

CONTACT

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H.M. Carl XVI Gustaf presides over the inauguration ceremonies, flanked by Ericsson's CEO, Lars Ramqvist (left) and Board Chairman Björn Svedberg.

Royal inauguration in Kista

August 18, 1994 was a red letter day for Ericsson and for all in Sweden who are interested in advanced micro-technology. Ericsson Component's so-called "miniplant"

for sub-my microelectronics in Kista – was inaugurated on that date. The presence of King Carl XVI Gustaf underscored the plant's national role. **16**

Power in modules

Power supplies for telecommunications constitute an important business for Ericsson. The field is characterized by rapid development. CONTACT takes a closer look at the latest technology.

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NAFTA opens new door

The NAFTA agreement, North America's equivalent of the EU, is creating new playing rules for firms in the U.S., Canada and, in particular, Mexico. It can have a key role in Mexico's growth.

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Mobilizing in Kirgistan

Overshadowed by its "digital" successes, Ericsson's sales of analog mobile systems still do well, notably where there are acute needs for better communications. Kirgistan, in central Asia, is one example.

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Australians look ahead

The Australian Government is hoping that advanced tele-technology will help make the country a very strong factor in the region. Ericsson is one of the leading players in this attractive market.

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Six-month profit is SEK 2.3 billion

The favorable trend for Ericsson continues. The six-month interim report, released August 18, reports a profit of SEK 2,290 million. This is nearly double the year-earlier amount. At the same time, order bookings and net sales rose sharply. The Radio Communications Business Area now accounts for nearly half of Ericsson's net sales.

Ericsson's order bookings rose for the eleventh consecutive quarter. Continued receipt of orders in the radio sector again accounted for the largest increase, but sales of AXE for wired networks have also been favorable. In the wake of the business successes, the number of employees has now increased substantially. During the first six months 4,792 new employees joined Ericsson.

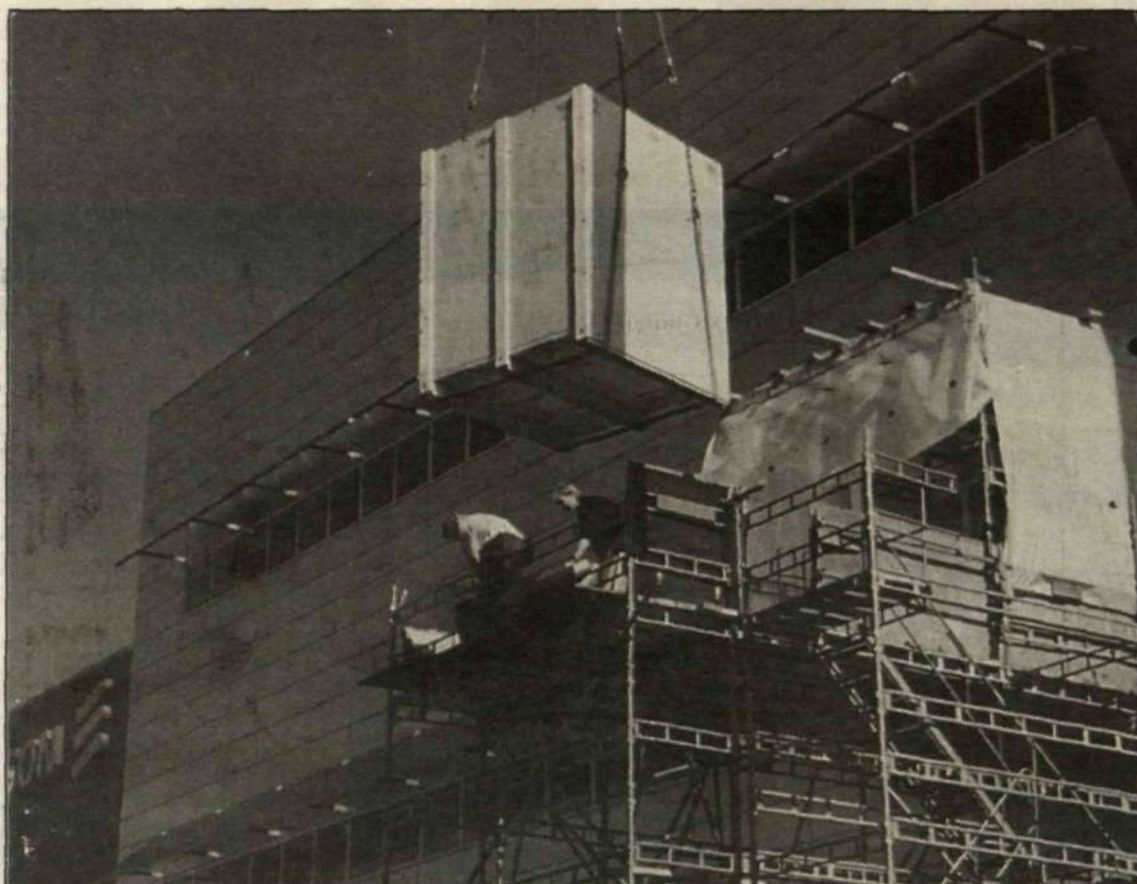
The interim report for the six months ended June 30 is provided in its entirety below.

INTERIM REPORT

Six months ended June 30, 1994

Ericsson's order bookings for the first six months of 1994 increased 19 percent to SEK 40,342 m. (SEK 34,036 m. in the corresponding period in 1993). Consolidated net sales rose 33 percent to SEK 36,514 m. (27,394). Pre-tax income for the period improved 78 percent to SEK 2,290 m. (1,286), including SEK -3 m. (loss: 37) in net capital gains. After taxes paid and deferred taxes, and after full conversion, income per share was SEK 6.68 (2.70).

Order bookings in the second quarter also increased after large orders, mainly from China, Sweden, the U.S. and Italy. The increase in net sales, to which all business areas contributed, was very strong, particularly in Japan, the U.S., Sweden, Australia



Building the new micro electronics plant in Kista has been one of the heavy investment projects during first half of 1994. Ericsson's total investments amounted to SEK 2,424. The number of employees increased 4,814 during the same period.

and China. The Radio Communications Business Area posted the largest increase in order bookings and net sales.

Ericsson's largest single market is the U.S., with 11 percent of total net sales, followed by Sweden, Italy, Great Britain and China, which has now become the fifth largest market with a 6-percent share of net sales.

Costs in relation to net sales have declined somewhat, despite continued heavy investments in technical development, primarily in the areas of mobile telephony, public switches, broadband and transport networks.

The improvement in earnings is attributable mainly to Radio Communications, Ericsson's largest and fastest growing business area. Currency movements have had only a marginal effect.

The number of employees increased 4,814 during the first six months, of which 1,300 in conjunction with the acquisition of

Teli. Most of the increase is a result of new employment, primarily in the Swedish operations.

OUTLOOK

Positive development is foreseen also for the remainder of 1994. Earnings for the full year will be significantly better than for the preceding year.

BUSINESS AREAS

PUBLIC TELECOMMUNICATIONS posted an increase in net sales, mainly in Thailand, Spain and China. Part of the increase is attributable to the acquisition of Teli, which also explains a large portion of the increase in order bookings. Significant new orders were received in China.

RADIO COMMUNICATIONS reports an increase in net sales of slightly more than 60 percent after continued growth in sales during the second quarter. Japan has already become the business area's second largest market after the U.S.. The sharp rise in order bookings is attributable mainly to China, Great Britain and the U.S.

BUSINESS NETWORKS reports increased net sales, primarily as a result of a positive trend in network operations, among ot-

hers, in markets in Southeast Asia. Private switches and data networks experienced increased price pressures. Consequently, an action program was initiated. Order bookings rose somewhat.

COMPONENTS reports a strong increase in net sales and order bookings. All business units contributed to this improvement.

DEFENSE SYSTEMS also reports a strong increase in sales, while order bookings in comparison are somewhat lower as a result of the large order in the corresponding period a year earlier.

FINANCING

Ericsson's cash flow improved, but was negative due mainly to continued inventory build-up, new investments in fixed assets and the acquisition of Teli. The equity ratio was 33.1 percent (32.6). An improvement is expected for the full year regarding both cash flow and equity ratio.

CAPITAL EXPENDITURES

Ericsson's investments in property, plant and equipment amounted to SEK 2,424 m. (1,573), of which expenditures in Sweden totaled SEK 1,542 m. (838).

Stockholm, August 18, 1994
Lars Ramqvist

**Lars Ramqvist:
Much
better than
last year!**

“Again, for the second quarter of 1994, we are reporting an improvement in order bookings. Accordingly, we have now been able to note an increase in interest for our systems and products for the eleventh consecutive quarter.

We are also reporting a continued sharp increase in net sales during the second quarter. All business areas are contributing, but it is primarily Radio Communications which is developing very strongly. The increase for the business area as a whole was slightly more than 60 percent during the first half of the year, while the main areas systems and terminals for mobile telephony rose a full 80 percent. Order bookings in mobile telephony were also very strong.

Mobile telephony is currently one of the strongest growing areas in the telecommunications field. Therefore, it is very pleasing that we are maintaining our dominant position internationally as a system supplier. Today, we are also strong in the new digital pocket telephones.

In Public Telecommunications, development is very positive for the AXE system, which is being continually adapted to new demands. We are also investing heavily in broadband and transport network products, which are in demand to an increasing extent.

In order to secure our future competitiveness, it is important that we invest heavily in microelectronics. This is the base and the prerequisite for all modern electronics and telecommunications and, consequently, of the greatest strategic significance for Ericsson. We have now invested in the range of SEK 1 billion in a new modern plant for the design and production of microelectronic components (0.35 - 0.5 micron CMOS technology) in Kista, outside Stockholm. This provides us with additional improved competitiveness for many years ahead. The new plant is the result of the very favorable cooperation we have enjoyed for several years with U.S.-based Texas Instruments.

Our successes are based on goal-oriented, long-term investments within the most expansive areas of telecommunications. As a result of the sharply higher net sales in the first half year it has been possible to continue our strong investments in technical development for increased future competitiveness.

RADIO BREAKTHROUGH IN MALAYSIA

Ericsson has received an order valued at SEK 620 million from Telekom Malaysia. The order is strategically important since it includes RAS 1000, a system for Radio in the Local Loop, that is, for expansion of the subscriber network from local stations to the subscribers using radio rather than cable. Prior to 1995, 40,000 subscribers will be connected to the new system.

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Technical heavyweights meet in Stockholm

Despite the fact that it was the world's foremost conference on mobile telephony and that it was being held outside North America for the first time, there was little interest on the part of the mass media when the 44th VTC conference was held in Stockholm in mid-June.

The reason? This was a conference for experts at which very high-level technical research was presented on future systems that will not appear until after the year 2000.

VTC, the annual Vehicular Technology Conferences have traditionally been a North American affair. Originally the conferences were devoted to vehicular technology in such applications as automotive electronics, railway signaling systems,

Mobile communications conference first time outside North America

etc. but over time they have come to be dominated increasingly by mobile communications and are now for all practical purposes mobile telephone conferences.

VTC is one of the ten conferences regularly sponsored by the IEEE, the Institute of Electrical and Electronic Engineers.

This year's VTC was sponsored by the IEEE and SER, the Swedish National Association of Electronic and Computer Engineers, with strong support of Ericsson and Swedish telecom operator Telia.

Record attendance

The conference set many records. There were more participants than ever before, about 870 compared with the normal number of 500 - 600. Most came from Europe, and the number of Swedish delegates was high, about 200 persons. The participants represented both operators and manufacturers, as well as university researchers.

The main subjects were personal telephony and mobile systems of the future. Only about five percent of all presentations during the three-day conference were devoted to subjects other than mobile communications.

The rivalry between TDMA and CDMA, the two competing access met-



Abstracts from the 44th VTC conference consisted of 1,400 technical texts, which filled three volumes the size of telephone directories that together weighed about five kg. In two or three years, this information will be distributed on CD-ROMs.

hods for future mobile systems, was less evident at the conference. TDMA (time-division multiple access) divides the frequency band into regularly occurring intervals and is the method used in GSM and other systems. CDMA (code-division multiple access) codes signals in a broad frequency band and is a technique now being developed in the U.S. which is reputed to provide substantially increased capacity.

Third generation

Instead, the conference focused more on variations of the CDMA system and above all on "third generation" mobile telephone systems such as UMTS, Universal Mobile Telephone Systems, which is the working name for a future European standard for true personal telephony which will support all types of communication, including data, voice and images.

The topics were grouped into various sessions, such as CDMA Field Test, Handover, Propagation: Microcells, Receiver Techniques, Frequency Hopping, Mobile Satellites, Antennas, etc.

"It is very stimulating to group talks that are devoted to the same topic but present it in different perspectives," says Sven-Olof

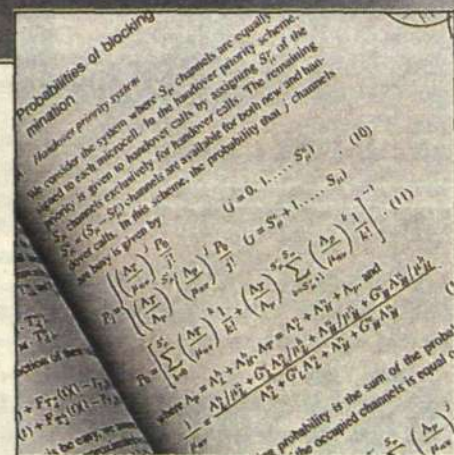
Öhrvik from Ericsson Radio, who was the chairman of the program committee.

Panel discussion

The traditional panel discussion, chaired by PacTel's Dr. William Lee, also generated considerable interest. The panel was composed of representatives from Ericsson, U.S.-based Qualcomm, first to launch a CDMA system, AT&T, Japanese telco NTT, Motorola's division for personal telephony and Telia Research, the Swedish state-owned operator's research arm.

The subject was PCS (personal communications services), a future system for personal telephony. Håkan Ericsson from Ericsson advocated the development of a hierarchical GSM system of greatly increased capacity as an alternative to the proposed CDMA systems. Ed Tidemann from Qualcomm described the complicated situation in the U.S. with regard to PCS, with scores of licenses, operators and supplier, while Russel from AT&T envisioned how an increasing integration of wireline and wireless networks.

Shuzo Kato from NTT went on to compare cordless and cellular systems and expressed his belief that cordless systems with acceptable sound quality could be



built at a cost not greater than analog mobile telephone systems. NTT will put a test system into operation in Sapporo and Tokyo in April 1995.

Milestone

The real results of the conference remain to be seen, but the most remarkable fact was that this was the first VTC held outside North America.

VTC has a very high status in the industry, and the fact that the conference was held in Stockholm must be regarded both as a milestone and a prestigious victory for both Ericsson, Sweden and Europe.

"This shows that European technology has a scope and a depth that is fully comparable to that of North America," says Sven-Olof Öhrvik.

Lars Cederquist



"VTC has a reputation of being the world's leading conference on mobile communication," says Thomas Sidenbladh from Ericsson Radio.



"The number of presentations on personal telephony has increased," summarizes Sven-Olof Öhrvik, from Ericsson Radio, chairman of the program committee.



Jan Uddenfeldt, executive manager in charge of research for Ericsson's Radio Communications business area, was chairman for the conference.

Six years in preparation

"Preparations for VTC in Stockholm began six years ago, if the first lobbying efforts to bring the conference to Stockholm are included," relates Thomas Sidenbladh from Ericsson Radio's unit for Strategic Business Development, who served as secretary on the conference committee.

Ericsson and Telia were jointly responsible for the conference arrangements. Jan Uddenfeldt, head of re-

arch at Ericsson Radio, was the conference chairman. Östen Mäkitalo, who heads Telia Research, was the vice chairman. Sven-Olof Öhrvik headed the technical program committee. Reviewing all submitted papers and making preparations for the conference itself began at the end of 1992.

Ann Bagge, together with Thomas Sidenbladh, were primarily responsible for the conference arrangements.

Big new orders from Australia

Ericsson Australia has received orders valued at SEK 708 m. to deliver mobile telephone equipment to Telecom Australia (TA).

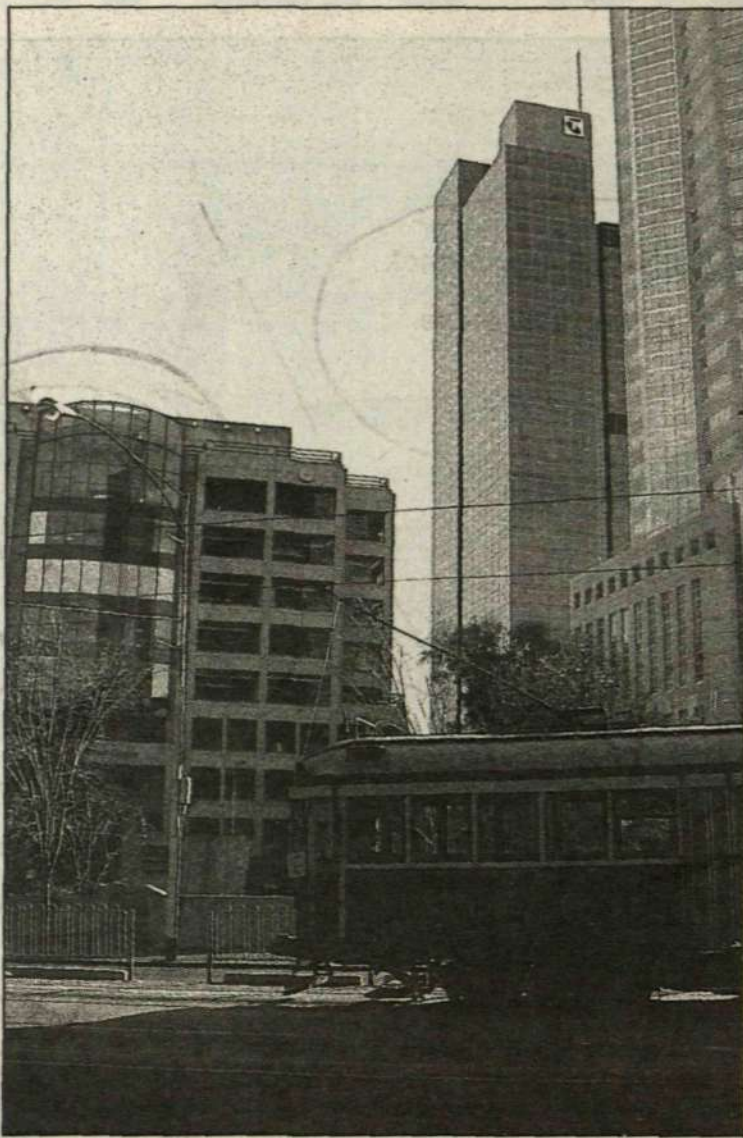
The contracts comprise equipment for the continuing expansion of both the analog AMPS and digital GSM networks operated by TA. Including these orders, Ericsson has received contracts worth SEK 1.1 billion from TA since the first of the year.

The number of mobile telephone subscribers in Australia is growing rapidly, requiring the expansion Telecom Australia is now implementing. The number of subscribers in TA's networks is increasing at a rate of 50,000 a month.

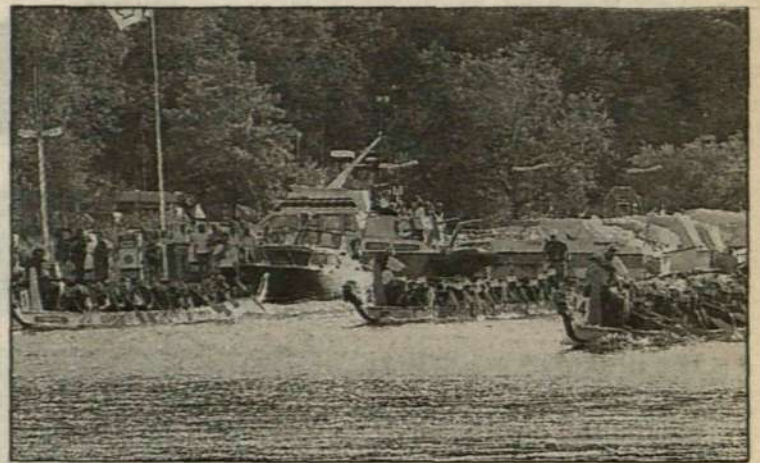
The equipment Ericsson will now deliver consists of AXE exchanges and radio base stations. Most of the equipment will be manufactured in Ericsson's plants at Broadmeadows.

Ericsson's activities in Australia have increased in recent years as a consequence of Telecom Australia's designation of the Company as a strategic partner. This year, for the first time, sales of mobile exchange systems have exceeded Ericsson's large sales of exchanges for the public network.

See pages 13-15 for additional news of Ericsson in Australia.



The mobile telecommunications network in Australia is expanding rapidly. About 50,000 subscribers are being added to Telecom Australia's networks each month. Photo: Lars-Göran Hedin



More than 100 Ericsson crews participated in the dragon-boat paddling competition during the Stockholm Water Festival in August. Ericsson Radar's team finished a highly commendable sixth among more than 1,000 starters. Photo: Kurt Johansson

Trophy to 'Radar' in 'dragon' racing

The world's largest dragon boat competition was a major success for Ericsson, which sent more than 100 teams to the starting line. Moreover, one of them, representing Ericsson Radar Electronics, came in sixth among the more than 1,000 crews that participated.

The annual dragon boat paddling competition at the Stockholm Water Festival was what attracted the record number of Ericsson entrants. Most of them were eliminated in preliminary heats Thursday, August 11. Ericsson Radar's team had the day's best time and advanced to the quarter finals the following Sunday, where they qualified for the semifinal round. A strong performance there earned them a berth in the six-team final. There, the ERE crew finished sixth, 22 se-

conds behind the winning SAS team, in a very, very close race.

The sixth place among more than 1,000 contestants, plus the dragon boat championship of Ericsson, earned ERE a well-deserved trophy. The team was also best in Ericsson in 1993, when it finished seventh in the world's largest dragon boat competition.

Diving mobile telephone

A diving tower, where venturesome persons could test their high-diving skills, was another notable Ericsson attraction at the Water Festival. Among other things, thousands of viewers witnessed a diving mobile telephone. Cecelia Biverot, 49, from Ericsson Radio Access in Kista, was the brave lady who dared to test the waters, first from the 5-meter board and then from the 10-meter platform.

Giant paging system delivered in S. Africa

Ericsson has delivered what is perhaps the world's largest personal paging system to the provincial administration authorities in South Africa.

The system covers one third of a million square kilometers.

Jasco Skypage, Ericsson Radio System's distributor of Wide Area Paging (WAP) systems in South Africa, recently completed the final phase of what may be the world's largest private personal paging system.

The customer, the Transvaal Provincial Administration, has purchased no fewer than 68 local personal paging systems to be used in hospitals and other health care institutions, as well as in the units of the provincial rescue service in an area covering 328,000 square kilometers.



What may be the world's largest private personal paging system was recently installed in South Africa. Ericsson supplied the system through its local distributor.

Each institution has its own local system, built up exclusively with Ericsson products: personal pagers, transmitters, stationary equipment and the like. All the

equipment was produced by Radio Systems B.V. in Holland. Jasco Skypage worked with T. R. Services, Ericsson's distributor of local personal paging systems

in South Africa, to deliver the equipment.

The local networks interface via a sophisticated data network leased from the South African telecommunications administration. They are connected to the WAP network via modem and digital links.

Paging can take place within the local system employed by the user, or via the WAP system. The same procedure is used to initiate a page, regardless of which network a person wishes to use. Everything functions completely automatically.

As far as a user is concerned, the paging is taking place in a single, homogeneous system.

The total project was so large that it had to be divided into four phases. The final phase, which included deliveries of an additional 2,500 paging units and 19 local systems, has just been completed. In all, more than 10,000 alphanumeric personal pagers were delivered.

Ericsson and Raychem in access network deal

Ericsson and Raychem Corporation are forming a joint-venture company to develop, manufacture and market fiberoptical access networks. The new company will take over operations now being handled in Raychem's subsidiary, Raynet.

Telcom operators throughout the world have begun to install fiberoptical distribution systems for the transmission of such advanced services as interactive video and high-speed data. Raynet has introduced economical fiber-based systems for transmitting voice, data and video to telecom subscribers.

The joint-venture company will benefit from Ericsson's and Raynet's combined strength in this area. The company plans to offer cost-effective systems for both broadband and more traditional telecommunications services. The head office of the company, in which Ericsson holds a 51 percent interest, will be in Menlo Park, California.

Personal telephone numbers soon a reality

The dream of a single telephone number that replaces the multitude of numbers for a person's mobile phone, pager, office telephone and home phone is close. It may come as a surprise, however, that the key to its realization may be the office PBX.

"Today, it is the private sector that has the resources," explains Anders Ångström, Ericsson Business Communications.

The whole concept of personal telephony is of course open to debate, but the solution now being promoted by Ericsson's Business Networks business area is undeniably a step toward personal telephony.

It is not personal telephony in the sense that the user has a single phone – usually assumed to be a mobile phone – that replaces all others. Instead the user has a personal number that functions as a public number for all callers.

The various telephones, that is mobile phones, home phones, office phones with advanced functions, will be retained. Each will have its own advantages for the user in particular situations. But which telephone is being used at the moment is not something of which the caller should have to be aware.

Directing calls

The core component in this solution is a server connected to the PBX. The server contains a Personal Assistant, which handles all incoming calls and directs them to the correct address. The personal number is thus linked to the office switchboard. A single server is able to handle 600 to 700 subscribers, but if necessary, several servers can be connected together.

The advantages for the caller are that only one number is needed and that the call will always be forwarded. The caller is either connected to the correct phone and can immediately speak to the person being called or is greeted with a message saying, for example, that the person being called is in a meeting and is expected back in an hour. The caller may then leave a message in a voice mailbox.

The caller will also receive a message if the recipient of the call is being paged so that the caller does not hang up before the call is forwarded.

Filtering calls

There are also several advantages for the call receiver. The receiver can be certain that he or



With a personal telephone number and a call server connected to the office PBX everyone is always available.



"Our personal telephone concept for business users means that every user has a personal number that replaces the multitude of numbers now in use", explains Anders Ångström at Ericsson Business Networks.

she will always be available, which means greater customer satisfaction and increased efficiency. (Today more than half of all calls are unanswered.) The re-

ceiver can also decide who to talk to, who should be able to interrupt a meeting, etc. The Personal Assistant checks the number of the person who is cal-

ling against a list. This filtering applies to all the subscriber's telephones, because all calls are handled by the PBX server.

Setting the search order

The subscriber can also control calls by informing the server that phones should be searched in a given order. If the user is driving his car, for example, the server should try the mobile phone first.

While forwarding calls in this manner is already possible, it is a cumbersome procedure that must be completed before leaving the office. With a call server, users may redirect their calls at any time and from any location to the most appropriate phone for the moment.

Increased scope

"The new call server will be an important component in our personal telephony offerings for business customers," says Anders Ångström, product manager at Ericsson Business Networks.

"Using the new services, companies can support their employees wherever they are, which also means that the scope of business operations is increased significantly. Previously, support of mobile phone users, for example, has been weak, but now these users can be more closely linked to the organization instead of

functioning as isolated agents.

Competitive tool

Communication is a competitive tool for business. The current trend is that employees are becoming increasingly mobile and even more dependent on the telephone. It is also important that customers are treated in a courteous and professional manner. The Personal Assistant takes care of all the voice mailboxes and provides a high level of personal service.

Experience has shown that users with voice mailboxes find it difficult to keep them all updated. The new call server creates a single mailbox for each subscriber, which is much easier to manage.

Available next year

This first version of this new product has now been completed. The first orders will be taken this autumn for delivery early next year. The first customers are expected to be large and medium-sized companies.

"In business networks we find the most demanding users but also a great source of revenue. It will probably take some time before public networks are able to offer personal telephony services," concludes Anders.

Text: Lars Cederquist

EDACS- record in Taiwan

Ericsson GE Mobile Communications has obtained an order from the Taiwanese Government to install a nationwide, land mobile radio network, EDACS (Enhanced Digital Access Communications System). The order is valued at SEK 900 million, and represents the largest-ever order for an EDACS network.

The network will be used by the country's police authority to simplify field operations and improve overall security. It will consist of 83 radio base-stations. User equipment includes 35,000 portable AEGIS terminals and

more than 8,000 mobile units. AEGIS is a fully digital system developed by Ericsson GE which offers communication with mobile computers which is both bug-proof and free of interference.

Long negotiations

The placing of the order was preceded by three years of evaluations and negotiations.

"Yet another national police authority has selected EDACS, making it the world's most sought-after land mobile radio system," says George Fath, Vice President, Ericsson GE Land Mobile Radio. The same system was used by the Norwegian police at the Winter Olympics at Lillehammer.

The equipment will be produced at Lynchburg, Virginia, U.S.,



The EDACS order attracted considerable attention in the U.S. media. George Fath, Vice President, Ericsson GE Land Mobile Radio, appeared on U.S. TV when the news was released. To his left is Craig Szutkowsky, the manager in charge of the Far Eastern market with Land Mobile Radio who landed the order.

over a three-year period beginning this autumn. Production will provide employment for

about 400 persons in, but there are currently no plans of new recruitments.

Billion order from Mercury

The British operator Mercury has been highly successful with its One-2-One personal telephony system.

The system, which in its initial phase will cover Greater London and Birmingham, will be placed in commercial operation this year. One-2-One is based on Ericsson technology.

The Group has now obtained a follow-up order from Mercury valued at SEK 1.7 billion for a continued expansion of the system. The order includes supplementary equipment for the London and Birmingham areas that will be required to accommodate the rapid increase in subscribers to the network, but also for the expansion of other important metropolitan areas. The order also stipulates that Ericsson shall deliver AXE exchanges to cover Mercury's needs through 1996.



London is the site of the world's first commercial personal telephony system, Mercury's One-2-One. The operator is attempting to attract subscribers with inexpensive terminals and low subscriber charges.

Volvo selects Freeset

Volvo Data AB has signed an agreement with Telia to use Ericsson's DECT system, Freeset, for portable telephony applications at Volvo's Swedish plants.

Volvo Data anticipates having an integrated, portable telephony system, covering the entire Torslanda plant complex in Gothenburg, in place prior to year-end 1995. Of a total of 12,000 lines, one fourth of these will eventually be cordless.

"In recent years, we have evaluated various portable telephony systems and technologies and determined that Freeset best fulfills the requirements set today by Volvo Cars and Volvo



Following scrupulous testing, Volvo determined that Freeset best fulfills the requirements for a portable telephone system.

Trucks" says Rolf Ågren, Division Manager, Technology and Production, at Volvo Data AB. "Eventually, the infrastructure for portable telephony at Volvo

will be expanded to encompass office work stations. It will also be expanded to include other locations in Sweden where Volvo conducts operations."

ATM equipment to Telia

Telia's Southern Region has selected Ericsson to supply ATM exchanges in building the communications network of the future for the city of Helsingborg and its companies.

An experimental network will be installed already this autumn, with the commercial network to be placed in operation next year. This will include nine ATM exchanges from Ericsson, all of which will be placed in Helsingborg.

The exchanges will provide Helsingborg's administrations and companies with access to their own local data networks, which now can be expanded to cover the entire city. In this way, the city of Helsingborg, will get the country's first "electronic highway."

Estland is next GSM-country

Estonia's mobile telephone operator, Eesti Mobiiltelefon, has purchased a GSM system from Ericsson's subsidiary in Finland. The system, which in its initial phase will cover the Tallinn area, will eventually cover the entire country.

The project's initial-phase deliveries will include an AXE exchange and base stations. The official introduction of the system is planned for the end of the year.

GSM traffic in Estonia is presently controlled from base stations which Ericsson delivered to Tallinn, but which are controlled by an AXE exchange in Helsinki. The growth of subscribers to the system persuaded Eesti Mobiiltelefon to procure a complete network of its own.

Including the Estonian order, a total of 29 countries have now ordered GSM systems from Ericsson.

More AXE to Greece

Ericsson's licensee in Greece, Intracom, has signed an agreement with the Greek teleoperator, OTE, covering the delivery of AXE equipment. The agreement will run for two years and is valued at almost SEK 700 million. It includes equipment from both Ericsson and Intracom.

Greece's first AXE order was signed in 1988. Today, the number of AXE lines installed or on order totals about 1,250,000.

Expansion of NTM-net in Thailand

Ericsson has obtained an order from the Thai operator, AIS, for the expansion of its NTM 900 network. The contract is valued at SEK 175 million, with deliveries to begin immediately.

The order includes a new generation of RS9000 radio base stations, which was developed by Ericsson Radio Access AB, providing four times as much capacity within the same volume as earlier stations.

AIS operates the largest NMT network outside Scandinavia. Following the expansion, subscriber capacity will increase to more than 700,000.

Expansion in Oman

Ericsson has obtained a contract for a total project valued at SEK 200 million. It pertains to the expansion of the telephony network in the Oman's countryside.

The contract encompasses the development, project planning and construction of a total communications solution in which AXE exchanges and transmission equipment form the base. Since 1973, the Group has been engaged in a number of total projects in the country.

Ramqvist selected as 'Round Table' member

"I think that Lars Ramqvist is a skilled corporate leader with broad international contacts. In addition, he is an outstanding technician in an industry that is expanding strongly."

Pehr G Gyllenhammar, former chairman of Volvo, used these words to explain his selection of Ericsson's CEO to succeed him as a member of the European Round Table (ERT) of industrial leaders.

In an interview with CONTACT, Mr. Gyllenhammar described what lay behind the selection of Lars Ramqvist, and what he thinks the CEO's membership in the ERT can mean for Ericsson.

Gyllenhammar was one of the founders of the ERT, an exclusive group that brings together around 40 of Europe's most powerful industrial leaders. Membership is on a personal basis, but always linked to management of a large enterprise.

To date, the Round Table has participated in realizing a number of large European projects ranging from the "inner market" to the tunnel under the English channel. Several prominent ERT members have also been invol-

ved in the work of the European Union Commission.

CONTACT posed a number of questions to Mr. Gyllenhammar: What do you hope that Lars Ramqvist will contribute as a member of the ERT?

"The European Round Table brings together the leaders of about 40 of Europe's largest industrial enterprises. The contacts with them should benefit Ericsson greatly, primarily since the ERT is undertaking concrete projects to liberalize the EU and strengthen the competitiveness of European industry."

"What, in your opinion, are Lars Ramqvist's strong points?"

"He has a strong interest in research and development. European industry needs investments in the future."

An article in Dagens Nyheter on August 19 expressed some surprise over your choice of Ramqvist "since Ramqvist is (considered to be) within the Wallenberg sphere of interest."

Your comment?

Lars Ramqvist possesses both knowledge and integrity.

Was the selection of Ramqvist an obvious choice, or were there other candidates?

"There were other candidates. ERT members accepted my view that Ramqvist was the right person." **Magnus Backlund**



P G Gyllenhammar has retired from the exclusive European Round Table and has hand-picked Lars Ramqvist as his successor.

Brits sign contract to equip network

Ericsson has received a contract from Eurobell (Southwest) Ltd., the British cable-TV and telecom operator, to build the infra-structure for Eurobell's new telecommunications network in the southern part of Devon in Great Britain.

The order, valued at SEK 180 m., covers delivery of AXE exchanges, MD110 subscriber exchanges and peripheral equipment for a network that will serve 240,000 subscribers. The AXE exchange will act as a node for intelligent network services, enabling Eurobell to offer new services that will substantially strengthen the company's competitiveness.

"This contract represents an important step forward for both companies in terms of meeting customer demand for a highly competitive market," according to Alan Robinson, chairman and president of Eurobell. "We are impressed by Ericsson's products and its total involvement in our project in Devon."

Jan Edhall, manager of the Cellular Systems and Special Networks Division at Ericsson Ltd. in England, says:

"The contract is the most important one Ericsson has received in the expanded cable-TV market. It consolidates our position as a supplier to new network operators."

One of the first

Eurobell is one of the first operators to combine cable-TV and telecommunications operations in the demonopolized British market. The company has already installed a system for multimedia transmissions in the area surrounding Gatwick Airport, south of London. It holds operating rights in southern Devon and the western part of Kent.

AXE contract from Kuwait

Ericsson has received orders valued at a total of SEK 140 m. from the Ministry of Communications in Kuwait. The contracts cover delivery of AXE exchanges and the upgrading of all AXE exchanges installed earlier in the country's public network.

With 80 percent of the country's subscribers linked to AXE exchanges, Ericsson is the principal supplier of public exchanges in Kuwait. The Company has also delivered a mobile telephone system based on the TACS standard.

Data cooperation in U.K. yielded major savings

Early in April 1993 LM Ericsson Data AB took over the greater part of the information systems and information technology operations at Ericsson Ltd., Ericsson's subsidiary in Great Britain. It is clear that the cooperation has turned out well; Ericsson Ltd. has reduced its overhead costs by between 10 and 15 percent during the past year.

"We have carefully reviewed the results and experience of the first year of cooperation and we are very pleased," says Anders Igel, Ericsson's new vice president in charge of corporate systems and technology, who up until last winter managed Ericsson's operations in Great Britain.

Ericsson Data is responsible for Ericsson Ltd.'s infrastructure, hardware and software, and financing. The contract calls for the installation of all data terminals needed (offering the capacity to communicate with Ericsson units throughout the world), telephone networks, exchanges and telephones, as well as for the



Anders Igel, formerly responsible for Ericsson in Great Britain.

maintenance and upgrading of systems. All products and services are provided at a fixed price per workstation and all deliveries must be made on tight schedules.

The new arrangement provides about 2,300 employees with completely new possibilities to obtain information and communicate.

Demanding market

There were simple reasons for the new approach. Ericsson Ltd. is operating successfully in one



Nils Grimsmo, President of Ericsson Ltd. in England.

of the world's most demanding telecommunications markets. It has to be competitive and upgrade performance continuously.

"The problem crept up on us," Anders Igel recalls. "We suddenly found that discussions and analyses related to our information system demanded too much time and kept employees from handling our core business."

Ericsson Ltd. called for bids from a number of domestic companies. Ericsson Data submitted its proposal three months later. Negotiations took another three

months before the contract was finally signed. Operations began three days later.

The project is a pioneering one in that Ericsson Data has assumed responsibility for a total operation at a fixed price, something it had never done before.

"There was an unquestionable requirement that the contractor had to assume complete responsibility for the Information System/Information Technology organization," Anders Igel notes.

"The ability to free up our personnel for other tasks was very important. At one stage of the negotiations when this requirement came up, we were even prepared to reject Ericsson Data's bid."

Much to be done

The successful cooperation will continue in the future, and much remains to be done.

"We must, for example, get help in utilizing UNIX more effectively and we also need better follow-up of usage per expenditure item," says Nils Grimsmo, president of Ericsson Ltd. and one of those most committed to the new arrangement.



Since assuming the post of Senior Vice President Corporate Technology at the beginning of the year, Anders Igel has devoted most of his time to outlining the function of Ericsson's technical organization. He is now ready to launch an entirely new organization for the Corporate function Technology. Photo: Peter Nordahl

Anders Igel strengthens grip on technology

Following months of intensive analyses of Ericsson's technology oriented activities, the new Senior Vice President Corporate Technology Anders Igel, is introducing an entirely new technical organization.

"My intention is for the Corporate Function Technology to be a small but effective team, which, acting jointly, will bring about necessary changes. This is the assignment we have received from Lars Ramqvist and C.W Roos," Anders states to Contact.

The team that Anders Igel is presently assembling will interact intensively with the business areas and the major local companies.

"The idea is for us to assist them in situations where an overriding advantage exists in working from an LM Ericsson perspective," Anders explains.

"We can gain respect for our team only if it consists of highly competent and experienced players who are well-versed in high-stakes undertakings. Accordingly, there will be significant changes in many areas while, at the same time, the new outlook will require a different type of leadership than previously.

"This has resulted not only in a new organization but also the introduction of new names and working methods at the highest level of technical management.

Coordination potential

In recent years, Ericsson has been characterized by a comprehensive focus on technical development. It is just such an emphasis which raised Ericsson to a position of global leadership in mobile telephony and enabled

AXE to defend its position as the world's largest digital telephone system. These successes have justified annual investments in the billions.

In retrospect, however, Corporate Management has become increasingly aware that numerous areas within technical operations require analysis and rationalization. Another reason is the present extremely rapid pace of market development.

"No company can afford to invest in all the services and products projected for the future, nor can it do everything itself. It's a matter of making the right things and then making them in the right way. It also requires maintaining a large, global technology network, and of accumulating and utilizing all the synergies that exist in a large company.

Patience is required

"We must also be constantly prepared for fluctuations in the pace with which changes occur in market conditions. In addition, we must be aware that it will take time before the new Corporate function organization has succeeded in accomplishing results

within Ericsson which are visible and enduring.

"We are entering upon a succession of extremely difficult issues which have not previously been confronted."

At the end of June, Anders Igel introduced the new Corporate function to his colleagues in the so-called EET group, some 30 of Ericsson's highest executives. On October 1, Ericsson's new Corporate function will be launched, complete with support units.

"But we have already made a head start," says Anders.

Broadened area

When Anders succeeded Bo Hedfors as Senior Vice President Corporate Technology, he simultaneously assumed responsibility for the functions governing product management and purchasing/production. This was a natural consequence of Corporate Management's striving to combine all technically related activities.

"Tying the various functions closer to each other enables us to more easily assemble a team that can interact in such matters," Anders Igel points out. As an example, he points to the strong inter-dependence between systems development and purchasing.

"Progress cannot be made in developing new products without a clear knowledge of the status of the components from which they will be assembled. Nor is it possible to sign long-term delivery agreements with suppliers whose products do not

fit into the systems and products which the technical staff is developing.

TQM exerts influence

Anders has also assumed Group-wide responsibility for TQM and the so-called K project, which has worked with Ericsson's new broadband system. He also took over certain of Jan Stenberg's Board assignments.

"Having TQM as part of the responsibility will have an excellent effect on the technical functions. Conversely, this provides TQM with increased exposure to technical reality.

Tidying up

In the future, the Corporate Technology function will have seven different functions. These are identified and explained in the article on the following page. "At the head of most functions is a Senior Vice President (a director in the parent company), which are occupied full-time with matters related to their respective units. These also serve as members of a secretariat in the Ericsson body in each respective area."

Although Anders Igel has striven to simplify and tidy up the proliferation of technical committees and other work groups, all major committees at Group level will remain – with the exception of the Ericsson Business Process Council.

"The time has also come to eliminate a number of committees and groups which had been established in connection with intro-

ducing our new broadband system. Instead, Ericsson's line organization will henceforth serve as the base for guiding the ongoing work, with Ellemtel as designated core unit for broadband development.

"We must also increase the pace of broadband development, with everyone providing all possible back-up to Ellemtel in its ongoing work," Anders admonishes.

Well on the way

Major changes are obviously taking place. Anders Igel hopes that the new Corporate Function Technology function will get off to a good start. He makes no secret of the fact it has been time-consuming and, at times, demanding to present a clear picture of the status of technical operations.

"For example, I have commissioned a detailed survey of R&D costs in order to determine their distribution among the various activities. This is work of considerable scope which can serve as the basis for discussions concerning future assignment of priorities. We have processed a considerable amount of material which had been accumulated during the spring. This was an exceedingly fine foundation on which to build.

"Now, the important thing is to start up the new organization so that the heads of functions within the Corporate Management function can take charge within their respective areas. There are exciting times ahead."

Text: Lars-Göran Hedin

New corporate function comprises seven functions

Corporate function Technology will now comprise seven functional areas, each responsible for its own key area. Common to all of them is the fact that they will work in close cooperation with Ericsson's business areas and major local companies. They will also obviously cooperate closely among themselves. Together with his new managers, Anders Igel aims to establish a strong leadership team for the Group's technical program. This is how the new organization looks:

■ Core Systems Management (CSM)

The task of this function is to ensure optimal development of Ericsson's system platforms. The work involves reaching agreement across business area boundaries regarding future-proof system architectures and reducing costs through such measures as minimizing the number of system components required.

Several different models for producing such a control system have been discussed. The solution adopted by Anders Igel is to build up a strong network of selected system experts, led by the function manager. The system experts will continue with their normal duties in the line, since this will best equip them to function in the network.

Ericsson Systems Council, the central technical body for system questions, will be retained. In due course, Ericsson System Software Initiative (ESSI), the major program for streamlining software development set up last year by Bo Hedfors, is also expected to become part of CSM. Bo Hedfors, currently head of Ericsson's U.S. operations, is remaining in charge of ESSI for the time being.

■ Research and Technology

The Research and Technology function has the task of ensuring that the widely scattered research organization works on those applications that are of long-term importance to Ericsson. A crucial task is to create a 'target picture' of the technology Ericsson needs to have at its disposal in the future. It is a question of establishing which areas of technology the Group should invest in, either independently or through cooperative ventures.

Ericsson Technology Council will be retained as the supervisory technical body for this area, but a number of subordinate groups will be phased out as their responsibilities are transferred to other units.

■ Information Technology Productivity

Ericsson has previously devoted much effort to producing universally applicable descriptions of the company's main processes, in order to establish general information systems for the various processes.

"I believe this to be an almost impossible task, given that there are such great differences between different operating environments and product areas within the Group," says Anders Igel. "So we plan to

discontinue the Ericsson Business Process Council and the four main Ericsson-wide processes.

"We sometimes have to take certain risks and start again from the beginning."

Igel now proposes that we should be more down-to-earth and governed by the real needs of the line organization.

"But let me underscore that process management is an excellent tool that we shall use in our upgrading work in the different operating environments. There are also good reasons for coordinating performance measurement and information systems in a number of cases, but let us do this based on the real needs of the users - needs that often come to light as a result of TQM work.

In Ander's view, when new information systems are to be made standard across large parts of the group, an appropriate Group leadership function should be responsible for drawing up the specifications.

"Otherwise it is best for the business areas or some other more 'local' level of authority to assume the responsibility. Once we have the specification, we usually go to EIT, Ericsson's core unit for information technology (IT) and ask for assistance with the technical implementation."

The most important aim is to be more progressive in our use of IT in our operations, and to bring the same talent to developing productive information systems as we have shown in applying IT to our telecommunications products. This will be the ITP function's special area of expertise.

■ Product Management Coordination

The business areas are responsible for their own product portfolios, but when there is a need for Groupwide coordination, the Product Management Coordination function comes into the picture. The PMC function is involved more rarely than other functions, however.

There are three cases in point that currently require coordination: multimedia communication, mobility - in a broad sense - and access products.

The PMC function will also be responsible for continuously monitoring Groupwide research and development costs. All costs will be referred to the business unit

that places the order. This will involve a closer scrutiny of technical development costs than has previously been the case.

One of the key roles exercised by the Group management function in this regard will be to help the business units evaluate the more future-oriented types of project, whose potential benefits are hard to gauge.

Ericsson Product Management Council will be retained as the central body for product management, but many of its subcommittees will be phased out as their responsibilities are transferred to the respective business units.

■ Manufacturing Strategic Coordination

The Manufacturing Strategic Coordination function will coordinate the Group's production operations, mainly by continuing work on the strategic plan - first drawn up under Johan Siberg's leadership - that defines the structure of Ericsson's production facilities in 1997, with the aim of reducing the number of production units.

Anders Igel underscores that the role of the MSC function is to focus on strategic production questions, working closely with the business areas. However, purely operational production questions are the responsibility of the business areas themselves. Ericsson Manufacturing Council, the central body for handling production matters, is to be retained.

■ Procurement, Microelectronics Coordination

The increasingly important procurement function is handled by the PMC function, which is also responsible for coordinating micro-electronics at Group level. There are strong links between micro-electronics and procurement; many strategic decisions in the micro-electronics area boil down to deciding which suppliers Ericsson should cooperate with and in what way. External sourcing and partnership agreements will assume increasing importance for Ericsson. This means that the procurement function will have great strategic importance.

"The function must be strengthened within the Group so that we fully exploit the negotiating position our size gives us.

We also need to ensure that the respective line functions are directly involved.

A Groupwide network of procurement experts is planned, and the central function will also become actively involved in procurement matters. In future, major purchases involving two or more business areas will be coordinated at Group level.

Another important task, which will now receive greater emphasis than before, will be to compare the efficiency of internal suppliers with that of external suppliers.

"Anything that can be done better outside Ericsson will not be done internally," explains Igel, emphasizing the importance to Ericsson of maintaining a degree of control and a high level of competence. The new "sub-my fabb" in Kista was an important milestone to pass. Ericsson Purchasing Council and Ericsson Microelectronics Council will be retained.

■ Total Quality Management

Ericsson's total quality program, TQM, is to become a separate function within Corporate function Technology. The focus on TQM initiated under the management of Jan Stenberg is to continue and be reinforced. The emphasis now is on increasing awareness of the improvements achieved throughout Ericsson with the aid of TQM, and incorporating TQM into normal work routines at all levels. Among the procedures to be incorporated in TQM are TRIM, capital rationalization, ESSI and management planning.

Anders Igel proposes to introduce a special organization to disseminate information about 'Best Practice' assessments, which involve selecting the best performance and the best solution in respect of a given task. The information to be distributed will be split into seven different 'tracks' (see figure), with a manager in charge of each track. The track manager, with the support of selected colleagues, will ensure that the information is in fact distributed, in part by conducting 'peer reviews' during visits to various units.

The TQM function will give guidance to the track managers, as well as ensuring that quality reporting becomes a part of the reports normally submitted by managers, and setting up a 'Best Practice' information database.

"Our efforts are essentially focused on winning some of the prestigious quality awards such as the European Quality Award or the Baldrige Prize awarded in the U.S.," explains Igel.

The Ericsson Quality Board, the central body, is to be retained. ■

"THE HARD TRACK"

- Business context and strategies
- Target setting and strategic planning
- Information and resource mgmt
- Business performance

"THE SOFT TRACK"

- Leadership
- Human Resource management
- Employee satisfaction
- Impact on society

"TIME TO MARKET"

- Total process for provisioning of NEW systems, products and services

MARKETING, CUSTOMER RELATION

- Mgmt of Customer relations
- Customer satisfaction

"TIME TO CUSTOMER"

- Total process of supply of EXISTING systems, products and services

GENERAL AND ADMINISTRATION

- Supporting processes
- Financial and productivity systems
- IS & IT

"THE FORMAL TRACK"

- Corporate policies and directives (EQM, "the blue book", etc)
- External requirements (Environmental and EU requirements, etc)

An important aspect of Ericsson's ongoing TQM program is to communicate improvements as they are implemented. The table above shows the seven 'tracks' into which responsibility for distributing 'Best Practice' information is subdivided.

The new technical managers:

- Core Systems Management: Jorma Mobern
- Research & Technology: Bernt Eriksson
- Information Technology, Productivity: Stellan Nennerfeldt (in parallel with his normal work at ERA).
- Product Management Coordination: Anders Igel (in parallel with his work as head of the Corporate function)
- Manufacturing Strategic Coordination: Recruitment in progress
- Procurement, Microelectronics Coordination: Jan Tufvesson
- TQM: Recruitment in progress



Is NAFTA good or bad for Mexico? Most observers concur that the free trade agreement with Canada and the U.S. creates new opportunities for the country. But for companies like Ericsson that are established in Mexico, the agreement will mean tougher competition.

Nafta – is it a threat or a promise?

NAFTA, the North American Free Trade Agreement, offers increased opportunities for companies that plan to establish operations in Mexico. By investing in the country they can now gain access to the entire vast North American market.

But for companies like Ericsson that are already in place, the free trade agreement means that competition will increase. As a result of the deregulation in the field of telecommunications, many companies are now focusing on penetrating the Mexican market.

The NAFTA agreement, which became effective January 1, has been signed by the United States, Canada and Mexico. It opens the door for free trade and investments among the three countries. It also facilitates investing by "third parties." But, unlike the European Union, it does not allow individuals or companies to reside or operate wherever they might wish to within the NAFTA region. The "tortilla curtain" between the U.S. and Mexico will still be there.

Is NAFTA a threat to Mexico or does it offer an opportunity? Most observers seem to agree that it is creating new opportunities, but that the initial period will be difficult since it will require major economic changes.

"Short-term, I think the U.S. is the winner," says Carl-Otto Rydner, manager of Sweden's Export Council office in Mexico. "I think that Mexico is being flooded with products from the U.S. and Canada right now. What has happened – and it has been a painful process – is that many Mexican companies have been forced to make major chan-

ges in order to cope with the competition. Personally, I believe strongly in Mexico as a market, not least because of the large investments in infrastructure that now have to be made."

If you ask Swedish businessmen whether NAFTA represents a threat or a promise, the answer is about as follows. "The free trade agreement is a good thing, but the principal reason why we are investing in Mexico is that the Mexican market itself is so large. With its approximately 80 million inhabitants, Mexico offers great potentials."

U.S. jobs threatened

Criticism of the free trade agreement has been strongest in the U.S., where political leaders and union representatives contended that jobs would be lost to Mexico if the agreement was signed. The sharpest critic was Ross Perot, the former presidential candidate, who asserted that Mexicans were a bunch of poor ragamuffins who couldn't afford to buy anything produced in the U.S. In Mexico, in contrast, most persons (both politicians and union

members) favored the agreement; it is clear to them that the country cannot be an isolated island.

The views expressed by Ross Perot and many member of the U.S. Congress reflect the traditional biased picture Americans have of Mexico. While it is true that Mexico's approximately 85 million inhabitants include many – too many – poor people, there is also a large, growing middle class that is calling for innovation.

Economic gaps

A person who moves around in the center of Mexico City, the nation's capital, perceives this. Futuristic skyscrapers strain skyward. People are in a hurry. Mobile telephones seem to be as common as in Stockholm.

But the rapid modernization cannot hide the fact that Mexico is still a country with great economic gaps. On the same day the free trade agreement went into effect a hitherto unknown guerilla army took over a number of cities in the impoverished State of Chiapas in southern Mexico.



Mexico is a country in transition. New skyscrapers shoot up in the centers of cities and mobile telephones are an increasingly common sight, but Mexico is still a country with major economic gaps.



"I believe strongly in Mexico as a market," says Carl-Otto Rydner, manager of the Swedish Export Council Office in Mexico.

The revolt in Chiapas came as a shock to many. But the Mexican Government showed great maturity when it began talks with the Zapatists, as the guerilla movement is known.

The guerillas have strong support from the Indian population, and it is among the Indians and their organizations that opposition to the NAFTA agreement is greatest in Mexico.

"How can we compete with the U.S.? What will we compete with? We Indians don't even own land on which to produce," says Juan Hernandez Mexa, leader of the Colpolmali Indian organization in the State of Chiapas.

A nudge forward

Discussion surrounding the free trade agreement reminds one, to

a degree, of the debate in Europe prior to the entry of Spain and Portugal into the then European Community – when many feared that industry would flee to countries where wages and salaries were lower.

This did not happen. Instead, wages and salaries in southern Europe rose and economic growth in the region got a real nudge forward. The leaders of CTM, the central union organization, think this will also happen in Mexico. Accordingly, they are supporting the free trade agreement despite the fact that their AFL-CIO colleagues in the U.S. did everything possible to persuade them not to.

"In its campaign, the AFL-CIO tried to make it appear as if the Mexican labor movement could not protect the interests of Mexican workers," CTM's Pedro Alberto Salazar says. "At the same time, they wanted us to oppose the agreement."

Salazar and others in the CTM feel that the attitude of the AFL-CIO was overbearing and supercilious; the American union bosses more or less demanded that the Mexicans follow their dictates.

"The problem is," Pedro Alberto Salazar notes laconically, "people in the U.S. know so little about what's really happening outside their country."

In Mexico, he adds: "The percentage of workers in unions is much higher than in the U.S. Our negotiating capacity is also much greater than theirs. So the question is: Which one is really a developing country in that respect?"

Miracle cure

The free trade agreement could hardly have come to pass if the Mexican economy had not undergone substantial changes in recent years. The fact is that Mexico during a little more than the past decade has experienced something of a miracle cure. In 1982 the country was on the brink of ruin. Despite large oil revenues, Mexico had to suspend payments on its huge foreign debt.

Today the economy is in balance and inflation is down to an



NAFTA has three members: U.S., Canada and Mexico.

acceptable level. The free trade agreement has also accelerated the ongoing liberalization of Mexico's economy. Complicated regulations have been eliminated and many Government-owned companies have been sold to private interests or closed down. The bureaucracy is shrinking; its corruption has been weeded out. But there are still a number of restrictions on foreign investments in the country, in-

cluding rules dealing with what may be imported.

What makes NAFTA unusually attractive is that it can be the first step toward an "All American" free trade area extending from Tierra del Fuego in the south to Alaska in the north. A number of other countries in Latin America, Chile in particular, already now hope to be allowed to join NAFTA. But this will not happen automatically. On the other hand, a number of countries have concluded their own free trade agreements with Mexico that – to a degree, at least – gives them back-door access to the big free trade area.

Advantages discovered

Several "new" Swedish companies have also discovered the advantages offered by Mexico. The first large company to act was Scania, which is opening a truck assembly plant in San Luis de Potosi in December. Scania hopes to capture ten percent of the market in a few years.

Other companies are electing to concentrate their production in the U.S. or Mexico.

New president

A new president, Ernesto Zedillo, was elected in Mexico on August 21. He was the candidate of the PRI, the institutional revolutionary party, that has governed Mexico since the 1930s despite widespread reports of election irregularities over the years.

The election, which was regarded by many as a referendum on NAFTA, was monitored by international observers. No major irregularities had been reported by these observers at the time this report was written.

Zedillo, the incoming president, has declared his support for this policy. One of the first challenges he faces is the social situation in Chiapas.

Meanwhile, Carl-Otto Rydner at the Export Council in Mexico expresses the views of many fellow Swedes: "Mexico will continue to be a good country for Swedish companies!"

Report and photos: David Isaksson

Facts about NAFTA

The agreement removes all customs barriers among U.S., Mexico and Canada. No expansion of NAFTA is being discussed at the present time.

Main points

- **Access to the market.** Customs barriers are removed. But each country retains the right to protective tariffs against third parties.

- **Deregulation of barriers** to free establishment of operations. Former restrictive rules in transport sector, for example, disappear. Anti-dumping laws being introduced.

- **Foreign investment.** NAFTA will facilitate foreign investments (by third parties) in the countries. Mexico still has a number of restrictions (covering what must be produced in-country, for example) but these will in time be lifted.

- **Copyright protection.** Mexico agrees to enforce protection of patents, copyrights and trademarks.

- **Environment.** Special fund being formed to improve the environment in the severely polluted border region. Objective: identical requirements in U.S. and Mexico. Critics object that the agreement should have placed more emphasis on environment.



Nina Nikolaevna is the president of KATEL. To her left is Bakasov Kurmanbek and to the right, Ross Jacobi, chairman of the board.



The Irish crew (standing from left): Des Molloy, Patrick Moore, Terry Cusack, Jonny Merwayh, Flintan Brady, John Twoney, Jim Kehoe and (kneeling from left) Vincent Brady and Sean Stanley.



More than 60 percent of Kirghizia's population of 4.6 million live in rural areas. Farming is one of the country's most important sources of income. The climate is continental with hot summers and cold winters. Photos: Gunilla Tamm

Mobile phones put Kirghizia in touch with the world

The Minister, the Vice Minister and the former Minister of Communications were all on hand when the new mobile telephone system in Kirghizia was inaugurated in mid-July. The new mobile telephone network is important for developing the country's infrastructure and via a satellite link provides better access to international telephone lines.

Earlier this spring, operator KATEL signed the contract with Ericsson Radio Systems calling for a mobile telephone system based on the AMPS standard. In the first phase, the network will cover the capital city Bishkek, the Chu region and the cities Osh, Jalai-Abad, Karakul and Cholpin-Ata.

"There is a great need for telecommunications in Kirghizia, and with this mobile telephone system, we can quickly meet this demand," says Ross Jacobi, who is chairman of the board of KATEL, which is a business alliance between the Kirghizian Ministry of Communications and the American company TK Tel Ltd.

Ross Jacobi also adds that expansion of the network is planned so that coverage will be extended to the entire country. There is also a roaming agreement in place with Kazakhstan, the neighboring republic to the north.

In addition to public switches, the mobile telephone system in Kirghizia makes use of satellite communications. Intelsat provides good international connections, which are greatly needed to develop industry in the country.

A sound choice

Nina Nikolaevna Nashnitsina, president of KATEL, relates that, in addition to Ericsson, the company requested bids from Motorola and NEC for the mobile telephone system.

"We made a sound choice in selecting Ericsson as the supplier, because it is one of the foremost companies in the world in mobile telephony," she says.

Before the contract was signed, Nina Nikolaevna visited Ericsson Radio's plant in Gävle, Sweden, which is the master plant with the overall responsibility for the manufacture of base stations for Ericsson's mobile telephone systems. She was impressed by what she saw.

Interest for acquiring mobile phones is great in Kirghizia.

Government officials and businessmen are among the first subscribers. At the inauguration ceremonies, the U.S. Ambassador to Kirghizia was one of the first to place a call.

Skilled crew

Installation and commissioning of the mobile telephone system was accomplished in short time. Technicians from L M Ericsson Ltd. of Ireland completed the job in just six weeks.

"I'm really impressed by these skilled technicians and how well they work together," says John Gioya, who is the project manager at KATEL.

"For me, this was the first assignment outside the U.S., and it was also in a country where I do not speak the language. So it was reassuring to work with experienced professionals, with whom I could also have fun and go out and have a beer," says John with a laugh.

Patrick Moore, who has worked 22 years with Ericsson in Ireland, was responsible for the installation and commissioning. Before coming to Bishkek, he had completed a similar assignment in Nigeria.

Twelve Irish technicians

Twelve Irish technicians worked several months in Kirghizia.



The Republic of Kirghizia has a land area of about 198,000 square kilometers and is situated near the Tien Shan mountains. More than 90 percent of the country has an elevation of more than 1,500 m above sea level, and the highest mountains are more than 7,400 m.

The country declared independence in December 1991. The capital Bishkek, which was formerly called Frunze, was established in 1878 and now has some 600,000 residents. Kirghizia has a population of 4.6 million, of which slightly more than half are Kirghizians. Other major ethnic groups are Russians, Uzbeks, Ukrainians, Tartars and Germans. As of 1991, the official language was changed from Russian to Kirghizian.

Kirghizia has natural resources in the form of coal, gold, silver and other minerals. Agriculture is important, and crops include corn, tobacco and cotton.

Some of them came directly from an installation in South Africa, where they also worked with mobile telephone systems.

"We have been working at a fast pace, which means that Saturdays and Sundays have been work days, too," says Patrick. It is a demanding job, but he likes his work at Ericsson and regards the company as a good employer.

"I brought a lot of things with to Bishkek, but most of them were unnecessary. I found everything I needed here," says Patrick. "Not speaking the language is a handicap, but we manage, and we often have an interpreter to help us. Yesterday, though, I ma-

naged to get a haircut without needing an interpreter," he notes with some pride.

Some misgivings

Before accepting the assignment, Vincent had some misgivings. His concern was whether or not there would be cable TV at the hotel so that he could watch the soccer World Championship.

The hotel had cable TV, and when Ireland's match was shown, the whole crew was seated in front of the TV, dressed in the Irish colors. Soccer is important for the Irish, so no matter where they may be, they will always want to watch the match.

Text: Gunilla Tamm

The future lies in telecommunication

Australia aims to be the leader in the Pacific Rim

Australia is investing heavily in telecommunications. The market is now thoroughly deregulated. In addition to Telecom Australia, there are several operators that are rapidly gaining ground. Open competition prevails in the mobile segment and for service in the wired tele network.

There is one point on which the entire Australian tele industry agrees: Advanced telecommunications offers the country its best chance to play a significant role in the expansive Southeast Asia region.

ATUG, Australian Telecommunications User Group, is an annual conference at which delegates from the Australian tele industry meet representatives of the largest telecommunications user groups in the country. Seminars are held at ATUG on current topics and lively discussion ensure about which course Australia should follow in telecommunications. Usually held each year in May, the conference venue shifts between Melbourne and Sydney.

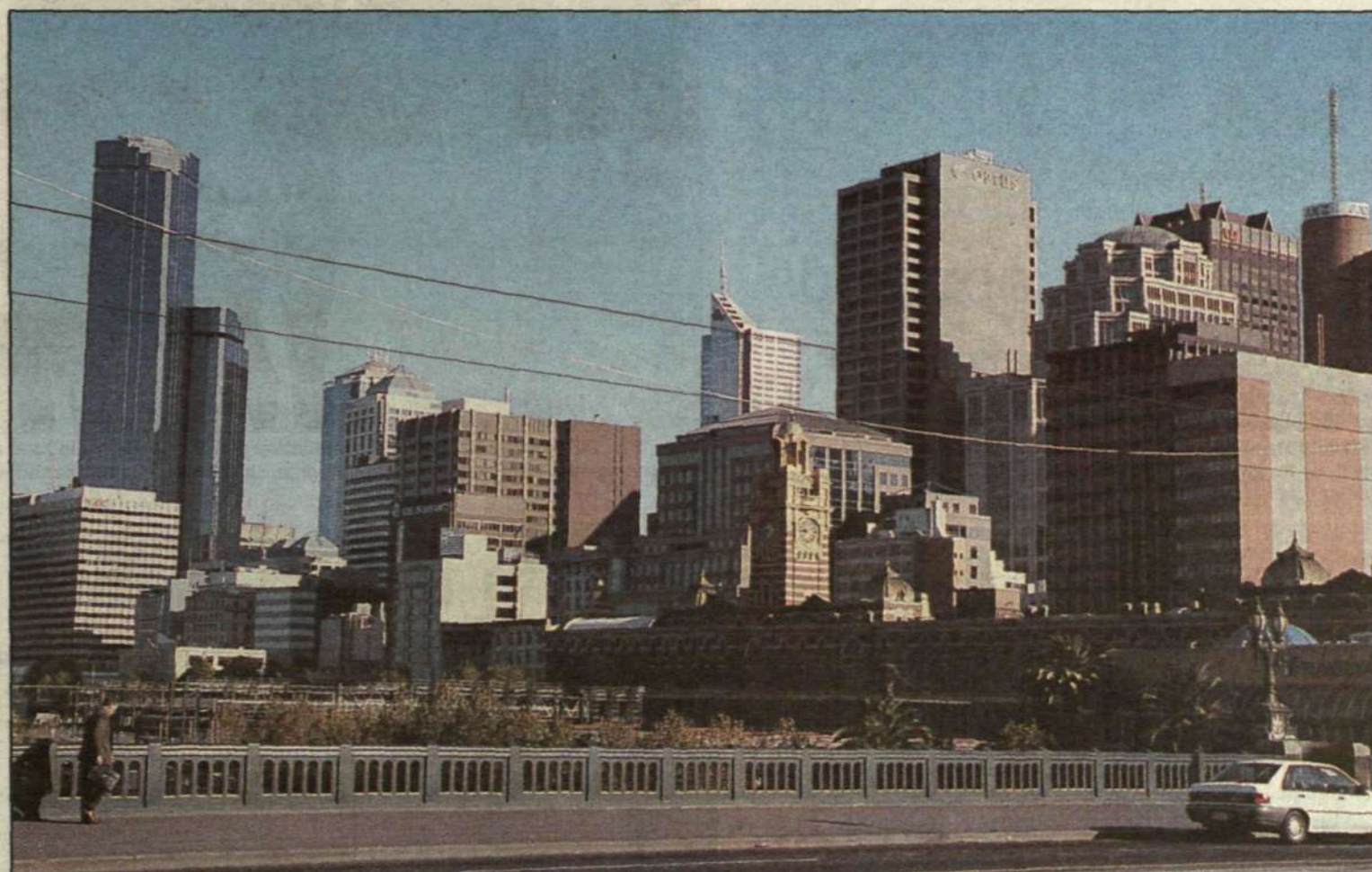
This year Melbourne hosted the gathering. Continuing deregulation and the consequence for Australia of the increased competition was the central topic of discussions. The rapid development toward the convergence of telecommunications and other elements of the information society, such as entertainment, cable-TV and multimedia was another.

The third change

Steve Burdon, then one of the senior executives in Telecom Australia, referred to the current telecom revolution as the third major change for mankind.

"First, we created an agricultural society. Then came the industrialism of the 17th and 18th Centuries. And now, with the tele and information era, mankind is experiencing the third major change in life style. Our task as tele operators is to participate in the process of creating, storing and transmitting information.

"The core business of Telecom Australia is to operate the telenet. We shall offer all service providers access to our entire network. And we are now investing a total of 40 billion dollars over five years in a technical upgrade of



Australia invests heavily in telecommunications. The next five years Telecom Australia will invest 40 billion dollars in upgrading of the network, its products and services.

our network, our products and services, here in Australia and where we are active abroad."

Australia's chance

"We want Australia to be a world leader in telecommunications technology," continues Steve Burdon, who views this as the country's major chance in the future. He provides an illustrative example:

"The Cathay Pacific airline and the Data General computer company are large multinational enterprises who relocated their regional headquarters to Australia for the specific reason that the country offers access to advanced tele services.

"Our country lies in a region with enormous growth. This is a fantastic challenge and opportunity for Australia to be part of the Asian expansion."

Must ask the customer

Optus Communications is one of the private operators, with wired and mobile networks. The company plans to build a very advanced telenet to become less dependent on Telecom Australia in the future. The main focus is on the corporate market.

"We are investing in a telenet at a time when the telecommunications industry is changing and everyone is talking about new te-

le services. No one today knows what the industry will look like in the future," contends Bob Mansfield, president of Opus.

"Our biggest challenge is to understand what services the customer will want in the future and to be able to supply them as cost effectively as possible."

With 900 million dollars in sales, it appears that Opus is off to a strong start.

Belief in GSM

Another company off to a good start in Australia is Vodafone. The company's GSM network is being expanded, mainly with Ericsson equipment, at a rapid pace. Since the start in December 1992, Vodafone's network in Australia is being expanded to cover all large cities.

"In 1995, our network shall be accessible to 85 percent of Australia's population," according to John Rohan, Managing Director.

"We are now expanding at a rate of one base station per day. When the phase-out of the analog frequencies begins in Australia in 1995, we will be on the spot with our GSM network"

Rohan is convinced that GSM is the standard which offers the best possibilities to cope with the integration of tele and information technology on the electronic super highways of the future.



At the annual conference ATUG, Australian Telecommunications User Group, representatives from the Australian tele industry and the large users meet. Naturally, Ericsson was present.

"We will see many new services - data transmission, telefax via mobile telephone, E-mail, personal paging and others. It won't be long before a telephone and a single number will be sufficient for all our info needs in all situations."

Triumph over demand

Burdon, Mansfield and Rohan are three visionaries and excellent representatives of the Australian tele industry. The ATUG seminars provided a clear signal that the great country "down under" is strongly determined and fully prepared to win

a pole position in the telecommunications race. However, all that was said at ATUG was not unqualified praise of technological progress.

Referring to the discussions about broadband, Ossie Brown, representative for AAP Telecommunications, the third operator in the wired telenet, had some reservations.

"Broadband is a triumph over demand. The visionaries have gone too far. There is very little proof that broadband is cost-efficient!," he contended.

Text and photo:
Lars-Göran Hedin

We shall be the best in the world

Ericsson Australia has survived deregulation of the telecommunications market admirably. A new corporate culture has been created which provided the platform for continued success in one of Ericsson's most important markets.

"We have strengthened our relations with the customers by showing increasingly greater interest," President Kjell Sörme relates. "As a strategic partner to Telecom, Ericsson is intent upon creating 'World best practice' in telecommunication business."

Naturally, deregulation of the Australian telecommunications market also involved dramatic changes for Ericsson Australia (EPA). The many years in a monopoly environment left its mark on the corporate culture.

"EPA was an engineering-oriented company whose operations were firmly based on a stable relationship with its largest customer," relates Kjell Sörme, president of Ericsson Australia. "At that time, quality, customer satisfaction and respect for meeting promised delivery times were factors which were not of highest priority," he admits.

But deregulation forced Ericsson to quickly change its ways. The successes achieved in recent years are proof that they changed course admirably. When Kjell Sörme took over management of EPA in 1991, he initiated a flurry of activities to adapt the company to the new market situation. A comprehensive reorganization was the first measure.

"Focusing on the customer is a prerequisite for success in an open market," Kjell contends. Accordingly, the company is now organized in British fashion with customer-oriented divisions. Each division has total responsibility for its customers, across the breadth of Ericsson range of products and services.

Sought partnership

Kjell Sörme emphasized the need for an in-depth cooperation with the customers. EPA's expression of this concept was to approach Telecom Australia on several fronts. The quickest results were achieved in the mobile segment. It was here that early discussions regarding a joint Total Quality Management (TQM) project were held, talks which also resulted in specific cooperation projects.

"It's a great feeling when you discover such openings in relations with customers. Today, we promote customer contacts in all forms and are constantly trying to get our employees to think about what he or she creates of value for the customer."

Continous improvement

Customer orientation is also underscored by EPA's strong focus on TQM. Kjell Sörme is one of the company managers in Ericsson who has personally become heavily involved.

Kjell Sörme applauds change

"I have attempted to awaken the entire company's awareness of the fact that changes are a necessity and it is wrong to believe that you have completed the changing process at anytime. TQM must always be part of our corporate culture and it is something that we must learn to like - because it pays back so much in return."

Intensive efforts are now under way to change EPA's leadership culture. All managers at all levels are participating this year in a course entitled "Leading Change."

"We succeeded relatively quickly with gaining acceptance for TQM among the senior executives, but discovered just a little more than a year ago that there were apparent shortcomings among middle management. Accordingly, our training activities are now concentrated largely on these personnel. They lacked prior experience about how to manage change, so we are now teaching them how."

The importance of gaining acceptance from managers for TQM cannot be underestimated. Kjell Sörme believes strongly in the importance of delegating assignments. He is also clear about his own role in this context. "My most important task is to foster the organization so that it can operate and improve operations on its own."

Yields results

Intensified cooperation with Telecom Australia and the focus on improvements has also clearly had favorable effects on EPA's financial statements. Sales of mobile systems have risen sharply and the company has continually gained ground in relation to Alcatel, which is Telecom's other supplier.

"The work with the customers paid off when we were named as a strategic partner by Telecom," Kjell contends.

"Ericsson had demonstrated that it was possible to signifi-



Kjell Sörme ser det som en av sina främsta uppgifter att uppfostra Ericssons organisation i Australien till att själv driva förbättringar.



I Broadmeadows utanför Melbourne har Ericsson sitt Australiska centrum. Här jobbar merparten av bolagets 2.100 anställda.

cantly improve quality in the network. AXE In Service Performance has among other gains improved 4-5 times compared with a couple of years ago.

"Telecom has also understood that Ericsson is undergoing change toward becoming a company that attaches increasing importance to customer benefit. Consequently, Telecom is convinced that we really can be the partner they need in order to retain their position as the leader in the deregulated market."

Prepared to invest

As a strategic partner to Telecom Australia, Ericsson is now prepared to participate in the major effort being made in telecommunications. This includes Telecom's operations outside Australia, where Ericsson is already a key partner.

"The government wants to build Australia into a significant industrial nation, while at the sa-

is under way. Strong relations are being established with countries in our corner of the world, while the European-British influence is being toned down. This process opens attractive opportunities for Ericsson," according to Kjell.

"We are part of an interesting part of the world. If we can only compete with other companies in Ericsson, there is substantial export potential to such countries as China, Vietnam, Sri Lanka and New Zealand.

Provide proof of value

As a result of the successes in recent years, Ericsson Australia's order books are currently strong. But you cannot rest on these laurels.

"Now that we have landed so many large deals, we must be careful. Most importantly, we must prove to customers that they have made the right choice and that we are valuable to them. Therefore, we are continuing to engage in joint projects and to intensify our relations with the customer.

"An excellent example is the joint marketing of new tele services which we are now carrying out with Telecom. This includes producing user manuals, arranging training for Telecom's sales team to support sales and use of the new services. This provides us with masses of valuable knowledge about how the end-user views the services which we have been involved in developing, while at the same time Ericsson shares in the revenues generated for Telecom by the new services."

Kjell Sörme is convinced that this method of working will increase in scope in the future.

"It increases our know-how and provides new sources of revenue. The know-how helps us to achieve EPA's top objective just now: Together with Telecom, becoming "a world Best Practice telephone operator and a dominant carrier in South East Asia."

me time a substantial strengthening of Australia's Asian profile

Ericsson holds a strong position in Australia

Australia is a market in which Ericsson has always held a strong position. Since the first telephones from Ericsson were imported in 1890, Ericsson has held a firm grip on the Australian market.

Ericsson Australia is one of Ericsson's Major Local Companies. With 2,100 employees and sales of SEK 2.8 billion, it is one of the two largest telecommunications companies in the country. Ericsson has been a leading supplier to Telecom Australia since the turn of the century.

For many years AXE was the only digital switching system in the country, although some units were manufactured by Alcatel under license. When Telecom decided a couple of years ago not to be wholly dependent upon one supplier, it chose Alcatel's own system.

Strategic partner

In November 1993, Telecom Australia announced the largest investment in telecommunications in the country's history. A total of SEK 18.5 billion is to be invested through 1999 in the continuing modernization of the telenet. Four suppliers - or strategic partners as Telecom expresses it - were selected. Alca-

tel and Ericsson for public switches, Nortel for business exchanges and Siemens for transmission equipment. The contract doubles the number of AXE lines supplied by Ericsson, from an installed base of 4.3 million AXE lines in the country.

This spring Ericsson Hewlett-Packard Telecommunications received a contract to assist Telecom Australia in the development of the future operating system for the telenet.

Mobile dominance

In the mobile telephony segment, Ericsson is dominant. Australia's first mobile system, an AMPS system from Ericsson, was placed in operations in 1987.

It has expanded greatly during the years and is currently one of the largest analog systems in the world.

There are 1.3 million subscribers in the network, which is expanding at an annual rate of 65 percent.

When GSM was chosen as the digital technology by Telecom Australia, Ericsson had to split the delivery with Alcatel. Alcatel initially received 60 percent and Ericsson 40 percent, but after one year Ericsson share had increased to 80 percent.

Another two operators have been granted GSM licenses - Optus and Vodafone. Vodafone, which is a cooperation partner with Ericsson elsewhere in the

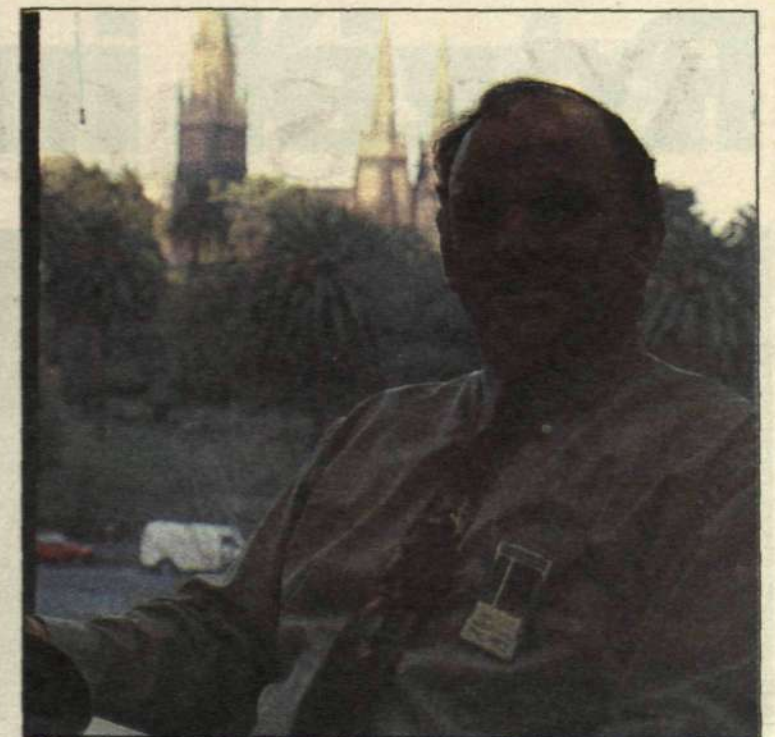
world, is purchasing 100 percent of its equipment from Ericsson. On the other hand, Optus elected to acquire its equipment from Nortel and Nokia.

Business com and radar

Ericsson's business exchanges are sold in Australia through private retailers and through a network of companies in which Ericsson Australia holds an interest.

They have a relatively strong position in the market, which has many other suppliers.

In the defense systems sector, Ericsson has also been successful in Australia, including the delivery of Giraffe radar to the Australian navy.



- Marknaden väntar sig att tillväxten i GSM-systemen ska sätta rejäl fart nästa år, säger Collin O'Reilly, ansvarig för Ericssons verksamhet inom mobiltelefon i Australien.

Rapid expansion of GSM-network

With more than seven mobile telephones per 100 inhabitants, Australia ranks as one of the highest density mobile telephone countries in the world. The analog network is still predominant, but it will begin to be phased out in 1996. Consequently, the focus on GSM is strong just now. Three operators has been selected and Ericsson is a supplier to two of them.

The distance between Bundaberg and Adelaide in Australia is 4,500 kilometers (2,700 miles). Anyone who is willing to make the drive, can travel the entire distance and talk on a mobile telephone the whole way. This could be the longest coverage of a single mobile network, anywhere in the world.

Since most of the Australian population lives along the southern and eastern coasts, it has been possible to build a mobile network that covers more than 85 percent of the population - though only 5 percent of the land mass is covered.

Telecom Australia, which operates the analog APMS network, is continuing to expand, but, it has clearly stated that GSM is the technology on which future investments will be based. And Ericsson is also the main supplier in this segment.

Three operators

The telecommunications market in Australia is one of the most deregulated in the world. Consequently, there are currently four mobile telephone networks in the country. The three most recent are digital GSM networks, operated by Telecom Australia, Optus Communications and Vodafone. All three are investing heavily in expanding their

networks, despite the fact that the flow of subscribers has not yet gained pace, but since the analog network is to be phased out in the future, all operators consider that expansion of GSM is an urgent priority.

"In an environment of competition, the market has wrown dramatically," relates Colin O'Reilly, manager of the Radio business area at EPA.

Important for Ericsson

Production of transceivers was started in Australia as early as 1985. Today, this production employs 100 persons and deliveries are increasing all the time. Currently, mobile telephone systems account for the largest percentage of Ericsson's business in the country - and profitability is very satisfactory.

"We are now attempting to become established as the technical support center in Southeast Asia, for mobile systems", Colin relates. In the future he would also be glad to see EPA become the production center for GSM in this very expansive part of the world.

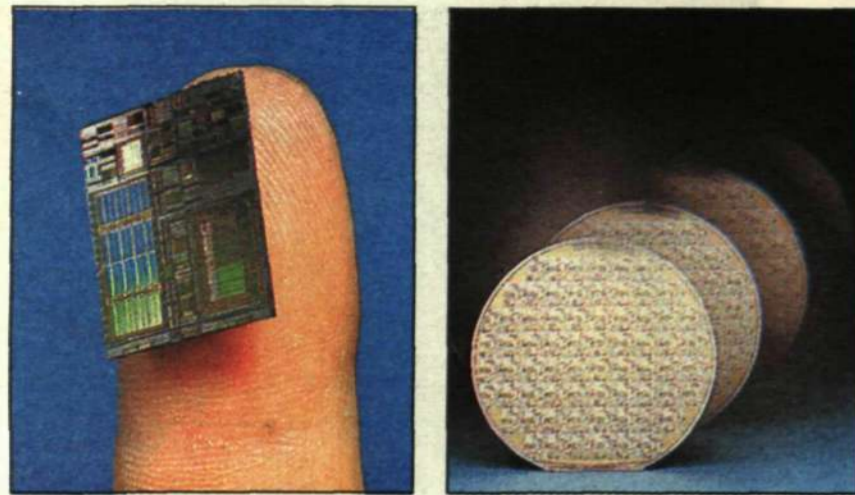
Mobile systems are not only sold in Australia, but to other countries in the region as well. Currently, EPA is focusing attention on Vietnam, Sri Lanka and India.

Terminal success

The mobile telephone situation in Australia is reminiscent of the trend in the rest of the world. Ericsson holds a weak position in the analog segment - 2.5 percent market share - but has succeeded very well with digital telephones. EPA has captured 30 percent of total digital sales. The total growth in the mobile network is about 3,000 subscribers daily. In pace with the digital systems gaining the upper hand, this indicates that there is a huge business potential for Ericsson.

Australian report:
Lars-Göran Hedin

Royal inauguration of new plant in Kista



The information carriers of the future: a silicon wafer and a silicon chip. A chip is built up on a wafer. It takes two months to transform an empty wafer into an active, chip-filled one. A chip is made up of tens of layers of different conductive or insulating materials.

There was a glow over Ericsson's new microelectronics plant in Kista, outside Stockholm, on August 18 as H.M. Carl XVI Gustaf of Sweden presided over ceremonies inaugurating the new facilities.

"The new plant for the development of Very Large Scale Integrated (VLSI) Circuits of the future marks a new era in the development of high technology, the transition from an industrial to an information society," Kurt-Ingvar Engde, the project leader at Ericsson Components, says.

The key products in the information society are silicon chips and software. One cannot exist without the other. The silicon chip is the carrier of information; software provides the instructions that control the electronics on a chip.

Ericsson's new submicron plant, a world-class facility, is of great strategic importance. It can produce circuits one half of a thousandth of a millimeter (0.5 um) in width and is also dimensioned for 0.35 um. It can supply the next generation of microchips for Ericsson products.

Exceptional knowledge is required to match chip and software to form a working unit. This knowledge has now been brought together in a fully equipped "expertise center" for microelectronics in Kista.

"All disciplines - optotechnology, radio technology, silicon technology, design technology and production and research laboratories - in combination with the new plant, have now assembled in an enormous matrix of expertise," Bert Jeppson, president of Ericsson Components and chairman of the board of the Electrum Foundation, declared.

"Participation in the National Microelectronics Program in 1984 was of great importance in coordinating the development of our expertise. Our participation was focused on development of a CMOS process that is now being used in our production."

The next milestone was reached in 1987, when the strategic cooperation agreement with Texas Instruments covering the exchange of expertise was signed. It was not until after this agreement was concluded that it became realistic strategically to include the plant in Ericsson's business development planning.

First blast

Discussions pertaining to a prototype plant began in 1990 and the first negotiations with TI were begun in 1991. Meissner & Wurst, the German build-

ing consultants for TI's integrated circuit plants throughout the world, were already involved in project planning during this period. Ericsson approved the budget in November 1992 and the concept for the new plant was finalized in January 1993.

The first blasting at the site took place on March 15 and the Rosenberg architectural firm was selected at about the same time, as well as Skanska as the prime contractor and AB Rör-system as the supplier of piping systems. No fewer than about 240 Swedish companies were employed in construction of the building, while the process equipment was purchased in the United States and Japan.

After less than a year and a half, a new, advanced microelectronics plant has now been completed.

"The most important date in the project was April 1, 1993," Mr. Schwarzkopf notes. "The entire building had to be ready by that time to accommodate the large amount of process equipment that began to be delivered on that date. The first wafer started its journey through the various processes on July 1, and the first working chip was completed on December 20.

The project will continue up until July 1995, when it is to be certified.

Shorter time to market

"We will focus on a number of important circuits for Ericsson, which is dealing with time-to-market and time-to-customer requirements," Bert Jeppson says.

"We will get into the market quickly with new products, and with our cooperation agreement with Texas Instruments we will also be able to handle rapid increases in volume while maintaining quality and low costs.

"There are now opportunities to work effectively with universities and colleges to further develop our total expertise. I am convinced that our efforts to keep up with advanced technology is of positive value to Sweden."
Inger Björklind Bengtsson



Integrated circuit technology makes everyone a king. Kurt-Ingvar Engde is explaining process technology to H.M. Carl XVI Gustaf. But who is who?



On 120 pillars bolted fast in the rock foundation, Ericsson's new microtechnology plant rises toward the sky. The firm footing makes the building vibration-free.



Bert Jeppson, president of Ericsson Components and board chairman of the Electrum Foundation, welcomes guests to the new VLSI circuit plant.

Facts about the plant

The production process requires many different chemicals to clean and purify silicon wafers. Toxic and explosive gases are stored in a special gas chamber outside the production building. Large amounts of clean air - 1.3 cubic meters per hour - circulate in the ventilating system, changing the air 400 times an hour. After being filtered, air in the clean room contains less than one particle per cubic foot, compared with one million particles in a normal office environment. Ten percent of the air volume is exhausted via the smokestack and 10 percent of

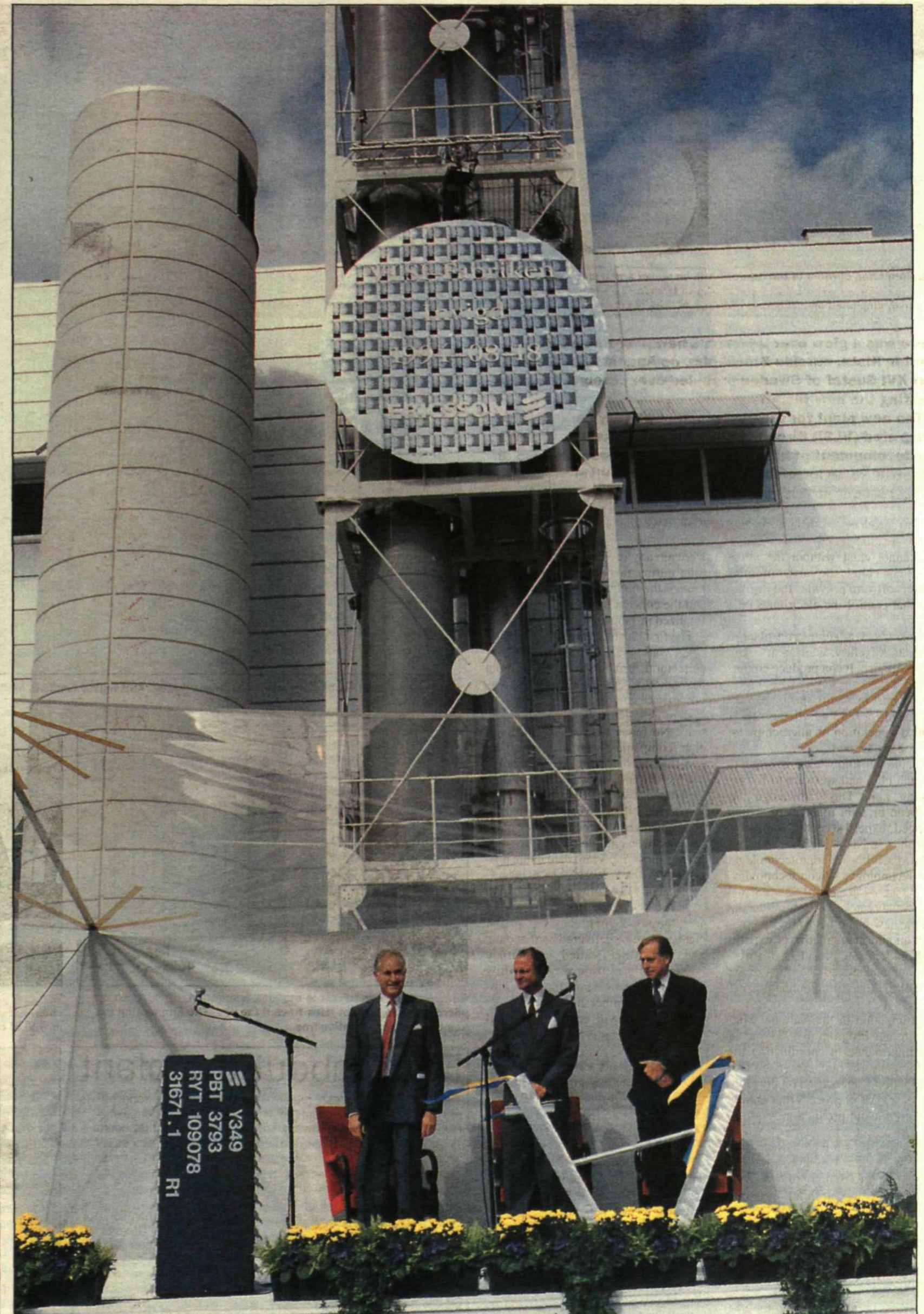
the fresh air is introduced via six air intakes in the Galleria.

All exhaust air that contains acids or toxic substances is cleaned by a shower in a scrubber before being released into the atmosphere.

The "attic" floor acts as a gigantic pressure chamber, forcing air through the filters to the process floor. Fifteen 5-meter high, 36-meter-long specially designed trusses ensure that vibrations in the filter system are smaller than 3 mm. After filtration, air in the clean room contains less than one particle per cubic foot.



"The biggest thing that has happened in the microelectronics field in Sweden," says Kurt-Ingvar Engde, here with Britt Reigo, personnel manager, and her husband, Jack.



"Ericsson's venture will serve as a source of inspiration and faith in the future for many, including students and researchers in universities and colleges," H.M. King Carl XVI Gustaf said at ceremonies inaugurating the new micro-electronics plant. Ericsson's president, Lars Ramqvist and Björn Svedberg, board chairman, shared the platform with the King.
Photos: Anders Anjou

Massive investment in future technology

Ericsson is investing billions in Kista for a facility that will considerably strengthen its position in advanced microelectronics and optic technology. Research and development in these fields is now managed by a core unit for Microelectronic Systems Technology. This unit, which organizationally is part of Ericsson Components, serves all Ericsson companies.

The market for telecommunications has changed radically in recent years. Development is now led by demands from the telecom operators' customers. These demands have long been decisive for Ericsson's wide-ranging investments in new technology.

The market is accelerating the pace of development, and continued development in micro- and optoelectronics will further enhance the quality and performance of telecommunications systems. Advanced micro- and optoelectronics are also a prerequisite for the ATM/broadband concept.

In order to meet these demands, Ericsson has established a core unit specializing in microelectronics and optic technology. The unit, which is named Corporate Core Unit Microelectronic Systems Technology, will ensure that Ericsson further strengthens its advanced position in the important fields of microelectronics and optic technology.

Why was this unit formed? What does it have to offer the telecom market? How is it organized? These are some of the questions that will be answered in this article.

Key role

"Microelectronics and optic technology have a key role today in improving performance and reducing the size and weight of the components used in Ericsson's telecommunications systems. Thus this unit is of strategic importance," says Christer Jungsand, in explaining the establishment of the Corporate Core Unit Microelectronic Systems Technology, which he heads.

"By the year 2000, Ericsson will be spending between three and five times more on microelectronic components than we do today. That's why it is so important that we have our own expertise and development capacity. We need to be able to identify new opportunities for optimizing system performance and building the world's best products and systems," says Christer.

Based in Kista

From his office in Kista some 10 km north of Stockholm, Christer heads a staff of about 200 persons. Most are experts in a particular area of technology, with a focus either on research and de-

The key to tomorrow's successes lies in microelectronics

velopment or on application of the technology. Staff members come from many different parts of Ericsson.

The core unit's organization is efficient and flexible. It is a core organization with Ericsson companies as customers, and it should not be regarded as a central research unit.

All experts working in this unit have a common goal: to strengthen Ericsson's position in advanced microelectronics by developing competence that leads to the development of new products and systems. How is this accomplished?

Expertise

What Microsystems has to offer can be summarized in the words expertise and technical development. Not only in the area of microelectronics, but also in optic technology, a field of increasing importance.

Expertise and technical development are activities that thrive upon each other.

The emphasis of the unit's work is on the development of techniques and methods that can be used in Ericsson products over the next five to ten years.

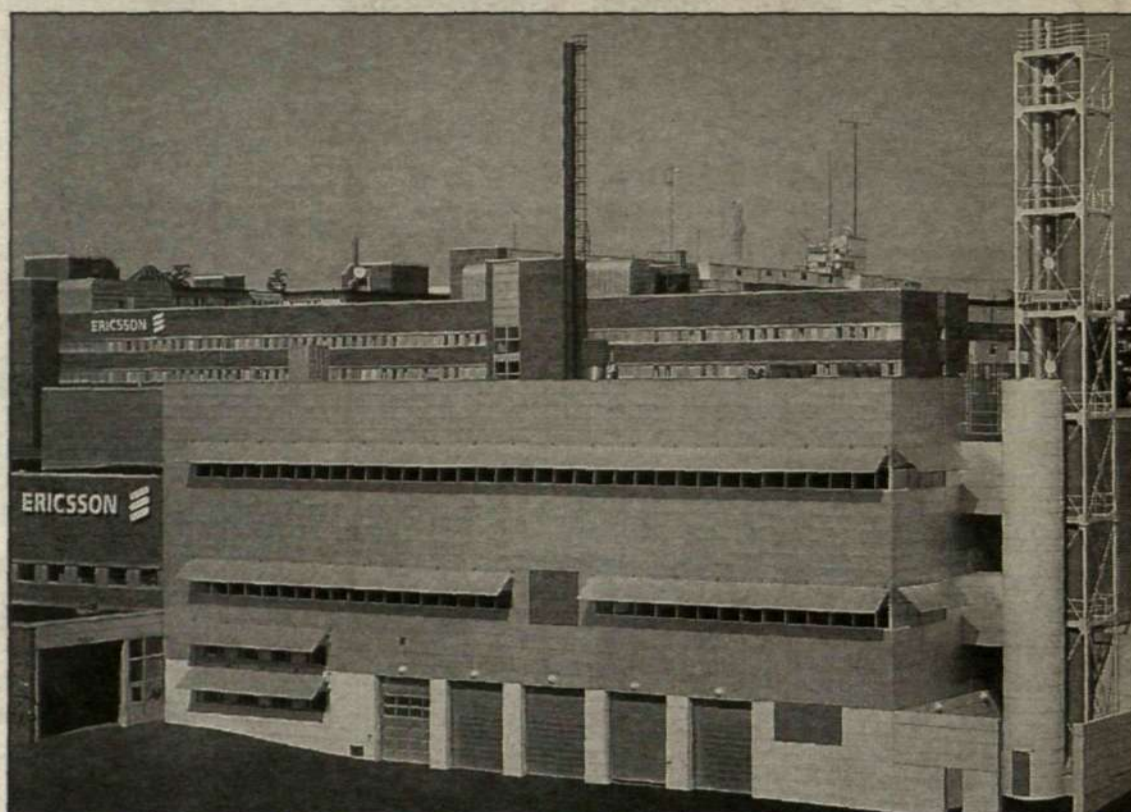
Another important contribution to the unit's accrued knowledge is provided through contacts with external organizations: research departments at technical institutes, industry organizations, partners and suppliers.

Extensive knowledge

"We have extensive knowledge of the entire field," says Greger Haraldsson, the manager responsible for technology strategy and project management.

"We also conduct regular evaluations of various technologies and suppliers. This means that we can quickly provide knowledgeable and objective recommendations with regard to choice of technology."

The unit shall provide leadership and support with regard to



Ericsson is investing one billion kronor in a sub-micron facility in Kista which will be an important part of investments in the important fields of microelectronics and optic technology.



Christer Jungsand, manager of the Core Unit Microelectronic Systems Technology.



Multi-chip modules (MCMs) provide high packaging densities for advanced microelectronic products.

the application of advanced microelectronics in Ericsson products and systems.

Support shall be all-inclusive, from technical evaluations to the production of semiconductor wafers in the submicron facility – the "fab." This unit maintains an overall perspective in microelectronics.

Time, cost and quality

Time, cost and quality are the three principal factors. More rapid development of system functionality and microelectronic components means that Ericsson products can be launched on the market sooner, which increases our competitive advantage. This is extremely important in today's market, since product cycles are becoming increasingly shorter and customers expect a steady stream of new and improved products.

The lead time for a complex integrated circuit with several hundred thousand transistors can be

a year or more. Because complexity is increasing with each new generation of circuits, the risk also increases that problems will occur during design, manufacturing and testing.

It is increasingly apparent that it is the methods and tools, not the semiconductor technology itself, that set the limits for development efforts. The Microelectronics unit is therefore developing new methods and tools that can shorten development cycles, improve quality and reduce costs.

The new unit has extensive experience of ASIC (application-specific integrated circuit) development. Design processes in this area have been developed and verified so that they can be adapted rapidly for a specific type of integrated circuit needed in a development project.

Project support with respect to product-specific circuits includes project analysis, development of design processes, technical eval-

uations and assessments of suppliers.

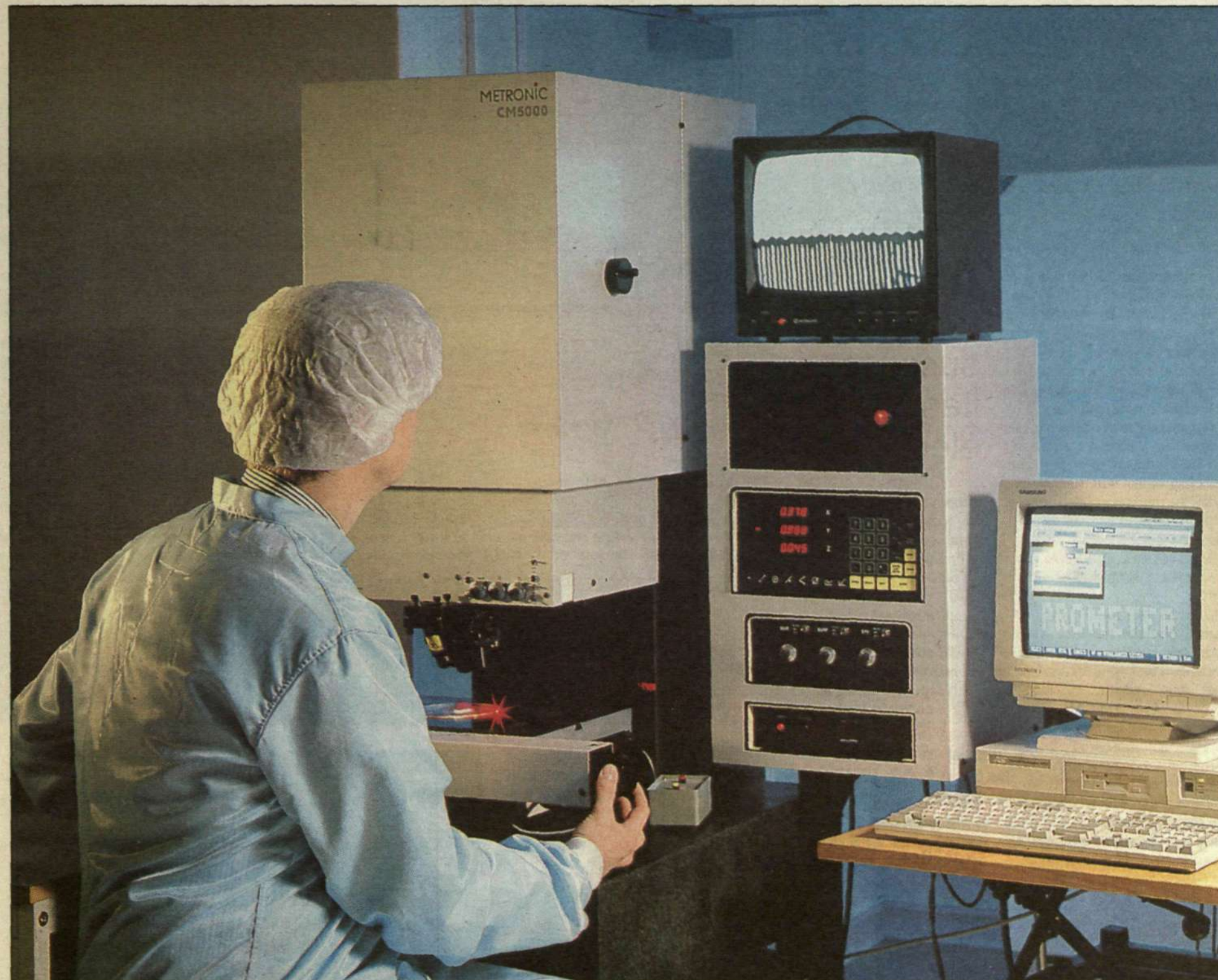
Connections important

Connections are an increasingly important technical consideration, directly related to ASIC design. The increasing complexity – and diminishing size of integrated circuits creates problems in the electrical connection of circuit elements. New technical solutions are necessary. One method is to combine chips of identical or differing technologies on a common substrate in a multi-chip module (MCM).

This, too, is a field in which the Microelectronic unit's experts have considerable knowledge. They can provide advice on the optimal solution for every application.

Advanced "fab"

Many of the services offered by the new unit are in the form of expertise. But in one area, production services are provided.



In applied research in optic connection technology, measurement methods are developed for determining mechanical tolerances less than one micrometer.

The unit is responsible for the brand-new facility in Kista for the production of complex circuits, the "submicron fab."

The fabrication plant will not be used for mass production, which will continue to be subcontracted to external suppliers.

"The knowledge and expertise that Ericsson acquires in operating its own fab will be extremely valuable in contacts with external chip manufacturers," says Hans Borgnäs, who is responsible for planning how the facility will be used in the future.

"We gain knowledge of both the technology's potential and its limitations and will be able to discuss these issues from the position of strength that having our own capacity brings."

Applied research

Ericsson has concentrated applied research to a number of research centers around the world. Four of these centers are located at the Microelectronic Systems

Technology unit. Each of these research centers, at which small groups of Ericsson experts and guest researchers work, collaborates with technical institutes and industrial partners in various countries. The researchers also participate in international research projects as the European ESPRIT and RACE programs.

Four centers

Fiber Optics Research Center (FORC) is focused on active and passive components, integrated optic circuits, passive silicon wave guides and systems simulations.

Micro Interconnect Research Center (MIRC) works with electrical and optic connection techniques and micromechanics with the objective of manufacturing very inexpensive optoelectronic modules.

Microelectronics Research Center (MERC) studies new semiconductor technologies, processes and methods and evalua-

tes their potential and limitations.

CadLab Research Center is investigating new methods and tools for electronics design so that new integrated circuits can be developed more rapidly.

Research the foundation

"Our competence in microelectronics is based on research," says Christer Jungsand. When we see an opportunity to use new technology, we take advantage of it, and within our own organization, we can take it all the way to the product development level.

"As soon as a new concept in optic technology becomes technically and economically viable, we will be prepared with the requisite knowledge.

"Providing technology is a critical factor for the competitiveness of Ericsson products. Our unit will strengthen Ericsson position in the strategically important area," concludes Christer.



From left: Marie Åsbrink, Magnus Bergström, Hans Borgnäs, Greger Haraldsson, Jolanta Norén and Leif Carlsson in a project meeting.

Ericsson signs largest-ever China order



Presently, there are 20 million lines in China, which means that barely 2 percent of the population have telephones. No doubt the need for telephone lines is great.

Ericsson has signed the largest-ever framework agreement with China. The total value amounts to about SEK 3.2 billion. The contract is with Ericsson's largest Chinese customer in Guangdong province. The agreement covers the delivery of AXE equipment, mobile telephone systems and transport network products based on SDH technology. This also includes ATM equipment.

Deliveries to the customer, GPTB, Guangdong Post & Communication Administration Bureau, will take place during a three-year period, beginning in 1996. Manufacturing will be at plants in both Sweden and China.

An explosion in growth in the Middle Kingdom

The developments in China in recent years have resulted in the country becoming increasingly open to business transactions with other countries. The rate of economic growth is among the highest in the world.

"For us, this has meant an explosion in growth," says Tom-Åke Hellberg, who is responsible for marketing operations in China and Hong Kong within the Public Telecommunications Business Area. "Telecommunication is a key cornerstone in China's infrastructure and crucial for the development of the country."

Last year, China was Ericsson's seventh largest market, with sales for this year estimated at SEK 7 billion. Overall, Ericsson has delivered more than three million AXE lines to China which have been placed in operation, plus mobile telephony equipment with the capacity to hand-

le 1.5 million subscribers. This corresponds to a market share of about 20 percent for the Public Telecommunications Business Area, and about 60 percent for Radio Communications. "All of Public Telecommunications' major competitors, Alcatel, Siemens, NEC, AT&T, Northern Telecom and Fujitsu, are represented in China. It's a tough competitive scene in which Alcatel occupies the top position, with us running a strong second," Tom-Åke relates.

In the mobile sector, Motorola is a competitor of the Radio Communications Business Area.

Dramatic sales trend

The increase in Ericsson's sales in China in recent years has been dramatic, and future prospects are encouraging.

"China is en route to becoming one of Ericsson's largest markets," says Kjell Nilsson, who heads Market Operations China within the Public Telecommunications Business Area. "The Chinese are expanding their telephone network by ten million lines annually."

Two percent

China has a population exceeding 1.2 billion. The country presently has 20 million lines, which means that less than 2 percent of the population have telephones. There can be no doubt that the need for telephone lines is great.

However, despite the present rapid rate of expansion, it will take 50 years before the telephone network reaches European standards!

"Moreover, development is not at a standstill," says Kjell.

"The economic development in China is very strong, with its growth rate ranking among the world leaders. As distinct from earlier times, the Chinese today are inclined to be open to the outside, readily absorb know-how and invest in educating and developing people."

Unlimited market

"The Chinese market is virtually unlimited, with new systems, new services and new technology constantly being introduced," Kjell Nilsson continues.

For example, thanks to ATM technology, which enables the transmission of both voice and



"China plans an 80-million increase in lines by the turn of the Century. This volume represents a 20-percent increase in the world market. If only a half materializes, it will still be an enormous expansion," says Tom-Åke Hellberg (left), who is responsible for marketing operations in China and Hong Kong within the Public Telecommunications Business Area. **"China is more of a continent than a country,"** says Kjell Nilsson, head of Market Operations China. **"Our existing regions are along the coast, from north to south. This is where the economic development is presently the most rapid."**



data signals in the same network, large amounts of information can be transferred in a very short time. Since the Chinese industry is expanding at a breakneck pace, data communications is needed to ensure that the manufacturing process be controlled with adequate speed.

Many Chinese stand in long queues to use a telephone. Some are electing to avoid these queues and, while waiting to obtain a conventional telephone, are procuring mobile telephones - status symbol No. 1 in the Peoples' Republic.

"China plans an 80-million increase in lines by the turn of the

Century. This volume represents a 20-percent increase in the world market. If only a half materializes, it will still be an enormous expansion," says Tom-Åke Hellberg.

In addition to deliveries from Sweden, Market Operations China cooperates with subsidiaries around the world which deliver to China: EPA in Australia, EME in Spain, TEI in Italy, MET in France, ETO in Norway and Ascot in Switzerland.

In addition, Market Operations China maintains close cooperation with the local market organization in China, which through its hard work in the field has laid

the foundation for market successes, and which is presently in a strong expansionary phase.

Office in Beijing

Located in Beijing is an office which coordinates all local operations in China. To enhance long-term, competitive possibilities, the Public Telecommunications Business Area has concentrated on the formation of three joint-venture companies, with local partners who represent the Chinese Government in various forms. These companies are located in three different provinces in the cities of Nanjing, Guangzhou and Dalian. The Radio Communications Business Area also has cooperation companies in China - one in Nanjing another in Guangzhou.

Ericsson has more than 500 employees in China. Approximately 200 are employees from Ericsson companies in other countries, the remainder are Chinese who work in administrative, installation, testing and technical-service areas.

"China is more of a continent than a country," says Kjell Nilsson. "Our existing regions are along the coast, from north to south. This is where the economic development is presently the most rapid."

Financing important

In this market, financing is a decisive consideration. A substantial part of Ericsson's business in



A century in changing China

The year 1892 marked Ericsson's first deal with China. This was a contract for "crank telephones" and was concluded with China's Telephone Administration. The "Chinese coffee mill," as it was then also referred to, is a rarity today. A few can be found at antique dealers, at very high prices. Since then, the country's

China is by means of subsidized export credits, which are guaranteed by the Swedish Export Credits Guarantee Board.

Ericsson also assists customers in obtaining bank loans (credits) in payment for deliveries. "Most often, a transaction is closed only



economic and political climates have fluctuated considerably, and it was only in recent years that Ericsson has been able to conduct large-scale in China.

after extremely hard bargaining. The Chinese are clever businessmen.

The important thing is to adopt a humble manner and to be a good listener. High-pressure selling doesn't work in China," Kjell and Tom-Åke relate.

Photo: Toivo Steen

Personal relations are also important when doing business with Chinese.

"A good relationship with a Chinese is not something that can be established in a few months - in a country such as China, continuity is an important factor. It's a matter of having patience and allowing confidence to develop.

Divergent cultures

Obviously, working in a country that is so fundamentally different from one's own culture, language, development and way of thinking and working is not wholly without complications. Accordingly, Ericsson attempts to send those employees who will be working in the Chinese sector on a visit to the Peoples' Republic.

"Being in a country is the best way of learning its culture and way of doing business," says Tom-Åke, who concludes:

"One characteristic I consider important when working in a country such as China is patience. It is not unusual for negotiations to last through days and nights, and numerous and lengthy discussions are required before an agreement is concluded. It is also desirable to possess entrepreneurial ability since the Chinese are clever businessmen, which is largely the reason why working in China is so exciting!"

Joséphine Edwall-Björkdund

Full speed ahead in China

Business Networks

China is one of the most important, and largest, markets for Business Networks, both in the MD110 area and Business Phone.

For some years, MD110 has enjoyed a strong position in the Chinese market with more than one million lines sold. Both pure PABX exchanges for companies and organizations and rural exchanges of DRX type for public traffic are part of the product program. Ericsson is presently a world leader in the area of corporate exchanges in China.

A nationwide private data communication network of X-25 type has also been installed in China. It now serves a large number of the country's banks and corporations.

Since July 1 this year, Business Networks' operations are being conducted in one of Ericsson's majority-owned joint-ventures, Beijing Ericsson Communications Systems Company (BWCP), with head office and production facilities in Beijing. The company has 500 employees, with annual sales of SEK 400 million. Sales operations are conducted in all provinces of the country.

Components

China is one of the business area's largest and most important customers.

Quarterly invoiced sales amount to about SEK 30 million. The company delivers products to China National Digital Switching Systems Center for HJD04 systems, which are manufactured by 12 different companies in China. Ericsson Components develops new products for the system's next generation.

Defense systems

The Defense Systems Business Area is not active in China.

Abbreviations

ATM Asynchronous Transfer Mode is a technique for broadband transmission, that is, transmitting telecommunications signals at high capacities. In addition, ATM also provides an extremely high degree of flexibility, due in part to the subscriber being able to adapt the capacity of a set-up connection to current requirements.

SDH Synchronous Digital Hierarchy is a European standard for digital signal transmission in a telecommunications network. It has been introduced in order to meet higher demands for transmission security and flexibility.

Beirut rebuilds after years of war

Slowly, but surely, Beirut is rising from the ruins of 15 years of war. Hard work has begun to again create a functioning community.

Ericsson is playing an important role in this effort.

Lebanon is the small country in the Middle East which most people associate with war and suffering. It was a complicated situation in which various factions fought each other, with the PLO, Israel and Syria involved in the conflict.

New infrastructure

However, peace has generally prevailed since 1990, with some clashes in the south on the border with Israel. Now work is under way to rebuild the infrastructure needed in a functioning community. Roads, electricity, sewage, waters and, of course, telecommunications.

When the civil war began in 1975 Lebanon had the most modern telenet in the Middle East. This was a requirement so the capital city of Beirut could play the role as a financial, political and cultural center in the region.

Dominant position

"We dominated the tele market in Lebanon during the 1950s and 1960s," Riad Daher, Ericsson's General Manager in Beirut, relates.

"We installed the first automatic switch in the country in the beginning of the 1950s, an AGF, and have been active here since then. We maintained operations during the entire war up to 1989, when the fighting became too intense."

The Lebanese tele network took a heavy punishment during the years of war.

Bird's nests

"Only 300,000 of 500,000 lines were operational. Half of the switches were older electronic versions, the rest were electromagnetic," Riad Daher continues. "The network was a chaotic mix of private connections and improvised solutions," he relates, referring to the unbelievable "bird's nests" of twisting and tangled tele and electricity lines visible along the streets of Beirut.

Riad Daher and his staff recently moved into a new head office. The old office was destroyed in the fighting and when operations were re-established in 1992, the company was without an office, with a warehouse as the only fixed point.

But the traces of war remain and the wall outside the entrance is pocked with bullet holes.

Two years ago, Ericsson's management decided to focus on Lebanon again. A position in



Once Place de Martyrs was the pulsating center of cosmopolitan Beirut. Today, it's a dusty vacant lot, surrounded by ruins. However, private entrepreneurs have set-up a café on the square, with some plastic furniture and umbrellas.

Lebanon is a necessity for competing for markets in the Middle East. The country is still a prestige market in the region and other countries in the Middle East keep a close eye on events in the country.

First order in 1992

Ericsson received its first order for equipment and upgrading of older AXE systems in the spring of 1992. At the same time, it was decided to participate in the bidding for a contract for one million lines. After four months of tough negotiations, Ericsson, jointly with Siemens and Alcatel, were awarded the contract to provide Lebanon with a new tele network.

"The competitors were very aggressive and Siemens, in particular, tried to take the entire order for itself. However, our very high reputation, our tenacity and our products were decisive for Ericsson to be part of the order," says Riad Daher.

The order for Ericsson in Lebanon totaled USD 190 million, for 14 telephone stations with 284,000 lines to be built through 1996.

Ericsson veteran

"We have completed 40,000 lines already, but we could have installed 150,000 if we had not been hit by delays," Riad Daher reports.

Daher is an Ericsson veteran, born in Lebanon and employed during the 1960s. Since 1989 he lives permanently in Sweden, but will be spending a lot of time in his homeland in the years ahead.

One of the completed telephone stations is in the suburb of Zouk, about 6 miles outside Beirut. Operations Manager Marti Makinen has good use of his experience in Thailand when



Riad Daher, General Manager of Ericsson in Beirut, is a very busy man these days when now the war-torn Beirut is being rebuilt.

he drives to the station through the chaotic Beirut traffic.

As a result of the modern, compact technology, today the telephone station can be housed in a normal office building, which is the case in Zouk, where the entire installation for 25,000

lines is located on a single floor. There are no telltale signs from the outside of the building to indicate that the building houses ultra-modern telecommunications equipment.

"Lebanon is hopping over 20 years of development, from the



Photo: Per-Åke Fröberg

Fifteen years of war knocked out major segments of the Lebanese telecommunications network. Central Beirut is filled with "bird's nests" of provisional connections of electric and telephone lines.

Nevertheless, much has happened in just a couple of years. The street lights are working again and households now have electricity 12 hours a day.

Work to rebuild 1.6 million square meters of ruins in the center of the city has begun. Within

25 years the city will have a modern center.

Poor and rich

The contrasts are also enormous. Rolls Royces and Ferraris are parked in front of the Saint Georges private yacht club, like

an absurd island of luxury in the midst of the ruins. Can Beirut regain its role as a cosmopolitan center in the Middle East?

"I believe that it will take decades before we are back there again," Riad Daher contends.

Per-Åke Fröberg



Hans Jonsson, Project Leader for Ericsson's new billion-kronor project in Lebanon.

Mobilization in Lebanon

Feverish activity is under way at the project unit within Network Engineering at Ericsson Business Networks AB. Mobilization for the new billion-kronor project in Lebanon is in full swing. Hans Jonsson, one of Ericsson's most experienced personnel, has been appointed project leader. He has been in Lebanon for several months and started up operations at full speed.

"This is an interesting challenge as well as a heavy responsibility," says Hans Jonsson, who has already worked seven years on foreign assignment for Ericsson. "This is the first time that I am taking over a really large network construction project. I have worked with installation large industrial networks, most recently in Saudi Arabia."

150 locations

The work with the network project in Lebanon is spread over 150 different sites nationwide. Although the country is small, it takes significant time to travel from Beirut to the outlying sites where Ericsson is working. The largest is in the town of Saida. Traffic is very heavy on the underdimensioned roads. All trips must be carefully planned.

Ericsson is one of three suppliers (the others are Siemens and Alcatel) contracted to repair 55,000 lines and install 170,000 new lines in the war-torn country. The contract was signed this spring with the Lebanese telecommunications administration MPT (Ministry of Post and Telephone).

The total value of the project is SEK 1.2 billion. This is one of the largest network projects undertaken by Ericsson since the company built the tele network in Malaysia.

The project in Lebanon is a total undertaking, encompassing all planning, engineering, fiber optical cable, transmission and radio links. Ericsson is also responsible for erecting more than 100 buildings and to deliver and install up to 30,000 telephone poles. Much of the required material is shipped from Sweden.

The AXE switches for the project have been procured in a separate contract direct from Ericsson Telecom. The switches are valued at SEK 350 million.

Ericsson Business Networks and Ericsson Telecom are jointly responsible to the customer for ensuring that all aspects of the project function in a coordinated manner.

Rapid mobilization

"As soon as the contract was signed, we were a small group which immediately began looking for offices and housing as well as qualified personnel. We've established good cooperation with Ericsson's representative in central Beirut, STL, and initially used a floor in their office building," Hans Jonsson relates. "Now we've moved into our own offices outside Beirut."

The contract period for the Lebanon project is 36 months. Since mid-year, production and design activities have been under way and installation work will begin in September.

At year-end 1994, production should be running at full capacity, with 100 to 120 people involved in the project, plus all the subsuppliers.

"Planning and tight control from the beginning. Keeping costs continually under control, to ensure that early warnings signs are detected before costs get out of hand. This is the key aspect for ensuring that a project such as this is profitable," Hans Jonsson contends.

"The aim is to make this an exemplary project which can be the model for the future."

Thord Andersson

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vator, and are interested in sharing your knowledge and experience to help people to develop. For further details, contact Margareta Pettersson, phone 08-719 22 71, Memo: EDTMAPE or Göran Haner, phone 08-757 38 00, Memo: EDTGHAN.

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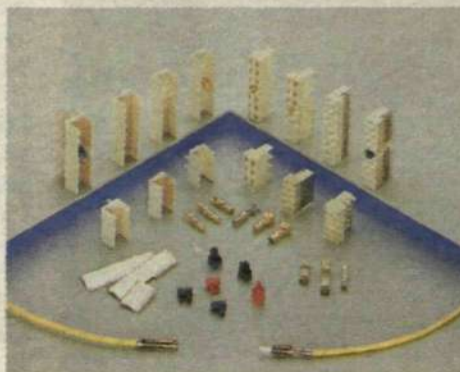
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Working to improve customer satisfaction

Improvement. Improvement. Improvement! The entire Ericsson organization is imbued with an effort to improve.

Customer Services at Ericsson Radio's business unit European-standard mobile telephony is doing its share through "Care 2000." This is a comprehensive multiproject improvement program that is being developed in cooperation with the Operational Development unit at Ericsson Radio.

"We have to develop continuously and over the long term in order to meet the demands that will be placed on us in the future," says Ingvar Andersson, Customer Services Manager.

A major customer research study laid the groundwork for the activities within Care 2000. Hundreds of in-depth interviews with operators in a large part of the world showed opportunities for improvement in a number of areas. The projects under way right now are designated Customer Satisfaction in Service (CSIS), Service Product Concept, Swap and Repair, and Traceability.

Kaj Snellman, Manager of Care 2000, is optimistic about the future of the operation.

"The support we have from local companies and within our own organization, coupled with the major efforts being made in participating pilot organizations ensure good results from the project," he says.

Reduced lead times

"In the CSIS project we are working to reduce lead times for the handling of trouble reports from the customer and for delivery of correction packages," say Karin Stephansson, subproject leader and her colleague, Jonas Gunnarsson.

The project involves working with "pilots" throughout the entire chain of the processes, from customer-account managers to designers. (Process is defined here as what is done and the order in which it is handled.)

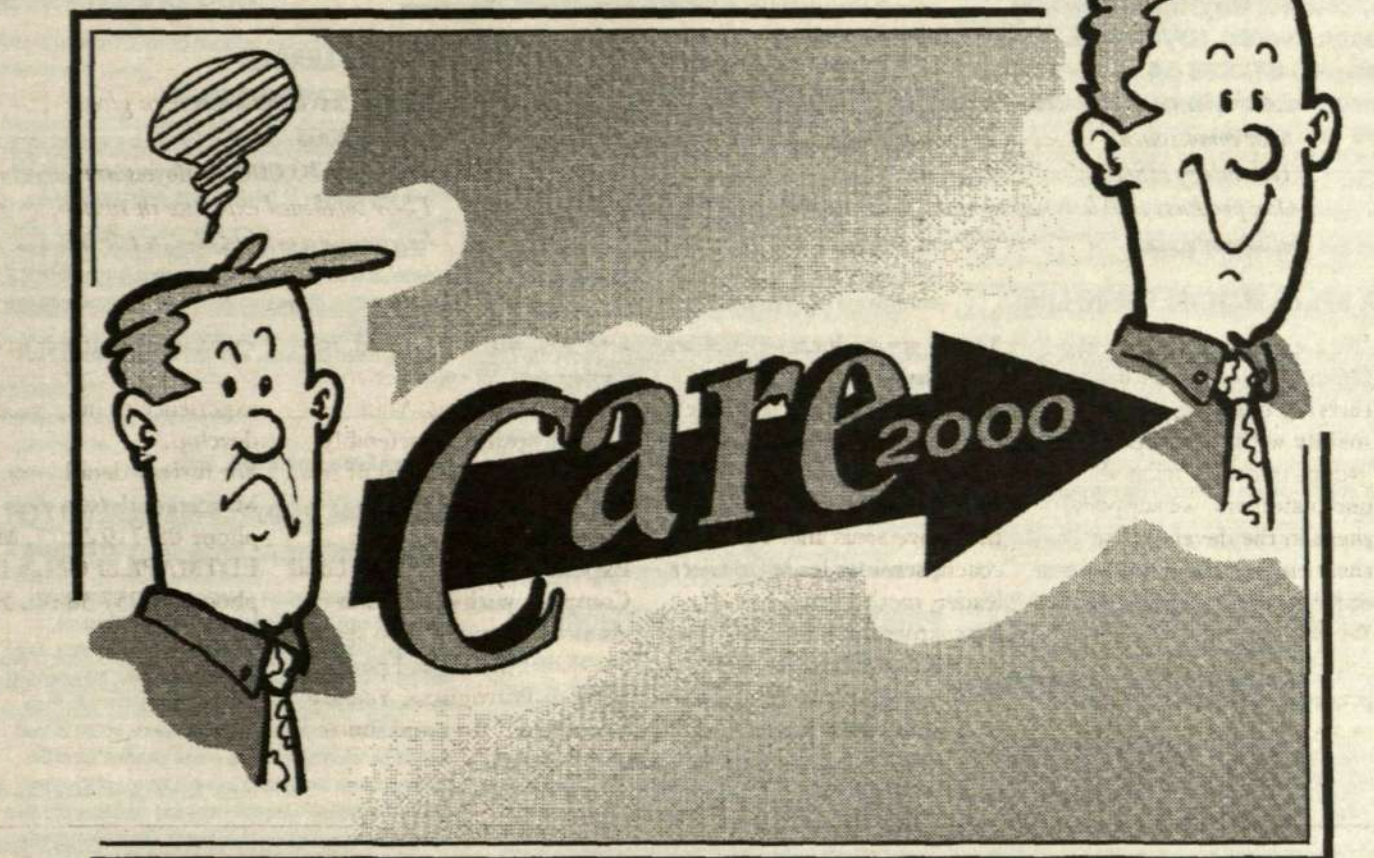
Representatives of these pilot organizations met in June this year to determine, through business-modeling, how today's process can be improved, as well as how future flows of work should be organized. Participants in the project are now working to implement the agreed changes.

A key area, if the objective of satisfied customers is to be achieved, is the interface between Ericsson and its customers. Members of one of the CSIS subproject teams have developed a tool, the Customer Interface Improvement Process, for this purpose.

"By using the Customer Interface Process, you can measure the degree of the customer's satisfaction and initiate continuous improvements," says subproject leader Johan Almlöf, adding: "The dialog with the customer always determines the measures taken."

Service Product Concept

It has become increasingly plain that the marketing units are demanding a clear



"Care 2000" is the collective name for the various subprojects designed to improve customer support that are being conducted by units within Customer Services. From left in the photo: Karin Stephansson, Göran Kördel, Ingvar Andersson, Sören Ahlstedt, Gabriel Anderbjörk, Jan Hansson, Kaj Snellman, Johan Almlöf and Kerstin Blom. All have a part in Care 2000.



product concept for customer support services. The Service Product Concept project, led by Gabriel Anderbjörk, is attempting to "productify" these services and to develop sales tools for them. The objective is to produce, among other materials, a product guide, a marketing guide and an implementation guide. The project will also develop methods for ensuring that the level of knowledge in the customer support area is raised and maintained.

The project has passed "Tollgate 2;" project specifications have been approved and a team has been assembled. The project management team, which includes Julie Axelsson and Urban Styf in addition to Gabriel, is rolling up its sleeves for a year of hard, intensive work.

"Together with two pilot organizations, the unit for cellular systems for Ericsson in England and the marketing unit for Western Europe, we will not only produce a product catalog for Customer Services but also make sure that we in the business unit European-standard mobile telephony begin to build up understanding of these new products, commercially as well as administratively," Gabriel says.

"The new products differ from what we have been accustomed to earlier," he notes.

Swap & Repair

When equipment breaks down it must be repaired immediately. It is extremely important for a customer to be able to obtain

a replacement for hardware that cannot be used.

"The concept underlying the Swap and Repair project is that most of the equipment the customer sends in to be repaired should be replaced immediately by similar products that we hold in a 'buffer' inventory," Göran Kördel, the manager of this project, says.

The defective unit is then repaired and placed in the buffer inventory. The project's ambitious objectives are to reduce lead times for the exchange of spare parts to one fifth of what they are today, and to cut present repair times by at least half.

Next, the project will work on plans for future repair shops, as well as on projects in Norway, Germany and Portugal.

Traceability

To enable Ericsson to meet and anticipate customer requirements, the Traceability project is developing a system to "track" hardware. The "Tracey" database will contain information on the hardware in customers' hands. One pro-active area of application for "Tracey" will be to track equipment that is susceptible to epidemic faults, making it possible to correct the defects before the customer notices any problem.

"The project was completed at midyear and the job of implementing the system in the market has begun," Project Manager Jan Hansson says.

Kerstin Blom

Kerstin Blom is the information manager for "Care 2000". For additional information, Kerstin can be reached at Dept. KI/ERA/LZ/RM. E-mail: ERA-KEBL. Tel: 4042307.

VACANCIES AT ERICSSON

This is a selection of vacancies within the Ericsson corporation. They are published in the electronic News system, which is being updated once a week. For further information about advertising here, contact Birgitta Michels at Ericsson Events, HF/LME/A. Phone +46 871928 14. The next issue will be published at the end of June.

Ericsson Radar Electronics, Mölndal

AREA SALES MANAGER MIN-LINK

The Microwave Communications Division announces a position as Area Sales Manager based at Ericsson Radar Electronics AB in Mölndal. You will be responsible for all sales and marketing activities for MIN-LINK within a region. The marketing and sales activities are carried out mainly via Ericsson local companies or direct to the end users and operators.

We are looking for persons who have experience in marketing and sales, combined with technical knowledge. Knowledge in different communication applications is preferable. You should be prepared to travel as the major task is to have a close relationship with our local companies and end users. Applicants should have an excellent knowledge in English. Additional languages are appreciated.

Contact: Kent-Arne Johnsson, 031-671569, memo ERE-KJO, Mikael Bäckström, 031-671678, EREMBM, OR MajBritt Arfert, 031-672651, EREMAT.

Ericsson Hewlett-Packard Telecommunications AB, Västberga Allé 9

MARKETING

Management of Telecom network will be more and more crucial for the Operator into year 2000 and we are looking for YOU who dares to take this challenge and propose solution towards the operator.

TMOS is the family name of Ericsson Operation Support System and was launched 4 years ago. Today about 120 systems are installed/operation in 28 countries. The system has widely exceeded Ericsson's expectations and our competitors treat us with great respect.

Recently we have signed up with one of our customer the largest TMOS contract ever and this is a start into a new area of TMOS. We have to cope with the tough and complex world of telecom today and also plan for the future in which we now will enter.

For this reason our Unit which deals with the markets in Italy, Australia, France, Germany, Ireland, Portugal, Greece and Eastern countries are looking for Marketing people who know or are prepared to take an active part towards our markets.

YOU will be responsible for the market/customer and define market plans/activities and follow up at customer basis. YOU need to have about 5 years of proven records in marketing of telecommunication or computer equipment and of course with commercial background.

Contact: Kent Linde, memoid EHS.EHSKELJ, phone: 08-719 7409 or Anette Oke-Brådmann, memoid: EHS.EHSAOKE, phone: 08-719 8287 (personnel). You can also send your application to Inger Agdahl, by post VK/EHS/FP or memoid: EHS.EHSIAL. Last day of application is September 15th. Looking forward hearing from YOU!

Ericsson Telecom AB - BU Local Switching Systems, TN

PRODUCT MANAGER - NETWORK OPERATOR PRODUCTS

The Product Group Network Operator Products is responsible for products aiming at enhancing operations of the BU Local customers. Traditionally we have spent much effort on O, A & M products for AXE, an area where we today are very competitive. To keep this position we must provide our cus-

tomers with even more cost-effective solutions. These must support new technologies and applications such as Access Network Management, Management of Cordless Terminal Mobility and TMN Alignment. We therefore need to strengthen our Product Management unit with 1-2 persons. You probably have a background in Marketing or Product Development.

Experience both from AXE and the UNIX world is considered as an advantage, however most important is that you have a genuine interest for matching customer needs with profitable products.

Contact: Jan-Olof Lönnblom, 08-7198989, Memo ETXJOL or Mats Eriksson, 08-7199313, ETXMATE.

Ericsson Ltd, UK Mercury/Cable & Wireless, Business Group

SECTION LEADER - PLANT ENGINEERING

To work in and supervise a Plant Engineering section, using PLEASE IE tools, including verification of customer/section inputs and outputs. To handle Mobile and Fixed line exchanges.

REQUIREMENTS: Several years Installation Engineering experience in an AXE environment preferably with some PLEASE experience. Supervisory experience and good customer interface skills.

Contact: Helen Edmonds, +44 483 465118, Memo ETLHNES.

Ericsson Radio Systems AB, Kista

REGIONAL PROJECT MANAGERS FOR LATIN AMERICA, ASIA AND EUROPE

We have received and are expecting very many new contracts and expansions on Mobile Telephone Systems, American Standard, from customers in Latin America, Asia and the former Soviet Union. In order to meet the extensive and rapid growth of the market an organisation with three new positions - Regional Project Managers-, will be formed. You will be responsible for the overall coordination of the implementation and support services for one of the above regions. You will also support sales and marketing activities in order to receive additional business. Project Managers for implementation and support services will report to the Regional Project Manager and they will be responsible for running their projects according to scope of work, time schedule and budget. Your work will naturally include extensive travelling and contacts with customers and our local Ericsson companies.

We believe that your formal education should be a Masters or Bachelors degree in engineering, science or business administration. Minimum five years experience in project management of customer delivery projects or system sales and marketing activities. Also experience from mobile telephone systems, transmission networks or AXE switching systems is preferred as well as experience from living and working abroad. Alternative background may also be considered. Fluent ability in speaking and writing English is required. Knowledge of Spanish is required and Russian is desired for those regions.

Contact: Arne Palmkvist, 08-757 0422 Memo ERAARP. Send short CV to KI/ERA/A/H Jan-Olof Segerfeldt, 08-757 5754, memoid ERARMOAA.

Ericsson Mobile Communications AB, Kista

SYSTEM SALES MANAGER FOR THE FORMER SOVIET UNION, BASED IN STOCKHOLM

You will be responsible for all EDACS sales activities within the former Soviet Union (except the Baltic states).

The requirements are MSc (Eng) combined with commercial education or MBA or equivalent combined with technical knowledge. Applicants should have a minimum of five years of experience in systems sales of telecommunications equipment. Knowledge of radiosystem is preferable. Applicants should be fluent in both Russian and English. The position requires willingness to travel 100 days a year.

Contact: Bo Stenqvist, phone +46 8 757 0135, Memo ECS.ECSBOSQ or Britt Bosrup, phone +46 8 757 0109, ECS.ECSBUP.

Ericsson Components AB, Microelectronic Access Devices, Kista

PRODUCT MANAGER

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keting strategy plus product portfolio development for a dynamic and fast growing family of SLICs. Requires a technical background in

Required is a technical background in electronics coupled to business skills. Experience from telecom systems, linecard design or marketing is an advantage.

Contact: Johnny Johansson, 08-7574218, Johan Eriksson, 08-7575025 or Jan Uhländer, personnel, 08-7574508.

Ericsson Mobile Communications AB, Kista

SYSTEM SALES MANAGER MOBILE RADIO

Business Unit Land Mobile Radio announces a position open as System Sales Manager located in Stockholm. The job will offer broad international contacts, both with end customers in Europe and with our development and manufacturing organization in the US. We are strengthening the organization because of the continued success gained by our EDACS system. The position calls for a University degree in Engineering or Business Administration. It is important with experience from system sales, that you show initiative and that you are truly business oriented. You will be assigned the responsibility to market and sell EDACS in certain European countries.

A good knowledge of English is necessary, other languages is an advantage. Periodically you must be prepared to travel intensively.

Contact: Per Karlborn, 08-7572238 or Britt Bosrup, Personnel, 08-7570109.

Ericsson Radio Systems AB, Kista

PRODUCT MANAGER SWITCHING PRODUCTS

Business Unit for Cellular Systems - American Standards (RMOA) offers our customers solutions for the PCS networks in the 800 and 1900 MHz frequency bands based on the D-AMPS specifications. D-AMPS products are being extended from the support of wide area mobility to wireless office and residential solutions. The responsibility of Product Manager Switching Products is to prepare decision input for new products and product upgrades, define product concept for the switching products jointly with the systems design and customers, and define market guidelines for marketing and selling of the products.

Experience of switch network planning, design or product management is necessary. The work entails international contacts and travel.

Contact: Janez Skubic, 08-7571750, Mats Blumenberg, 08-7571330. Application to KI/ERA/A/HC Ulla-Britt Jansson, Memo ERARMOAA.

Ericsson Components AB, Microelectronic Access Devices, Kista

DESIGN SUPPORT/APPLICATION ENGINEER

Design and application support engineer with linecard and telecom circuit design knowledge to work with our customer supporting and implementing designs with our linecircuits. Applicant must be familiar with linecard design or have similar analog design experience. Working knowledge of telecom devices, testing methods and/or telecom specifications are highly desirable. Ability to make technical presentations both in writing and before customers is necessary. Fluent English a demand, other major languages an advantage.

Contact: Johnny Johansson, 08-7574218 or Johan Eriksson, 08-7575025. Applications to Jan Uhländer, Ericsson Components AB, 164 81 Kista-Stockholm.

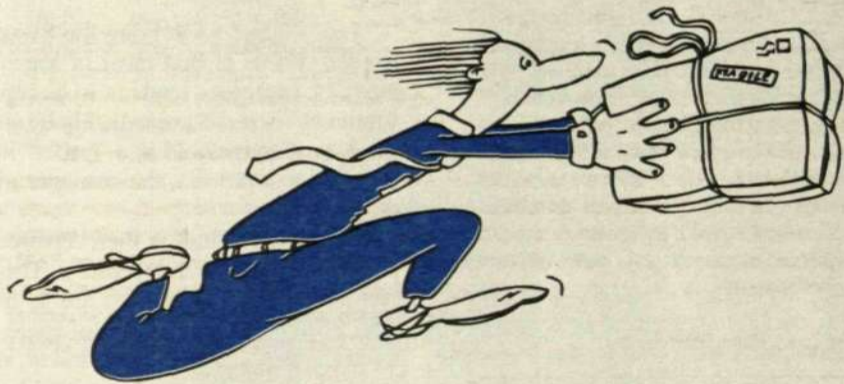
DESIGN LINECIRCUITS

Design and related development work for Subscriber Line Circuits in bipolar silicon processes. Position is within group working with a new family of SLIC's. Applicant must have an engineering background within silicon design, analog or mixed-signal electronic design and/or telecom system design. Engineering education in electronics, ability and interest in analog design is necessary. Info as above.

TEST/PRODUCT ENGINEER

Test program and fixture development work for analog and mixed signal component testers. Production support, yield improvement and customer support for correlation and quality improvement. Background in electronics testing, electronic design and/or telecom/linecard design is necessary. English knowledge necessary for both training and customer contacts. Info as above.

EMERGENCY HELP LINE



COMPONENT AVAILABILITY IS OUR MOTTO!

At no cost to you we search worldwide aiming to find your urgently needed stock for electronic components and deliver it to your door.

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Box 134
S-191 22 Sollentuna
Sweden
Tel +46-8-967030
Fax +46-8-355151

Ericsson Radio Systems AB, Competence Center, Kista

CONFIGURATION MANAGER

The work involves the program production in different steps, coordination towards design projects, assembling of Test Beds etc. You need to have experiences in Unix, Make and Bacchus (Build Tool). TESTERS You will work with specification of test cases in TTCN in close cooperation with the design. The testing will be carried out on simulated or target environment. You have experience in testing and trouble shooting in the CME area. It is a plus if you are familiar with the new technology and its methods. TEST CHANNEL RESPONSIBLE The responsibilities for you will be ordering of equipment and tools for these channels, installation of tools and hardware, maintenance of tools and test channels. Experience with AXE 10 installation and test is required. It is a plus if you have worked with installation and start up of data networks.

Contact: Henrik Voigt, 08-7571292, Memo ERAHVT, Thomas Friberg, 08-7571302, ERATHOF, Solveig Hasselqvist-Ax, personnel, 08-7572344, ERASST.

Ericsson Radio Systems AB, Competence Centre New Techn., Kista

IMPLEMENTATION - AXE

In order to prepare ourselves for the first customer projects we are presently working on the establishment of a new unit to be responsible for network product design, plant engineering, installation and testing. This will be carried out in close collaboration with "HAXEN" where special training and on-the-job training will be offered during the first year of employment.

You have several years of experience in the above-mentioned fields within mobile telephone systems, especially switching. You also have a technical university degree or the equivalent, and you have perhaps worked a few years abroad. In terms of your outlook you are inquisitive and open to change and interested in new ways of working.

Contact: Björn Magnusson, 08-7573497, Memo ERABJM or Solveig Hasselqvist-Ax, personnel, 08-7572344, ERASST. Application to KI/ERA/LT/HS Kerstin Lundberg.

Ericsson Telecom AB, TN

SYSTEMS ENGINEERS - NETWORK OPERATOR PRODUCTS

The Product Group Network Operator Products is responsible for products aiming at enhancing operations of the BU Local customers. Traditionally we have spent much effort in O, A & M products for AXE, an area where we today are very competitive. To keep this position we must provide our customers with even more cost-effective solutions. These must support new technologies and applications such as Access Network Management, Management of Cordless Terminal Mobility and TMN Alignment.

We therefore need to strengthen our Systems Management unit with 5-6 persons. You probably have a background in Systems Management or Design. You should have competence in one or several of the areas Access Networks, TMN, Object Oriented Design, specially the early phases and/or UNIX design environment.

Contact: Nils-Bertil Kindgren, 08-7198299, Memo ETXT.ETXNBK or Jan-Olof Lönnblom 08-7198989, ETXT.ETXJOL.

Ericsson Telecom AB, TNS Operations Verification, Kungens Kurva

SECTION MANAGERS

BU-TNS is developing transmission products eg cross-connections, synchronous multiplexers and integrating with FMAS, and other third party products into a network. It is an expanding market and now the new organisation has need of an OPERATIONS sector to look after maintenance, consolidation and CNA problems.

Section Manager for T/OVG

T/OVG is responsible for network verification of PDH & SDH networks with third party products and its maintenance and consolidation. Support for AS and CNA packages too.

- * Knowledge of CNA and Upgrade handling procedures.
- * Knowledge of AS production and Verification procedures.
- * Experience at least 2 years as a section manager
- * Good interpersonal skills
- * Ability for intercultural management.
- * Good oral and written skills.
- * Good command of English.
- * Knowledge of maintenance and consolidation process.

- * Knowledge of transmission would be an advantage.
- * Knowledge of third party products integration and network management would be an advantage.

Responsibilities:

- * Support crew for AS network verification reports to you.
- * Ensure support plans for 2 AS deliveries per year.
- * Ensure support plans for CNA/CNI deliveries 4 times a year.
- * Ensure competence plan development plan for support engineers.
- * Establish procedures for cooperation between other sections for support and maintenance.
- * Establish organisation structure for ASV and support maintenance activities.
- * Liase and coordinate support with T/OVC.

Section Manager for T/OVC

T/OVC is responsible for AS planning, project management and resource planning.

- * Knowledge of CNA and Upgrade handling procedures.
- * Knowledge of AS production and Verification procedures.
- * Experience at least 2 years as a section manager
- * Good interpersonal skills
- * Ability for intercultural management.
- * Good oral and written skills.
- * Good command of English.
- * Knowledge of maintenance and consolidation process.
- * Knowledge of transmission would be an advantage.

Responsibilities:

- * Establish planning procedures
- * Establish plans for AS and CNA activities.
- * Responsible for the resource planning
- * Ensure sufficient project management competence and resource for ASV and consolidation projects.
- * Responsible for all subsidiary personnel.
- * Establish a competence buildup plan.
- * Liase and coordinate support with T/OVG

Contact: Suzie Ong, 08-7194808, Memo ETXT.ETXSUON, Thomas Haagendal, 08-6812624, ETXT.ETXTHAA or Catarina Larson, personnel, 08-7190836, ETXT.ETXLCAT.

Ericsson Radio Systems AB, Kista

MANAGER FOR IS/IT FUNCTIONS WITHIN RMOA

In order to strengthen RMOA's efforts in the areas Continuous improvement, Process development, IS/IT and Quality assurance a new Operational Function has been formed at ERA/A. The aim of the work is to develop and coordinate the IS/IT support within our BU.

We are looking for a person with wide experience from IS/IT management and administration. Good knowledge in English needed.

Contact: Hans Wigren, 08-7573188, or Ulla-Britt Jansson, personnel, 08-7573352. Appl. to KI/ERA/A/HC U-B Jansson, Memo ERARMOAA.

Ericsson Radio Systems AB - Kista

MANAGER - SWITCHING PRODUCT MANAGEMENT

Business Unit for Cellular Systems - American Standards (RMOA) offers our customers solution for the PCS networks in 800 and 1900 MHz based on the D-AMPS standards. D-AMPS product offerings are being extended from the support of wide area mobility to wireless office and residential solutions. For the unit Switching Product Management we need a manager with the responsibility for profitability of the D-AMPS switching products. This entails establishment of product strategies, definition of product offerings, life cycle management, dialogue with customers and product management relations with our product sources.

Experience of switch network planning, design or product management is necessary. The work entails international contacts and travel.

Contact: Janez Skubic, 08-7571750 or Mats Blumenberg, 08-7573310. Application to KI/ERA/A/HC U-B Jansson, ERARMOAA.

Ericsson Telecom AB, BU Transport Network Systems, Sättra

TEST ENGINEER

You will be working in a small, efficient team which is responsible for preparing the system test for production, known as ACAT. Programming is in C. We are situated at Sättra. The position consists of development of test methods, tools and programs. Project management and guidance of others in the group is also included.

Proven ability to work with people to achieve required results, high level of self-motivation and good verbal and written communication skills, including English required. Knowledge in general production test environment, ACAT test environment and in Ericsson systems including PROPS, PRIM etc would be highly regarded.

Contact: John Everingham, 08-7196227, Memo ETXT.ETXJOEV or Catarina Larson, personnel, 08-7190836, ETXT.ETXLCAT.

Ericsson Systems Expertise Ltd., Ireland. 940808 International Customer Training Centre, Dublin

COURSE DEVELOPERS and TECHNICAL TRAINERS

(Long-term contracts)

The New Technology unit (EEI/TN) within Ericsson Systems Expertise Ltd has a number of vacancies for experienced AXE10 staff to work as both course developers and technical training engineers. The successful candidates will report to John Griffin, Manager, New Technology Business Unit. EEI/TN investigate and develop courses on the latest Ericsson products e.g. AMPHION, MXE, ATM, etc. Candidates should have a strong technical AXE10 background preferably with a University Degree and a minimum of 2 years experience in either design, test or a training environment. It is envisaged that you will design and deliver courses to both internal Ericsson staff and to Customers. Prior experience within a competence development environment is not required as adequate training in this area will be provided.

Desirable Skills: Good written and presentation skills Fluency in written and spoken English Self Motivated Team oriented Knowledge of AM (optional) Good knowledge of Ericsson with a wide contact network FORTS. You will be at the forefront of technical advances in Ericsson in a highly visible and challenging role within a complex and busy environment.

These positions are on a long-term contract basis for a minimum of one year with a preferable term of two years.

Contact: EEI/TN John Griffin (EEI.EEJGN) or EEI/PE Margaret Mc Manamon (EEI.EEIMMM) Contracts Manager.

Ericsson Australia Pty. Ltd., Melbourne

AXE PRODUCT MANAGEMENT

The main responsibility of the role is the product management of functions and features in AXE towards Telecom Australia. This involves liaising with both internal and external customers to resolve technical issues and specifications requirements. The role also entails the ongoing management of budgets, quality requirements and delivery schedules for AXE packages contracted to Telecom Australia.

Suitable applicants should be tertiary qualified (Engineering or related discipline), have 3 to 5 years experience in telecommunications, specifically in the AXE environment, knowledge of Ericsson documentations and software processes is essential. You need to demonstrate excellent communications and interpersonal skills. Ideally, applicants would be computer literate.

Contact: Pak Louey, Memo EPAPAK.

Ericsson Ltd, Guildford, England

SENIOR TESTER FOR CMS / MASTER TACS

ETL Guildford are adding Master TACS design and test to our existing BSC & HLR design responsibilities.

We are looking for an experienced tester with minimum 4 years in function, AS or System test. Ideally you have CMS 88 testing experience and are capable of advanced trouble shooting. This is a minimum 2 years contract assignment.

Contact: Steve Foster ETLETLJFR, ECN 832 5383 or + 44 483 465383or John Hayes ETLETLJHA. Mail address: Ericsson Ltd, 3 Guildford Business Park, Guildford, Surrey GU2 5SG. England.

Ericsson Mobile Communications AB, Warsaw, Poland

BUSINESS MANAGER POLAND, MOBILE RADIO

Installations of the first EDACS system in Poland is about to be finished and we are planning for future expansions and after sales services. The Business Manager will take the full business responsibility for our Polish EDACS operations. You will be leading the local EDACS team and you report to the Managing Director of our Polish company as well as to Ericsson Mobile Communications in Stockholm. Your areas

of responsibility will cover marketing, sales, technical sales support, implementation and after sales services. The positions call for a University degree in Engineering or Business Administration. It is important with experience from system sales, that you can work independently and that you are truly business oriented. Apart from System sales experience you will probably benefit from a background in any other area of a sales company's operations. A good knowledge in English is necessary and fluency in Polish highly desirable.

Contact: Jerzy Gryn, 00948 2 6593355, Per Karlborn, 08-7572238 or Eva Jansson, personnel, 08-7571459.

Ericsson Mobile Communications AB, Kista

DEVELOPMENT MANAGER RADIOMODEMS MOBILE DATA

Mobile Data is the first step to a wireless multimedia world. Mobitex is Ericsson's successful packet data network and has been sold to many countries over the world. Our modern radiomodem technology opens up a challenging wireless data communication world. The development team, consisting of some 50 engineers, needs a new coach. We design all parts of the radio, control hardware, software and mechanics. We need you who can set stimulating goals and find new roads to exiting applications in a rapidly changing world. You will report directly to the BU manager and you will be a part of the management team.

Suitable background is at least 10 years in development with substantial management experience. You are in addition business oriented, committed to continuous improvements and have a fluency in English.

Contact: Göran Berntson, 08-7570378, Memo ECSGBN or Eva Jansson, personnel, 08-757 1459, ECSEVAJ.

Ericsson Telecom AB, Systems Management & Design, BU Local, TN

SYSTEM FILE MANAGER

The mission of Systems Management & Design at BU Local is to secure periodic system releases of our active Product Lines (PL's) and Source Systems (SS's) which fulfil requirements on time plans and functionality, minimize BU Local's costs for development, maintenance and handling, minimize the need for market design, ensure the upgradeability of the systems and fulfil requirements on characteristics and quality.

We are looking for a System Engineer to be responsible for the System File used in our Application Module (AM) based systems (concerned projects are FM-P4 and Amphion). The System File ties together the System Modules in AM based systems which contain SW written in High Level PLEX. It contains specifications of global procedures and type declarations and constants which are common in the whole system. As System File Manager you will mainly be responsible for updating and maintaining the system file, participating in the HL-PLEX forum, monitoring the Application Platform (AP) Service Specifications, writing Design Rules, handling of strategic issues as regards the system file, and being chairman at coordination meetings. You will have a key role in our projects (Amphion, FM-P4, and future projects) which will give you excellent opportunities to gain competence and extend your contact network. You will work in a dynamic and stimulating environment together with persons with high AXE competence.

Contact: Per-Erik Eriksson, 08-7195118, Memo ETXT.ETXPEE or Krister Skälberg, 08-7197765, ETXT.ETXKRIS.

Ericsson GmbH, Düsseldorf, Germany

TEST SPECIALISTS AS VERIFICATION SS AND BSS

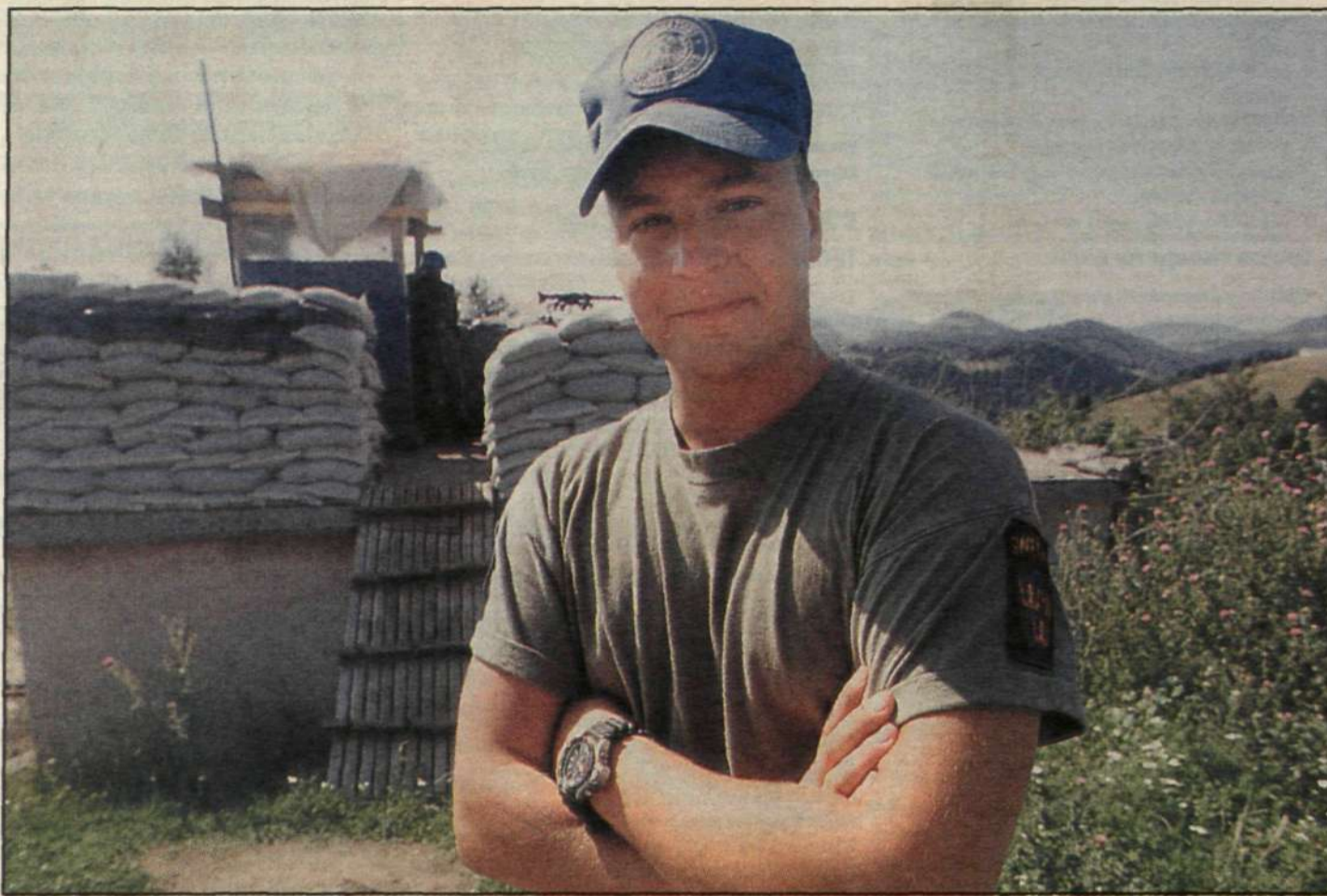
The department where you will be working is, within EDD/R, responsible for AS verification of the SS and BSS nodes in the CME20 system. This responsibility also includes the FOA. You will play a leading role in the customer projects for delivery of new system releases to Mannesmann Mobilfunk, operator of the world's largest GSM network. You will also be a key person for delivery of modification packages between the system releases. The work tasks includes - Sub project management of Acceptance and FOA projects - Be the technical coordinator in the verification group for the assigned node. - Supervise verification of modification packages. Assist with trouble shooting.

Suitable applicants should have a degree in electrical engineering, minimum 5 years of AXE experience preferably in GSM, fluent in English, spoken and written. German language is of some help. The candidate should preferably have previous experience from AS verification or similar activities.

Contact: Bertil Karlsson EDD.EDDBEKA ph + 49 211 534 2322 or Thomas Nienaber EDD.EDDTNR ph. +49 211 534 2328.

CONTACT

Ericsson, HF/LME/A, Rum 811051, S-126 25 Stockholm



Christer Merstrand's regular job is testing MiniLinks at Ericsson Radar Electronics in Borås. He is presently in Bosnia serving as a UN soldier. Photos: Håkan Ström

A guardian of peace

Christer, an Ericsson employee, is in UN service in Bosnia

In Bosnia, the Nordic countries are providing a joint UN battalion, Nordbat 2, of more than 1,000 men. This unit contains a number of Ericsson employees, including Christer Merstrand, a 24 year-old from Borås.

His regular job is at ERE in Borås, S Division, as a tester of ML 23 MiniLinks. But now he has exchanged his regular workcloths for the Army's M90 green uniform and a blue beret, serving as a guardian of peace in Bosnia.

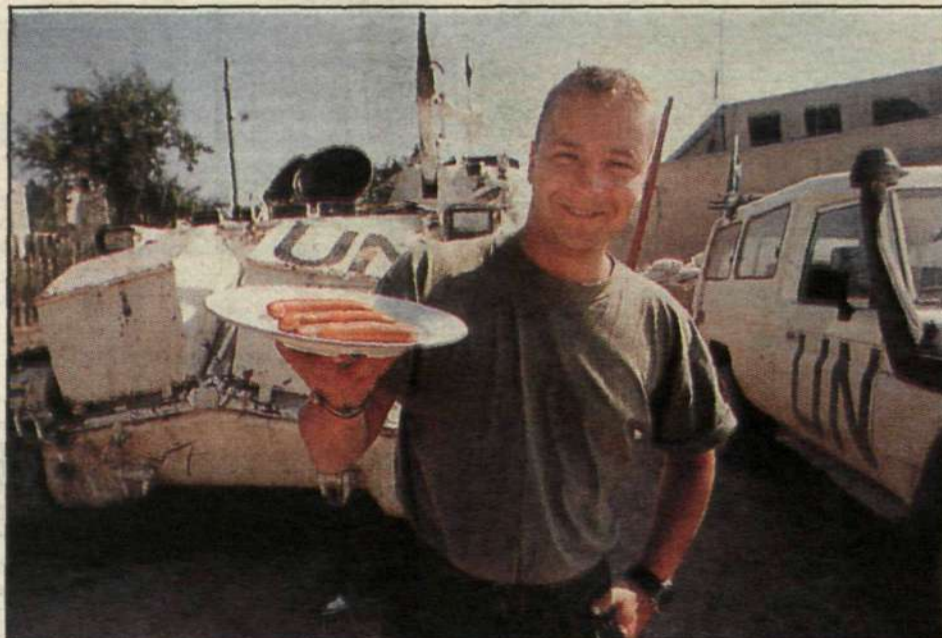
A very ticklish assignment, according to all the newspaper accounts. The opposing sides seem unable to reach an agreement, and the war continues, though fortunately at a lower level of intensity.

However, Christer believes that it is worth the sacrifice on his part to serve with the UN.

"But it would be difficult to list reasons why people join UN units," Christer relates when Contact makes his acquaintance while he is on duty at observation post Romeo Zero Nine immediately outside Dastansko, a small village in northern Bosnia.

"It's a combination of challenge, the desire to accomplish something and self-realization that made me want to serve with the UN."

Christer is an APC (armored personnel carrier) driver in Bosnia. The obvious question that is usually posed to UN soldiers is: Isn't it dangerous?



Christer sends greetings to his colleagues at Department 2778. "It will be good to get back to work and, most of all, to see my work-mates," he says.

"Dangerous and dangerous," he replies. "There is much that is dangerous back home. Crossing the street, for example. The difference is that here, we are constantly in the middle of the street."

"But this is something we have had to adapt to. Down here, we devote a lot of attention to safety, among other concerns. When we are out and moving around in the area, we always wear protective vests and helmets, and try not to expose ourselves to unnecessary dangers."

Will your UN service be something you can utilize in your regular job?

"Definitely. I have learned to associate with people on a group basis. Down here we live 24 hours a day, seven days a week,

with the same people. This is the source of much valuable experience.

"But there also other things you can learn," Christer continues. "For instance, appreciating small things that one takes for granted back home in Sweden."

Christer will have been in UN service a total of seven months when it is time to return to Sweden, Borås and the job at ERE.

"I will return sometime in the middle of October. It will be good to get back to work, and see my work-mates," says Christer who, in conclusion, cannot resist the opportunity of sending greetings to Stefan, the two Magnuses, Iso and all the others at Department 2778.

Jan-Rune Helén

END
LINE

LARS-GÖRAN HEDIN



24 hour a day
with Ericsson

There's a great deal happening in the area of technology within Ericsson these days. The new technical management organization at the corporate level that we reported on in the most recent CONTACT seems to be a prime topic of conversation throughout Ericsson. Many appreciate that much can be done to become even better at developing new technology.

A constant problem in technical development programs is that it always seems to take longer than estimated to come up with finished products. At some point along the line a company reaches the stage where, for competitive reasons, it has to tell customers what it is working on, but without being able to deliver anything.

This is a problem that all companies that deal with complicated technologies try to adjust to. This is true of Ericsson, too, but our company actually has an asset that many others lack: A highly decentralized research and development operation. Ericsson has traditionally built up strong technical expertise in its most important markets. This is something we can exploit.

I first heard the suggestion in Australia – but it has later popped up again in various places – that Ericsson should be able to organize "time-critical" development projects so that its technical centers in different time zones can work on the same project.

Picture the scenario. A team of programmers that is writing a major program is working under great pressure for eight hours in Stockholm. Then it's time to quit. (Overtime is costly and not always productive.) At 5:00 p.m. they turn the job over to a group in Dallas (where it's only 10:00 a.m.). And when this team has exhausted its brain cells for the day, it hands the project over to colleagues in Melbourne.

At eight the next morning, when the Swedes again boot up their computers, they once more find that two days of work have been completed on the project while they were away overnight!

I appreciate that it's not as easy as it sounds to implement this scenario. But why not apply R&D resources to develop a work method of this type for technical projects?