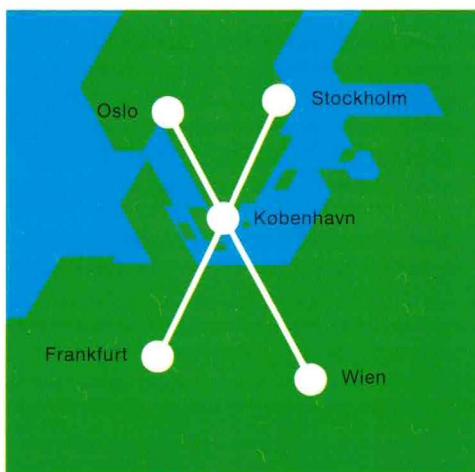
PROCESAUTOMATISERINGSSYSTEM
 PROCESDIAGRAMMER
 COCON/MINI

DATO 1979.03.27 KL 15.13

Edb-divisionen i 1978: Godt økonomisk resultat

Afdelingen for tekniske computersystemer har i 1978 færdigudviklet COCON konceptet, der sammenfatter hidtidige erfaringer indenfor området »datamatbaseret proceskontrol« og den nyeste datateknik. På dette grundlag markedsføres standardprodukterne COCON/11 og COCON/MINI, der er nøglefærdige overvågnings/styrings-systemer for henholdsvis større og mindre installationer. En central funktion i disse systemer er den avancerede operatorkommunikation via en eller flere grafiske farveskærme; - en facilitet, der muliggør store besparelser i anden kontrolrumsindretning.

In 1978 the department for technical computer systems finished the development of the COCON concept, which summarizes previous experience within the field of "computerbased process control" and the most recent EDP techniques. The standard products COCON/11 and COCON/MINI are marketed on this basis. These products are ready-to-use monitoring/control systems for large and small installations respectively. A central function in these systems is advanced operator communication via one or more graphical colour screens - a solution which is considerably more economic than conventional control room equipment.



I løbet af 1978 er vort internationale telenet udbygget. Der er nu faste kredsløb (4800 baud) etableret til Oslo, Stockholm, Frankfurt og Wien. Telenettet anvendes i et on-line system med 11 decentrale minidatamater og ca. 90 terminaler tilsluttet.

Edb-divisionen har i 1978 gennemført en omfattende udbygning af teknisk service på minicomputerudstyr og telenetværk.

During 1978 our international telecommunications network was extended. Now we have permanent leased lines (4800 baud) to Oslo, Stockholm, Frankfurt and Vienna. The telecommunications network is used in an on-line system with 11 decentralized minicomputers and approximately 90 terminals.

In 1978 the data processing division considerably extended the technical service on minicomputer equipment and telecommunications networks.

For edb-divisionen blev 1978 et godt år med høj kapacitetsudnyttelse og et godt økonomisk resultat. Omsætningen steg med ca. 34% i forhold til 1977 og blev på 55 mio. kr. Medarbejderstaben blev øget med 27 til 163 personer.

I midten af 1978 flyttede elektronikdivisionen ud fra lokalerne i Herlev til nyopførte bygninger i Ballerup, således at edb-divisionen har overtaget det samlede areal i Herlev på ialt 5.500 m². Der er herved skabt betydeligt bedre rammer for edb-divisionens aktiviteter.

Edb-divisionens aktiviteter har fortsat især været samlet omkring tre hovedområder: • dataservice og anvendelse af minidatamater til administrative edb-opgaver, • udvikling af systemer for tekniske edb-opgaver samt • konsulentbistand inden for system- og programudvikling.

En stigende del af omsætningen opnås på eksportmarkeder i Skandinavien, Tyskland og Østrig.

På dataservice-området er der sket en yderligere udbygning af terminalsystemerne. Telenettet er udbygget og omfatter nu faste kredsløb til Oslo, Stockholm, Frankfurt og Wien foruden et omfattende net i Danmark. Den centrale maskinkapacitet, der er til rådighed i datacentret, består af et IBM 370/158, et IBM 370/138 og et duplex Burroughs B6700 anlæg.

Den stigende anvendelse af decentrale minidatamater er fortsat i 1978. Disse anlæg anvendes dels som selvstændige enheder til administrative opgaver i erhvervsvirksomheder og organisationer, og dels som terminalenheder koblet via telenettet til datacentret. Ved årets udgang var det samlede antal leverede minidatamater af typerne CR100, CR200, CR400 og CR600 ialt ca. 50 anlæg. Afdelingen

for teknisk service udfører vedligeholdelse af disse anlæg i Danmark og udlandet. Afdelingen har gennemgået en kraftig ekspansion i årets løb. Som følge heraf er der oprettet en selvstændig afdeling for teknisk service i Jylland placeret i Århusområdet.

I årets løb blev de første større systemer med vor egen udviklede og producerede minidatamat CR80 taget i brug. Afsætningen af denne datamat forventes at stige kraftigt i de kommende år.

Inden for edb-området er der i 1978 anvendt betydelige ressourcer på videreudvikling af administrative standardsystemer for både data-service og minidatamater. I dag tilbydes standardiserede løsninger bl.a. for løn, fakturering, lagerstyring, debitor- og kreditorbogholderi, finansbogholderi, budgettering og ordrebehandling.

Endelig har vi optaget markedsføringen af en bærbar terminal (Micronic) baseret på en microprocessor og med mulighed for aflevering af opsamlede data over telefonnettet. Terminalen er hidtil især afsat i butiksektoren til ordreaftagelse.

Afdelingen for tekniske edb-systemer har i årets løb været beskæftiget med opgaver indenfor proceskontrol bl.a. til rensningsanlæg og til cementfabrikker. Også på dette område går udviklingen i retning af standardiserede systemer, baseret på minidatamater og i et vist omfang på microprocessorer. For »I/S Datacentralen af 1959« udvikler afdelingen desuden et omfattende front-end system for styring af telenettet til et antal centrale IBM-anlæg. Systemet består af 2 CR600 anlæg og 3 CR80 minidatamater. Der forventes i de kommende år en betydelig vækst indenfor området datanet og front-

end enheder. Minidatamaten CR80 har her vist sig meget konkurrencedygtig.

Afdelingen for konsulentbistand og udvikling af programmel har i årets løb udbygget sine aktiviteter og beskæftiger ved årets udgang omkring 35 konsulenter. Opgaverne udføres dels i Danmark i form af rådgivning ved valg af edb-løsninger og planlægning og programmering af edb-systemer, og dels i udlandet, hvor konsulenterne deltager i projekter for en række store industrivirksomheder og internationale organisationer.

For the data processing division, 1978 was a good year with a high capacity utilisation and a good financial result. The turnover went up by approx. 34% compared with 1977 and amounted to 55 million Danish Kroner. The number of employees increased by 27 to 163.

About the middle of 1978 the electronics division moved out of the premises at Herlev and into new buildings at Ballerup, so that the data processing division has taken over the total space of 5500 m² at Herlev. In this way far better conditions have been created for the division's activities.

The activities of the data processing division continue to be concentrated in three main fields: • data service and application of minicomputers for administrative EDP tasks, • development of systems for technical EDP tasks, and • consultancy work on systems and development of programmes.

An increasing part of our turnover is achieved in the export markets, Scandinavia, West Germany, and Austria.

In the data service sector there has been a further expansion of the

terminal systems. The telecommunications network has been expanded and now comprises permanent leased lines to Oslo, Stockholm, Frankfurt and Vienna - besides an extensive network in Denmark. The central computer capacity available in the data centre comprises IBM 370/158, IBM 370/138 and a duplex Burroughs B 6700 system.

The increasing use of decentralized minicomputers continued during 1978. These computer systems are used partly as stand-alone systems for administrative tasks in the business sector and by organisations, and partly as intelligent terminal systems linked to the data centre via the telecommunications network. By the end of the year we had delivered approx. 50 minicomputer systems of the types CR100, CR200, CR400 and CR600. Maintenance of these computers in Denmark and abroad is handled by the technical service department. The department has expanded considerably during the year. As a result an independent department for technical service in Jutland has been established in the Aarhus area.

During the year the first large systems incorporating the minicomputer CR80, which was developed and produced by our company, were put into service. Sales of this computer are expected to rise considerably over the next few years.

Within the EDP field considerable resources have been devoted to the further development of administrative standard systems for both data service and minicomputers. Today we can offer standardized solutions to problems such as wages, invoicing, inventory control, general ledgers, financial accounting, budgeting, and the handling of orders. Moreover, the EDP division has taken up the marketing of a portable

terminal (Micronic) based on a micro-processor and with the possibility of passing on accumulated data via the telephone network. So far the terminal has been sold especially in the retail sector for the placing of orders.

During the year the department for technical EDP systems has been occupied with tasks in the field of process control, for instance for purification plants and cement works. In this field too, the trend of developments is towards standardized systems based on mini-computers and to a certain extent on micro-processors. The department is also developing an extensive front-end system for "I/S Datacentralen af 1959" for the control of the telecommunications network to a number of central IBM systems. The system comprises 2 CR600 computers and 3 CR80 mini-computers. In the next few years there is expected to be a considerable growth within the field of data networks and front-end computers. The minicomputer CR80 has proved to be very competitive.

The department for consultancy and software developments has extended its activities during 1978 and by the end of the year employed 35 consultants. The work is done partly in Denmark in the form of advisory services in connection with selection of EDP solutions and planning and programming of EDP systems, and partly abroad where our consultants participate in projects on behalf of a number of big industrial companies and international organisations.



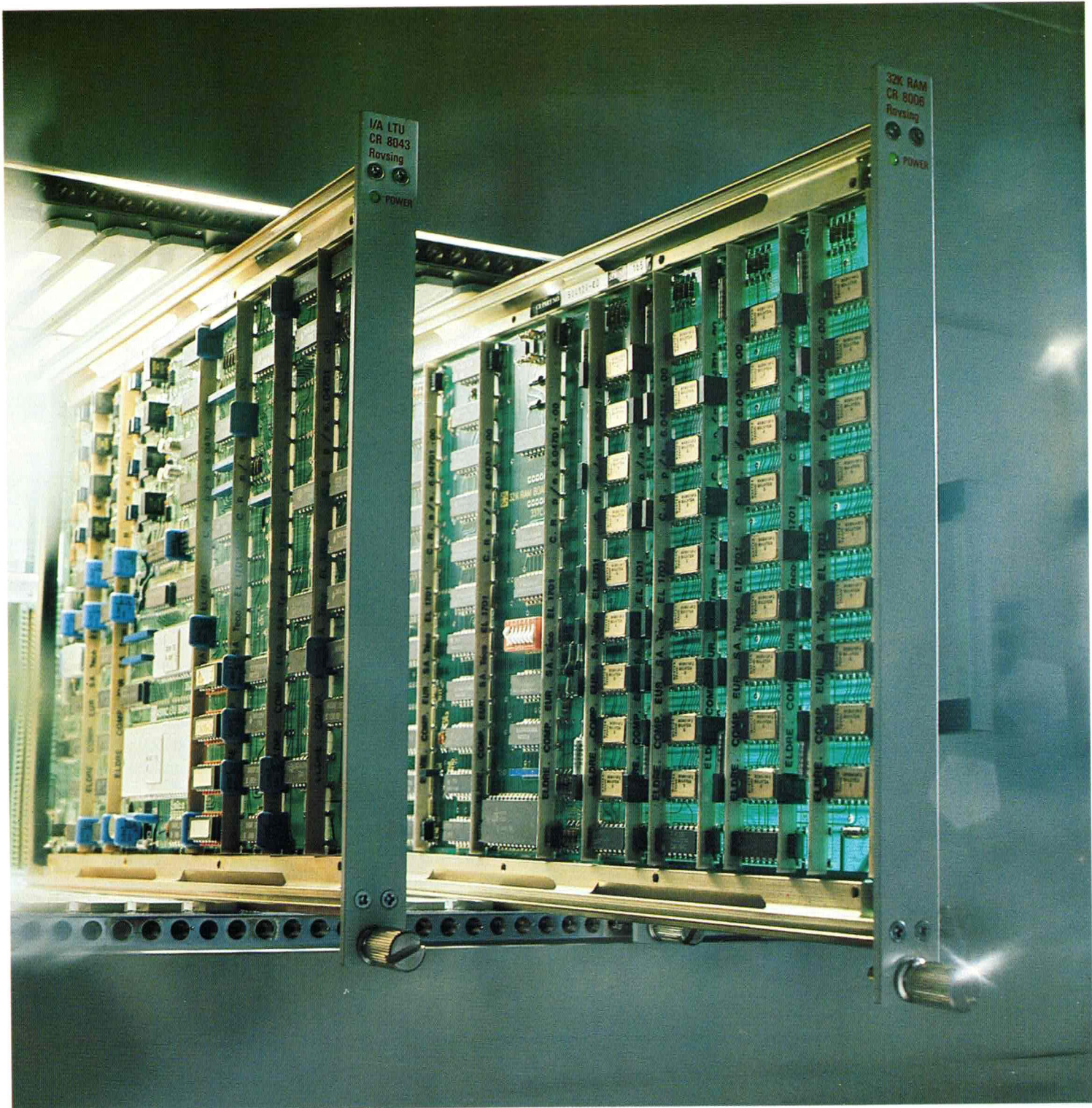
I årets løb er der optaget forhandling af den svenske fremstillede bærbare terminal Micronic. Terminalen indeholder en microprocessor med programlager og op til 32 KB datalager. Den bærbare terminal anvendes f.eks. indenfor butiksområdet til ordreoptagelse. De indtastede data kan sendes over telefonnettet til en central datamat.

During the year we took up the sale of the portable terminal "Micronic", which is produced in Sweden. The terminal contains a microprocessor with programme memory and up to 32 KB data memory. The portable terminal is applied for instance within the retail trade for the taking of orders. The keyed-in data can be transmitted via the telephone network to a central computer.



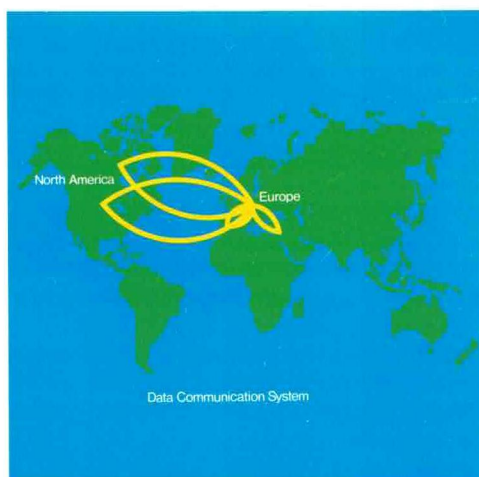
I december 1978 gennemførtes en vellykket fabriksprøve af det datamatbaserede proceskontrolsystem for »Renseanlæg Lynetten«. Prøven dokumenterede et avanceret og alsidigt anlæg omfattende bl.a. faciliteter for on-line opgaveopbygning og operatorkommunikation via grafisk farveskærmsterminal. Systemet har i kraft af sin fleksibilitet fået tildelt forskellige tillægsopgaver; eksempelvis energispareprogrammer for procesmaskineri og automatisk kalibrering af forureningsmålinger.

In December 1978 the computer-based process control system for the purification plant "Lynetten" was successfully tested at our factory. The test included advanced and versatile features such as on-line task structuring and operator communication via graphical colour screen terminal. Because of its flexibility, various additional tasks have been assigned to the system, for instance energy saving programmes for process machinery and automatic calibration of measurements of pollution.



CR80 minidatamaten er en helt igennem dansk mini-datamat. I det forløbne år er der opnået et betydeligt internationalt salg. CR80-fremstillingen er baseret på høj teknologi, og alle dele består af udvalgte materialer og højt udviklede komponenter. Udviklingen af CR80 maskinel og programmel fortsætter for at sikre udvidede anvendelsesområder.

The CR80 computer is a Danish minicomputer throughout. During the year the company has had considerable international sales. The CR80 production is based on advanced technology, and all modules consist of selected materials and highly developed components. The development of CR80 hardware and software will continue in order to secure new fields of application.



Udviklingen af et avanceret kommunikationssystem til det danske forsvar blev startet i 1978. Systemet består af et netværk med CR80 minidatamater placeret i knudepunkterne. Nettet skal betjene både datatrafik og transmission af meddelelser.

I 1978 indgik Christian Rovsing A/S kontrakt med Danmarks Radio om levering af et Dataassisteret Optage-, Redigerings- og Afviklingssystem; DORA.

The development of an advanced communications system for the Danish Defense started in 1978. The system consists of a network, with CR80 minicomputers placed at nodal points. The network will carry both data and message traffic.

In 1978 Christian Rovsing A/S signed a contract with Radio Denmark concerning the supply of a data-assisted recording, editing and transmission system, called DORA.

Elektronik-divisionens aktiviteter har i 1978 været præget af udflytningen til en helt ny bygning, der er specielt bygget og indrettet til udvikling og seriefremstilling af datamatisk udstyr og elektronik til rumfart.

Elektronik-divisionen omsatte i 1978 for 31,5 mio. kr. Det er en stigning på 26% i forhold til 1977. Medarbejderstaben voksede med 20 til 140 ialt.

Der har i det forløbne år været lagt stor vægt på videreudvikling af CR80-systemet i form af både hardware og software.

CR80-systemet omfatter nu mere end 100 forskellige moduler, der muliggør opbygningen af et stort antal datamatsystemer. Standard software til systemet blev i 1978 udvidet med bl.a. en Pascal Compiler. Et pladelageroperativsystem ventes klart i begyndelsen af 1979. Efterspørgslen efter denne seriefremstillede datamaskine har været stigende. Ved årets udgang er der således indgået kontrakt på levering af omkring 200 CR80-systemer.

Som en nyskabelse er der i computer system-afdelingen oprettet en særlig microprocessor-gruppe, som har udviklet en ny serie microcomputer produkter, som også kan indgå i CR80-systemet.

Computer system-afdelingen har i 1978 opnået ordrer på to større kommunikationssystemer, benævnt FIKS og DORA.

FIKS betegner Forsvarets Integrerede Kommunikations System. Systemet bygges op omkring CR80-datamaten og vil, når det sættes i drift, kunne dække Forsvarets behov for digital kommunikation. FIKS-netværket regnes internationalt for banebrydende, idet man på ét og samme datanet skal kunne udføre »line-switching«,

»packet-switching« og »message-switching« og dermed yde datanet-service til en lang række meget forskelligartede brugere.

Med Danmarks Radio er der indgået kontrakt om levering af et Data-assisteret Optage-, Redigerings- og Afviklingsystem, DORA.

Systemet, der indeholder tre CR80 minidatamater, er et komplekst proceskontrollsystem, der skal assistere med produktion, redigering og udsendelse af TV-avisen, samt øvrige nyheds- og sportsudsendelser i Danmarks Radio. Foruden CR80 datamaterne indeholder systemet en dualiseret TDX-bus med et omfattende antal interfaces til det video-udstyr, der indgår i systemet. Systemet sættes i drift i begyndelsen af 1981.

Rumafdelingen har i 1978 leveret prototypen af strømforsynings-enheden til ECS - (European Communication Satellite) satellittens telemetri- og telekommandosystem efter endt kvalifikationstest. Samtidig er fabrikationen påbegyndt på den første produktionsserie af servoforstærkere til ARIANE - løfteraketter. Udviklingen går mod større produktionsserier for satellitstyr. Højstabile strømforsyninger til andre anvendelser end satellitter er udviklet og leveret til krævende klimatiske forhold, bl.a. til ubemandede automatiske vejrstationer på Grønland.

Indenfor jordudstyr til behandling af satellitbilleder er der leveret et CR80-baseret billedbehandlingsudstyr til det franske meteorologiske institut og til det danske meteorologiske institut. Derudover har rumafdelingen i det forløbne år deltaget i et antal studieprojekter vedrørende tilsvarende systemer til fremtidige satellitter. Det drejer sig om den franske satellit SPOT (Système Probatoire

d'Observation de la Terre) og den fælles-europæiske satellit LASS (Land Application Satellite System).

Som følge af den fortsatte specialisering er afdelingen nu omstruktureret således, at satellitstyr og jordudstyr er udskilt som selvstændige grupper.

Produktionsafdelingen har i 1978 udbygget produktionskapaciteten, og produktionsraten kan inden for de eksisterende rammer tredobles. I produktionen anvendes datamater til styring af afprøvningsudstyret samt produktionsplanlægning og indkøbsfunktioner.

Udsigterne for elektronik-divisionen bedømmes optimistisk, specielt fordi der synes mulighed for at opdyrke utraditionelle markedsområder for CR80 datamat-systemet.

In 1978 the activities of the electronics division were influenced by their moving into a completely new building, which has been especially designed and equipped for the development and series production of computer equipment and electronics for space projects.

In 1978 the electronics division had a turnover of 31.5 million Danish Kroner. This is an increase of 26% compared with 1977. The staff increased by 20 and now totals 140.

During the past year great importance was attached to the further development of the CR80 system - both hardware and software.

The CR80 system now comprises more than 100 different modules, which enables the construction of a great number of different types of computer systems. In 1978 a Pascal Compiler was added to the standard software of the system. A disc operating system is

expected to be ready at the beginning of 1979. The demand for this computer, which is produced in series, has been increasing. Thus by the end of the year the company had signed contracts for the delivery of about 200 CR80 systems.

An innovation is the formation of a special microprocessor group under the computer systems department. This group has developed a new series of microcomputer products, which can also be integrated into the CR80 systems.

In 1978 the computer systems department secured orders for two large communications systems called FIKS and DORA.

FIKS denotes an integrated communications system for the Danish Defense. The system is based on the CR80 computer. When it has been put into operation it will be able to cover the digital communication required by the Danish Defense. In international circles the FIKS network is regarded as epoch-making, as it will enable "line-switching", "packet-switching", and "message-switching" on one and the same data network to a wide number of very different users.

A contract has been signed with Radio Denmark concerning the delivery of a data-assisted recording, editing and transmission system, known as DORA.

This system, which comprises three CR80 minicomputers, is a complex process control system. It is to be used for the production, editing and transmission of the TV news and sports programmes on Danish TV.

Besides the CR80 computer the system comprises a dualized TDX-bus with a large number of interfaces for the video equipment that forms part of

the system. Operation will start in the beginning of 1981.

In 1978 the aerospace systems department delivered the prototype of the power supply units for the ECS (European Communications Satellite) satellite's telemetry and telecommand system following the successful completion of the qualification test. At the same time the manufacturing of the first production series of servo-amplifiers for the ARIANE launcher started. Efforts are also being devoted towards the sales of power supply systems for other than satellite applications, for instance for unmanned, automatic weather stations in Greenland.

The ground station equipment group has delivered CR80-based picture-processing equipment to the French Space Meteorological Office and to the Danish Meteorological Office. Moreover, the aerospace systems department has participated in a number of study projects regarding similar systems for future satellites. The satellites in question are the French satellite SPOT (Système Probatoire d'Observation de la Terre) and the common European satellite LASS (Land Application Satellite System).

As a consequence of the continued specializing the department has been restructured in such a way that satellite equipment and ground station equipment now constitute independent groups.

In 1978 the production department expanded its production capacity which can be treble within the existing facilities. Computers are being used in the production department for the control of the testing and for the production planning and purchasing functions.



De nye produktionslokaler i Ballerup har skabt muligheder for yderligere ekspansion. I produktionen anvendes datamater til styring af afprøvnings-udstyret samt planlægning af hele produktionsapparatet.

Bygningen i Ballerup er indrettet med specielle »rene rum« til produktion og afprøvning af satellit- og jordudstyr.

The new production facilities at Ballerup have made further expansion possible. Computers are being used for planning and production control and as part of the test equipment.

The Ballerup facilities are equipped with special "clean rooms" for the production and testing of satellite and ground station equipment.

Status/Balance Sheet

	1978/1000 kr.	1977/1000 kr.
Aktiver/Assets:		
Likvide aktiver/Available assets	2,899	4,388
Diverse debitorer/Accounts receivable	16,761	13,619
Igangværende arbejde, varelager/ Work in progress, inventory	5,117	2,916
Anlægsaktiver/Fixed assets	11,296	3,221
Totale aktiver/Total assets	36,073	24,144
Passiver/Liabilities:		
Diverse kreditorer og forudbetalinger/ Payables and prepayments	11,525	8,158
Skyldig til det offentlige/Taxes payable	1,891	2,226
Bankgæld og udlandslån/Bank loans and foreign loans	17,464	10,573
Total gæld/Total liabilities	30,880	20,957
Egenkapital/Own capital	5,193	3,187
specificeret således/specified as follows:		
Aktiekapital/Share capital	2,000	
Lovmæssig reservefond/Statutory reserve funds	500	
Ekstra reservefond/Reserve funds	2,693	



