

# CONTACT

PUBLICATION FOR ERICSSON WORLDWIDE

NO. 6 • AUGUST 1995

## Anders Igel comments

Business Area Manager Anders Igel at Public Telecommunications comments in more detail on the background to the business area's concentration on core operations, already reported in the previous issue of Contact.

**7**

## Winners in improvement

Ericsson's annual competition for the best improvement project has been decided. England and Australia shared the first prize this year, in both cases with projects that involved close co-operation with customers.

**8**

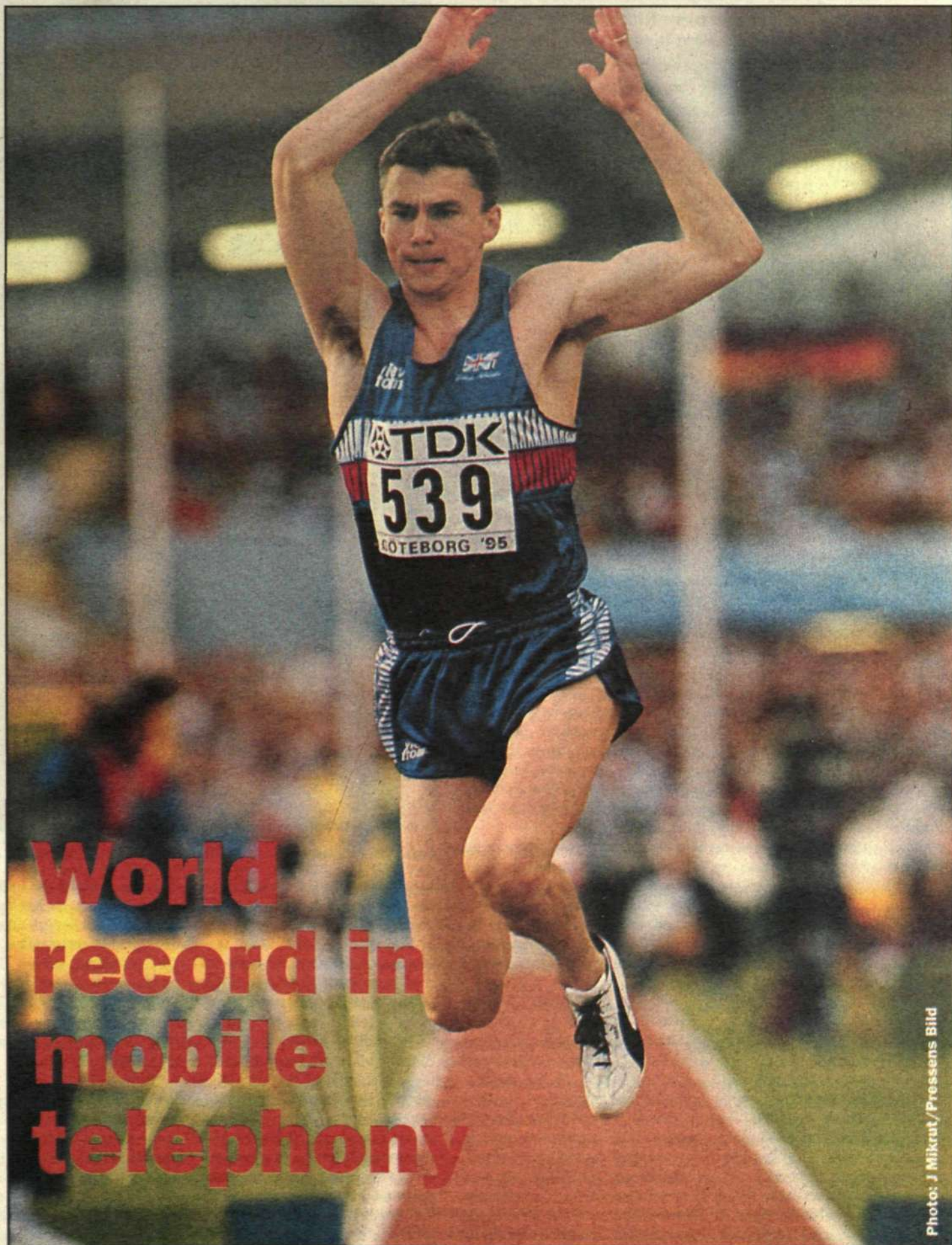
## A foot in the door

A recent AXE-order clears the way for Ericsson's continued expansion on the world's second largest telecom market

**10**

## Flying start in Croatia

After 40 years of cooperation, Ericsson and Nikola Tesla in Croatia have cemented relations and established a joint company, Ericsson Nikola Tesla. Ericsson is the first multinational company to have established a base of this type in Croatia.

**18**

## World record in mobile telephony

Jonathan Edwards of Great Britain (photo) accounted for the most remarkable world record at the World Championships in Athletics with his triple jump of 18.29 meters. Telecommunications during the World Championships represented the

greatest challenge ever faced by the Swedish telecom operator Telia. A world record was almost certainly set in the field of mobile telephony density. Approximately 250,000 mobile calls were made daily during the 10-day event.

**11**



# Positive rotation

**We can expect to see a great many removals vans operating between Ericsson's various units in the next few years. The expansion within the Radio Communications and Public Telecommunications business areas combined with the mobilization of resources around AXE and broadband are creating personnel job-rotation opportunities on a scale never previously witnessed within the Ericsson organization.**

**"The opportunities for job rotation within Ericsson is a development that we hope an increasing number of employees will exploit in future. This is needed in order to adapt our operations to the rapid changes in the market and it is also uplifting for our employees in terms of their individual development," says Ericsson CEO, Lars Ramqvist. He speaks from personal experience.**

## "New jobs lead to new opportunities" says Ramqvist.

Like everyone else within Ericsson, Lars Ramqvist has taken a delight in the successes achieved by the Group within the mobile telephony area. But parallel with these successes, demands have also increased for the Group to adapt to the completely new market situation that exists today. To a major extent, this involves moving personnel from business areas with more employees than their sales can support to the Radio Communications Business Area, which is in urgent need of additional expertise. At the same time, there is a need to redistribute resources within all our business areas.

"The picture is the same throughout the whole of our global organization. We need to reorganize our resources everywhere. During the next three years, as many as 20,000 persons could be assigned new roles within Ericsson! This is a major challenge for the company, its management and the individual employees.

"This is necessary if we are to cope with all the investments for the future that we are currently making within all business areas."

### Lack of employees

For Ericsson in Sweden the problem is that we are currently finding it difficult to find the volume of people needed by Ericsson Radio Systems in particular. Quite simply, too few telecommunications, electronics and computer engineers are being trained to cope with the demand from today's highly expansive telecommunications sector. After all, Ericsson is not alone in seeking new, highly qualified manpower.

"However, as luck would have it, we have a situation today

where we can meet a great deal of our personnel requirements within the organization. With Ericsson Telecom now concentrating its operations with Public Telecommunications to those areas in which we are strongest, valuable human resources are released. We now need to accelerate the natural job-rotation cycle, which has been a strong tradition within Ericsson for many years.

### Need to cooperate

"If we are to succeed with this major adjustment, we all need to cooperate," underlines Lars Ramqvist. "The company and its management must make sure that resources are earmarked for the development of personnel skills, at the same time as individual employees must be prepared to accept new challenges. Everyone has to lend their support."

Obviously, close cooperation between the unions and the company is a factor of major importance. Both parties must support those individuals who can become caught in the middle of such a major reorganization of job roles.

### Common goal

"Our common goal is quite clear: we must improve Ericsson's competitiveness in the international marketplace."

Ericsson's competitiveness is based on what we jointly accomplish in terms of speed, competence, flexibility and quality. Ultimately, it is the customer who decides whether we succeed in relation to our competitors. And we can be sure that our competitors are continually engaged in improving their own competitiveness!

"The new strategy for the Public Telecommunications bus-



**As in the case of most of the company's senior executives, Lars Ramqvist is a good example of the way in which job rotation works within Ericsson. "It is a natural part of our corporate culture," he says.**

ness area is an excellent example of the need to adapt to rapid changes in the market.

"It is a farsighted strategy that I am sure will strengthen our already favorable position within public telecommunications."

### Broadened views

Although it might seem the most important consideration given the present situation, changing your duties is not merely a question of saving your job with the company. In reality, it is also a way of broadening your personal horizons. It is always stimulating to change environment.

"There is no question that we have many skilled employees within Ericsson who have been unable to do themselves justice in, for example, the problem-ridden development projects currently being terminated. It is sel-

dom the fault of the individuals involved when technological or marketing challenges take on unmanageable proportions. Often, the problems derive from a whole series of factors well beyond the control of any individual — and on many occasions they result from rapid shifts in the market.

"By saying this, I would underline that those employees who find that their particular assignments are eventually to be phased out should never feel that such decisions will reflect badly on their professional careers. Instead, we intend to concentrate on the individual to determine how his, or her, skills can best be applied elsewhere within the organization," explains Lars.

"There is such an abundance of expertise in this company! For Ericsson, it is vital that such a

wealth of skills not be wasted, as we approach this major process of change. We must do everything within our power to convince our skillful colleagues to remain within the company.

### One company

"After all, it is Ericsson we all work for — not Ericsson Telecom, or Ericsson Radio Systems. If we perceive Ericsson as one corporate entity, the concept of a move from one business area to another becomes far less dramatic."

Lars Ramqvist should know. He has tested various work assignments in a number of different business areas and has seen at first hand how such experience has constantly strengthened him in his professional career. Few can doubt that.

**Lars-Göran Hedin**



# Continued strong growth

Ericsson's operations are characterized by continued strong growth. This is due mainly to the expansion of mobile telephony worldwide at a significantly more rapid pace than was foreseen in the most optimistic forecasts several years ago. At the beginning of the 1990s there were slightly more than five million mobile telephones connected to the various networks in the world, and it was thought that this figure could possibly increase tenfold by the end of the decade. However, this tenfold increase was accomplished in five years. Today there are already more than 60 million mobile telephones in use, and market analyses point instead to 300-400 million subscribers by the year 2000.

Ericsson holds a world-leading position in mobile telephony as a system supplier and, at the same time, we are increasing our market shares in the terminal area. In

## 1995 will be a good year for Ericsson

total, Ericsson's mobile telephony operations grew very strongly during the first half of the year, with an 74-percent increase in order bookings and an 44-percent rise in net sales. This is an indication of a good year for Ericsson.

Ericsson experienced its sharpest increase in order bookings in the U.S., which is our largest market, accounting for 14 percent of total order bookings and 11 percent of net sales. The predominant share of our U.S. operations is in mobile telephony, with continued expansion of the existing cellular systems as well as establishment of the new PCS (Personal Communications Services). Many operators have now made their technology choice for PCS and Ericsson has received important orders for these systems based on the well-proven TDMA technology in accordance with GSM and D-AMPS standards. Among others, McCaw, the largest mobile telephone operator in the U.S., has selected TDMA for its PCS build-up.

The selection of the CDMA technology by several PCS operators will not noticeably affect Ericsson, despite Ericsson having elected currently not to continue with the system development of CDMA in accordance with the newly adopted U.S. standard IS 95. We made this decision based on our extensive practical experience and the fact that we participated actively in the development of CDMA for several



years. We have made the assessment that CDMA IS 95 does not provide any decisive economical or technical improvements for our customers - such, for example, as higher capacity for larger systems - than what has been achieved with the already well-proven TDMA technology. Nonetheless, by having participated in the development, we have prepared ourselves to become a supplier, including a terminal supplier, when CDMA technology proves that it is commercially viable for large systems.

Our advanced CDMA development has resulted in a significant number of U.S. patents. In our opinion, several represent blocking patents within the USA IS 95 standard, whereby future users of this technology must have a license from Ericsson.

### Successes for AXE

In the Public Telecommunications business area we can note continued successes for the AXE system. As a result of price pressure and stagnating volumes we will continue our aggressive rationalization within this product area. We continue to be very optimistic about the future of AXE. In the field of broadband we are adjusting our resources to the existing market situation. In the whole, this means transfer of substantial resources and expertise to the rapidly growing Radio

Communications business area, which consequently gains increased possibilities to capitalize on its large market potential.

Business Networks has undergone an extensive rationalization program during the past year in response to price pressures on business switches and products for data communications. Marketing of the business area's new system concept for handling of voice, data and images has begun under the name Consono. Sales of the Freeset cordless business system, based on the DECT standard, have increased notably.

### High demand

Ericsson's component operations are stable, with high demand. Operations are also developing favorably within Microwave Systems, with a sharp increase in sales of radio links.

We have recruited heavily during the first six months and now have more than 80,000 employees within Ericsson. The pace of change is very rapid. We estimate that up to 20,000 employees will be transferred to new job assignments during the next two to three years. Coping with these internal transfers and new recruitment is one of our greatest challenges in the years ahead.

There is an increased need for working capital in the rapid growth phase which Ericsson is currently experiencing, and where the Board now foresees greater ex-

pansion possibilities than previously most importantly to ensure freedom of action when required to defend and further strengthen our strong market positions. This is particularly applicable within mobile telephony, as well as in other areas. The technical development investments in recent years were made possible by the strong rise in net sales, which is a result of our market successes. These efforts continue, while at the same time we see that we can focus more on our most important key areas and invest less in areas where we note that market development has not as yet really accelerated.

### New system operators

There are also a number of new system operators in the telecommunications field which, after having received licenses for new operations, not only want fast delivery of complete, turnkey systems, but also desire assistance with financing. Being able to provide financing provides new business opportunities.

It is against this background that the Board of Directors now proposes a new issue to the shareholders. With a stronger balance sheet we will be able to not only serve our existing customers even better, but also win new customers, and thus continue our aggressive, dynamic and profitable growth to the benefit of our owners.

Lars Ramqvist

# CONTACT

CONTACT is published by:  
Telefonaktiebolaget LM Ericsson  
HF/LME/DI, 126 25 STOCKHOLM  
Publisher under Swedish law: Nils Ingvar Lundin,

Corporate editor: Lars-Göran Hedin,  
phone: +46 8-719 98 68,

fax: +46 8 719 19 76, memo: LMELGH  
Editorial assistant: Pia Rehnberg,  
phone +46 8-719 78 69, memo: LMEPRG  
Distribution: Anita Wilhelmsson,  
phone +46 8-719 28 14  
Layout: Paues Media AB, phone +46 8-665 80 72  
Printing: Adargo Press, Gothenburg, 1995





# Surprise marks Grand opening

**The main floor and entry hall of D-Building at the Main Factory in Stockholm have received a total facelift following extensive rebuilding and modernization. The grand opening of the new look entry on June 26 was marked by a genuine surprise, when Mr. Bill Rappeley, Executive Vice President of Financial World, the American business magazine, presented a certificate to Lars Ramqvist naming him "CEO of the Year."**

The remodeling of D-Building was started at the beginning of the year and is scheduled for completion shortly after Telecom 95. A completely new entry hall and adjoining rooms were inaugurated in June, as well as

the completely rebuilt ground floor, conference rooms and cafeteria. When the entire project is complete, it will also include a new exhibition hall.

Upon completion of the new entry hall, D-Building and the Group Head Office will finally be accessible through an entrance directly from the street. Two receptionists in the entry hall will work in a large, spacious area featuring access to memo terminals, Internet and TV monitors broadcasting the latest Ericsson Group news.

Arne Jonsson of Ericsson Events has played a key role in the modernization project, and he can look back on a few very hectic months.

"The work in D-Building has been characterized by extremely positive cooperation between Ericsson Events and the real estate company," Arne points out. He hopes that the new premises for receiving guests and conducting internal meetings

will be used to a much greater extent than in the past.

## CEO of the Year

The new premises were inaugurated by Lars Ramqvist, who cut the yellow and blue ribbon officially opening the new entry hall. After the ribbon cutting ceremony, an unannounced guest stepped forward in the person of Mr. Bill Rappeley, who had flown from the U.S. as the representative of Financial World to present a most distinguished award to Ericsson's President and CEO.

"It is a great honor for me to present you with this certificate naming you 'CEO of the Year' by our publication," Mr. Rappeley said. In accepting the award, Lars Ramqvist quickly shared the honor for this prestigious international nomination:

"Actually, it is not me personally but rather all employees of Ericsson who should be proud of this award," he stated. **LGH**

## Mobitex enters Korean market

**Mobitex, Ericsson's mobile data communications system, has penetrated yet another market. Korea Telecom recently chose the Ericsson system, placing an order for a Mobitex system that will cover the entire Seoul region with 30 base stations.**

Similar to mobile telephone systems, Mobitex consists of a number of cells. Each cell is covered by a radio base station that transmits data and text messages from the mobile terminals. Mobitex also includes a sophisticated network supervision system that guarantees the reliability of the network.

Users of the Mobitex system today can choose among three different types of radio modems that can be connected to portable computers.

Special mobitex terminals are also available. This kind of equipment is currently in use in taxis and by large trucking companies in many countries.

## Korean company investing in EDACS

Some years ago, Korea Electric Power Corporation, the Asian nation's electric power supplier, invested in Ericsson's land-based EDACS mobile radio system to expand its internal mobile communications network. The company now plans to enter the

second phase of its network expansion and Ericsson has been awarded a contract for eight radio base stations to supplement the four stations already installed in Korea.

The Korean company's long-term plans include expansion of

the system to cover the entire capital city of Seoul and its surrounding areas and cities. Eventually, the system will be expanded to cover the entire country. Ericsson's deliveries are being made in cooperation with Samsung Electronics Co. Ltd.

## New GSM province in China

Ericsson has sold its GSM system to another province in China. The order, valued at about SEK 121 million, was placed by the Shandong Province Post and Telecommunications Administration. The first order Ericsson has ever received from Shandong Province, the contract calls for network equipment that will cover the three largest cities in the province. Shandong is China's most densely populated province with more than 80 million inhabitants.

## Guernsey orders GSM

Guernsey, one of English Channel islands, is perhaps best known as a tourist attraction and tax paradise. Guernsey Telecom recently placed an order with Ericsson for a GSM system valued at about SEK 34 m. Negotiations for the contract were handled by Ericsson Ltd., the Group's British subsidiary.

## Huge water project places order for telecom equipment

Dong Ah is a Korean consortium working on a gigantic water project in the Libyan desert. "The Great Man-Made River Project" involves the conveyance of more than two million cubic meters of water daily from underground wells in the desert to coastal areas around the capital city of Tripoli.

Ericsson recently received an order from Dong Ah for telecommunications equipment to support the project. The value of the order, SEK 740 m, is an indication of the size of the desert project. According to terms of the contract, Ericsson will plan, dimension and install a system for process control and communications. Various supervisory systems, radio transmission, cable networks and telephone exchanges are also included in the order.

## Cable-TV for Brazil

Telebahia, a Brazilian telecommunications operator, has awarded Ericsson a contract for equipment to be used in a cable TV network in the city of Salvador. The contract was won by the Group's Brazilian subsidiary and is valued at about SEK 225 million. It includes network access solutions and operational support systems. The Salvador project is Brazil's largest cable-TV project ever, and will make Telebahia the largest single supplier of cable TV in the country.

## Success continues in Australia

Ericsson's success continues in the Australian market for mobile telephony. The Group's two largest customer "down under," Telecom Australia and Vodafone, are involved in a race for mobile telephone subscribers, which is clearly reflected in Ericsson's order books.

The most recent order calls for expansion of Vodafone's GSM equipment. Valued at about SEK 312 million, the order includes radio base stations, exchange equipment, other equipment for voice message management and digital cross-connection equipment.

## Universal telephony is a reality

Ericsson and Telenor have combined forces to build the world's first complete system for Universal Personal Telecommunication (UPT). One year of successful test operations will now be followed by a commercial launch. Norwegian UPT users will be the first in the world to receive personal UPT numbers, allowing them to be reached by telephone regardless of where they are - anywhere in the world.

Ericsson delivered the system to Telenor, thereby becoming the first company with a UTP system that can be sold in all parts of the world to established and new telecom operators.

## Agreement with Telecom Finland

Ericsson and Telecom Finland have signed a general agreement covering deliveries of GSM systems and AXE equipment valued at SEK 840 million over the next three years. Equipment to increase the capacity of Telecom Finland's mobile telephone network will account for the bulk of deliveries. AXE equipment included in the order will be used in the continued digitizing of Finland's public telephone network, which is expected to be completed by year-end 1996.

## GSM deliveries to Lithuania

LM Ericsson A/S in Denmark, which handles Ericsson Group marketing efforts in Lithuania, has received an order for a GSM system valued at SEK 173 million. The system will be delivered and installed over the next three years, with the objective of connecting the first subscribers already this year. The contract represents a significant expansion of Ericsson's business activities in Lithuania.



# Ericssons halfyear- result: 3.2 billion

**Ericsson's order bookings for the first six months of 1995 increased 31 percent to SEK 52,786 m. (SEK 40,342 m. in the corresponding period in 1994). Consolidated net sales rose 18 percent to SEK 43,231 m. (36,514). Pre-tax income for the period increased 40 percent to SEK 3,215 m. (2,290), including SEK 3 m. (loss: 3) in net capital gains. After actual taxes and deferred taxes, and after full conversion, income per share was SEK 2.52 (1.67 adjusted for split), representing an increase of 51 percent.**

Order bookings continued to rise sharply, primarily in the Radio Communications business area, in which the mobile telephony terminal and systems product areas continue to grow very strongly. The business area accounted for 60 percent of order bookings and 54 percent of consolidated net sales.

The increase in Ericsson's consolidated net sales, due mainly to Radio Communications as well as to contributions from the other business areas, is attributable to many markets. The largest increases were in the U.S., Sweden, Great Britain and Australia. Ericsson's largest individual market is the U.S., followed by Sweden, Great Britain, Italy and China.

As planned, despite increased technical development efforts, mainly in mobile telephony, Ericsson's total technical development costs in relation to net sales declined somewhat.

The number of employees in Ericsson totaled 80,655 on June 30, 1995 (74,411), an 8-percent increase. Since year-end 1994, 4,511 persons were newly employed, of whom 2,363 were in Sweden. New recruitment has primarily been within Radio Communications. An extensive program was initiated toward the end of the first six months involving the transfer of personnel to Radio Communications from other Ericsson units.

## OUTLOOK

Pre-tax income will continue to develop favorably during 1995, in agreement with prior forecasts.

## BUSINESS AREAS

The RADIO COMMUNICATIONS business area increased net sales by 37 percent. The strongest increase was for mobile



Radio Communications accounted for 60 percent of order bookings and 54 percent of consolidated net sales. Anders Gryngö, Carl-Anders Sjöberg and Joe Cobbs are three among the many people who have made the GH 337 a success. Photo: Lars Åström

telephones, while telephone systems also continued to rise strongly. In total, mobile telephony was up 44 percent. The U.S. remained the business area's

most important market, followed by China, Great Britain, Australia and Germany. Order bookings rose even more strongly, with major orders booked in

the U.S. and Japan. Malaysia, Spain and the Netherlands also posted large increases. The earnings trend continued to be very strong during the second quarter.

The PUBLIC TELECOMMUNICATIONS business area's 10-percent increase in net sales was attributable mainly to China, Australia and the U.S. Order bookings rose weakly. A reorganization of the business area was initiated during the first six months with a concentration to two operating units - AXE with public switches and broadband systems. The results for the business area as a whole were again weak during the second quarter. AXE operations remain profitable with favorable development.

The BUSINESS NETWORK business area reports an increase in net sales of 2 percent. Cordless business communications posted the largest increase. Results continued to be weak. Order bookings rose sharply in all areas, due partly to the launch of the new Consono systems concept for simultaneous handling of voice, data and images.

The COMPONENTS business area increased net sales by 4 percent, despite the divestment of the Mexican cable company Latincasa. For comparable units, the increase was 17 percent. Order bookings also rose.

MICROWAVE SYSTEMS reports an increase in net sales of 18 percent. Order bookings remained favorable.

## FINANCING

Consolidated cash flow was negative, due mainly to continued inventory build-up for large future deliveries during the second half of the year and to investments in fixed assets. The equity ratio was 33.7 percent (33.1)

## NEW ISSUE PROPOSED

Against the background of the dynamic and rapid development of the tele-communications market, where the Board of Directors now foresees greater expansion possibilities than previously, the Board has decided to call an Extraordinary General Meeting to be held on September 7 in order to propose a new issue of stock, with preferential purchase rights for shareholders. The resulting infusion of new capital, amounting to approximately SEK 7,500 million, would give Ericsson greatly improved possibilities to fully utilize its technical and market position.

## CAPITAL EXPENDITURES

Ericsson's investments in property, plant and equipment amounted to SEK 2,718 m. (2,424), of which expenditures in Sweden totaled SEK 1,519 m. (1,542).

## McCaw orders TDMA for its PCS network

MaCaw Cellular Communications Inc., which is now a wholly owned subsidiary of AT&T in the U.S., has begun construction of a new digital, wireless TDMA system in the frequency field for PCS, personal telephony. Ericsson and AT&T have been named cooperation partners for the delivery of equipment for the network. Combined with the company's existing D-AMPS model TDMA system, more than 80 percent of the American population will be served by McCaw's mobile network. In its first phase, McCaw will test Ericsson's PCS equipment in Atlanta, Georgia and AT&T's equipment in Chicago, Illinois. Market introduction of commercial services will follow the tests and continued systems development.

According to the terms of the agreement, AT&T Network Systems and Ericsson will share deliveries of equipment valued at approximately SEK 3.2 billion during the years immediately ahead. Distribution of orders between the two companies has not yet been decided.

## Major contract from Mercury

Ericsson has been contracted to help Mercury-One-2-One in Great Britain expand its personal telephone network, called PCN (Personal Communications Network) in England. The contract is valued at GBP 235 million. Combined with orders for ongoing work to expand and supplement the network, as well as orders for PH337 mobile telephones, Ericsson's transactions with Mercury amount to nearly SEK 4 billion.

Mercury's PCN network is based on the DCS 1800 PCN standard, which is included among Ericsson's products for personal telephony. The portable telephones that Mercury has ordered are a variation of the Group's successful, small telephone, which is also available in several other standard models.

## Expanded order from Japan

Central Japan Digital Phone plans to expand its digital mobile telephone network in Nagoya. Ericsson has received an order for exchange equipment, radio base stations and other equipment valued at SEK 655 million. Deliveries of equipment are already under way.

## INTERIM REPORT

### Six months ended June 30, 1995

Order bookings	SEK 52,786 m.	+31 percent
Net sales	SEK 43,231 m.	+18 percent
Pre-tax income	SEK 3,215 m.	+40 percent
Income per share	SEK 2.52	+51 percent

New issue, amounting to about SEK 7,500 m., proposed



# Technical documentation acquires higher status



About one hundred delegates attended Ericsson's international Docware conference, held recently at Högbo Bruk, in Sweden.

**Ericsson's first Docware conference was held at Högbo Bruk, in Gästrikland, central Sweden, with its echoes of the successful Bessemer era.**

**The conference brought together more than one hundred participants, who listened to about 10 presentations.**

In his opening address, Jorma Moberg asserted that we should now see Docware as a close relative of software and understand the strategic challenges facing us. Moberg also examined the wider perspective, focusing especially on the driving forces in the software arena.

Corporate management has called for a special report on this area as part of the annual strategic planning process (ESP).

The conference was organized by Lars-Olof Lindgren, who works for Ericsson Telecom's documentation unit in Sättra, in the southern outskirts of Stockholm. The detailed arrangements were handled by Pär Karlsson, ETX, Stefan Hasselgren, ECS, and Marit Johansson, ERA.

## New status

Göran Ramfors said in his address that technical information had acquired a completely new status. Instead of being regarded as a necessary evil, it is now viewed as an essential and integrated element in the technical application process.

The reason for this change is the development of increasingly complex technical systems, which have in turn created new problems for those involved in technical documentation.

While the amount of information is increasing exponentially, our capacity to absorb information is essentially constant. We can only read a given number of characters per second, yet the volume of documentation is

## One hundred attended Docware conference

growing dramatically. Hence the importance of precisely analyzing and specifying who needs what information in order to perform what action, when and – above all – how!

This also explains the importance of structuring our information environment in such a way that it is simple for us to find exactly what we are looking for, and why, when we find it, it must be in a form that we can easily understand and act upon.

The information must be presented concisely and effectively, as well as being available in the right medium, readily accessible and easily updated.

## Money to be earned

Göran Ramfors also asserted that an enormous amount of money can be saved by rationalizing the ways in which information is produced and handled. By standardizing handling and establishing set routines, savings in both time and money can be made, while at the same time increasing reuse of information and enhancing information exchange.

It is equally important to ensure that the available information-handling technology is being used. This includes optical storage disks, computers to control information production, hyperlinks which can gather and compile data, graphic presentation systems, sound, video and moving images.

Most important of all, however, is to keep in mind that the product is information, the qual-



Three cheerful organizers stand in front of the old mill at Högbo Bruk in Gästrikland. From left, Pär Karlsson, Marit Johansson and Stefan Hasselgren. Photos: Bernd Büttner

ity and presentation of which are crucial. High-quality information can be produced only if the prerequisites are observed.

## Comprehension

In his presentation, Rune Pettersson of Ericsson Telecom considered issues relating to our ability to comprehend and absorb information.

He has been conducting research in this area for a number of years and holds a professorship in Infology, the study of how information is presented, in the U.S.

In Rune's view, the essential point about information is the actual principle of information transfer. We need to understand that information transfer is nothing other than a link between sender and receiver. If the message is incomprehensible to the receiver, there is no point in sending it.

It is also important for the

sender to know exactly who the receiver is, what language the receiver understands, what symbols he or she comprehends, what his or her age, group affiliation, and social background are, and what standards and values are applicable.

Only if he is armed with this knowledge can the sender make the information comprehensible to the receiver.

## Anglo-Saxon

In Rune Pettersson's view, Anglo-Saxon attitudes reign supreme in the world of information transfer. He believes this can be harmful in the long run.

If a customer does not understand the technical information provided, the results can be extremely costly for the supplier, who, in the worst case, must dispatch people all over the world to explain to customers what the incomprehensible information actually means.

At this juncture, Ericsson is on the threshold of what Gunbritt Jonsson, in her presentation, referred to as a "paradigm shift," that is, an entirely new way of thinking.

## Graphics central

Up to now, our information has consisted of text supported to a certain degree by graphics. It is conceivable that in the future the graphics will be at the center, with the text merely fulfilling a supporting role.

Such a development is made all the more probable by the fact that people have a far greater capacity to comprehend images than text.

The tools we need are already available today, so it is just a question of choosing the best approach. At present, we are only at the threshold of the information environment that is now coming into being.

Lars Erik Wretblad



Major changes are under way in the Public Telecommunications Business Area. Many people are concerned about how their work situation will be affected by the business area's decision to concentrate on its core operations.

"We are aware of the concern, and regret that we cannot immediately answer all the questions, but we must continue working together to implement our strategy," says Business Area Manager Anders Igel. "One task is to identify resources that could be transferred to the Radio Communications Business Area."

# Together we shall find the solutions

"We are currently facing a difficult situation in the Public Telecommunications Business Area. The fierce competition in the market compels us to take vigorous action to strengthen our positions. The concentration of resources we have initiated will also serve to improve the business area's profitability, which is essential if we are to successfully handle the enormous investment now being made in AXE and broadband."

Business Area Manager Anders Igel looks serious as he comments in more detail on the background to the business area's concentration on core operations, already reported in the previous issue of Contact.

## Information gap

"One of our main problems is that we have more employees than we need – both within and outside Sweden," continues Igel. "This is an important message that we are trying to get across in various contexts and which naturally makes people uneasy about their future at Ericsson."

"But now we have reached the point where we must close the information gap that has existed within our organization during the past few months," emphasizes Igel. "It is never healthy for a business to allow its personnel to be plagued by uncertainty about the future, but we were obliged to take enough time to clarify our future strategy and how to plan and implement it. Now the strategy is clear and we know what course of action we want to pursue. While we are working actively to satisfy the existing need for information, I am aware that the picture is still not entirely clear. I can understand that this continues to be a cause of concern to many employees."

## Dilemma

"Now it is time to implement our strategies," continues Igel. "But we face the dilemma that we cannot gauge the impact of the required changes at the level of the individual until detailed plans have been made." Anders Igel and his management colleagues are doing everything in their power to resolve the dilemma as soon as possible.

"We have to work together with our colleagues to find solu-



"Now that we are about to implement our future strategy, all of us in the Public Telecommunications Business Area must work together to formulate detailed plans for our future operations," says Anders Igel.

**Nobody need to be concerned today about the concentration of resources to AXE and broadband.**

tions, and the process cannot be rushed," he continues. "Unfortunately, we are not yet in a position to reassure each individual employee who is afraid of how he or she could be affected by the coming changes. I want to emphasize once again that we must seek the solutions together. This is not a task for management alone, but must involve all employees. We have already sought the cooperation of our trade union organizations, for example, since they also have an important role to play in this process."

## All options explored

"Another reason why we must proceed carefully is that we need to review every conceivable option in our efforts to find the most workable and acceptable way of handling the problem of

excess resources in the business area," underscores Igel. "The good news as we face this difficult situation is that, as far as we can judge at present, the recruitment needs of the Radio Communications business area are more than enough to absorb our excess resources."

"These changes give us a unique opportunity that we must take advantage of, but they also mean we must develop a clear picture of how our own resources compare with the needs of Radio Communications. We must also find ways of compensating for any competence vacuum that may arise."

"It goes without saying that at the same time we are doing everything possible to eliminate overmanning in our own business area. Some of our own operations also need additional resources to enable us to implement our aggressive strategies for the future."

Lars Wiklund, personnel manager in the Public Telecommunications Business Area, takes a highly positive view of

the cooperation already established with Radio Communications.

"We are setting up working groups to find a practical way of utilizing the opportunities for transferring personnel from Ericsson Telecom to Ericsson Radio," explains Wiklund.

"There is a very strong willingness to cooperate among all those involved. I want to strongly emphasize the shared responsibility of the company and its employees."

## World leader

"Let me underscore once again that there is no need for anyone to worry about their own situation just at the moment," says Lars Wiklund. "It will be a while before we can finally decide exactly what resources we can make available to Radio Communications or shall need to reassign within our own operations, and hence which employees we shall be helping to rotate within Ericsson."

Anders Igel again emphasizes the positive aspect of the task being undertaken by the business area: "We must see all the chan-



"There is no need for anyone to worry about their job situation just at the moment," says Lars Wiklund, personnel manager.

ges that are about to happen in the light of the major concentration of resources we are currently engaged in. Of course it is a positive factor that we have such great potential to become even more competitive in our core business areas!

"We shall become a world leader not only in narrowband systems, but also in broadband systems over the long term," concludes Anders Igel on an optimistic note. **Lars-Göran Hedin**



# Masters at being better

Prizes for projects in the 1994 "Best Improvement within Ericsson" competition were awarded in mid-June. This year, Ericsson Australia won the award for major improvement projects, while Ericsson Ltd. in the U.K. was the winner for minor improvement projects.

The two winners were selected in fierce competition among ten finalists. The judges, led by Håkan Jansson, faced a difficult task in selecting winners among the strong contestants.

This was the third consecutive year for the "Best Improvement within Ericsson" competition. As has been the case in previous years, the ten finalists, five in the category major improvement projects and five in a category for projects on a smaller scale, constituted a highly international group. Eight different Ericsson companies from all corners of the world were represented among the finalists.

## Australia and England win TQM prize

As usual, the contest was both close and exciting. During the finals on June 13 and 14 on the island of Lidingö outside Stockholm, the ten finalists gave professional presentations of their entries. Being selected as a finalist is in itself an honor and proof of significant progress in TQM (Total Quality Management) work.

### Changing culture

The jury's motivation for selecting Ericsson Australia as the winner in the most prestigious category reflects current trends. "This is a breakthrough both within the company and with respect to changing the relationship with customers." The winning project, which at the conference was presented by Roger Börjesson and Adrian Cropley, bore the ambitious title "World Best Practice Improvement Project." The project, which started in the beginning of 1993 and continued until May 1994, was devoted to improving upgrades of installed telephone stations.

A total of 89 persons were involved in the project, which was conducted in close collaboration with the customer, Telecom Australia. Some 52 upgrades were performed during the project period. The project resulted in a reduction of system downtime from 50 to 6.75 minutes per switching station and year!

In addition to this remarkable improvement, the project contributed significantly to Ericsson being selected at the end of 1993 as one of Telecom Australia's strategic partners. The 118,000 manhours invested in the project thus proved to be a sound investment.

### Remote upgrades

This year's other winning project, entitled "Remote Loading of Software," was also a collaborative effort with the customer, which was BT in the U.K. Presenters John Bancroft and Mike Snowling described how the project introduced new methods that dramatically reduced downtime during upgrades. A station with 38,000 lines



Best in the class for large improvement projects was Ericsson Australia with its "World Best Practice Improvement Project." Håkan Jansson, VP Technology at Ericsson, and Ericsson Australia Managing Director Kjell Sorme, left, are just as pleased as Roger Börjesson



Ericsson Ltd in England was awarded a prize for a project involving remote loading of software for AXE stations. The prize was accepted by John Bancroft and Mike Snowling.

in Edinburgh served as a test case in the British project. By handling 95 percent of the upgrade procedure with an automated

routine, downtime was limited to 3 minutes. The upgrade was performed via a data line from Ericsson's U.K. headquarters at

Burgess Hill using routines developed as part of the project.

"This is an extremely well-structured and business-oriented improvement project that represents a breakthrough in increasing efficiency as well as improving customer satisfaction," was the jury's evaluation of this project.

### Close to customer

Moving closer to the customer is a trend clearly evident in improvement projects throughout Ericsson. While "Focus on the Customer" is a key concept in TQM, many Ericsson improvement projects have gone even further by involving customers directly. In Australia and the Netherlands, for example, this form of cooperation between customer and supplier has become the norm.

### Everybody is a winner

Speaking at the prize ceremony, Håkan Jansson emphasized that the judges were deeply impressed by the improvements achieved by the finalists.

"All ten finalists are winners," proclaimed Håkan, who recommends that all



and Adrian Cropley, the two who presented the project during the final.

Ericsson companies study and learn from all ten projects represented in the finals.

"This is one of the most important objectives of this competition," explains Silvano Beghetti, who was recently appointed as corporate responsible for all TQM efforts at Ericsson. Silvano was extremely pleased with the competition as well as the conference for TQM champions and Quality managers which was held in conjunction with the awards.

### Entries welcome

Rune Östling, who works with Silvano in the corporate function Technology, handled the practical arrangements during the competition and the awards. Rune welcomes all entries and encourages every Ericsson company to enter next year's competition.

"Those interested in the competition can contact their local TQM champion. He or she has already received an invitation to the competition and can provide details on the evaluation criteria used in this important competition."

Lars-Göran Hedén  
Photos: Peter Nordahl

## TQM champions formulated their vision of 'Excellence for year 2000'

More than fifty quality managers and TQM champions from all parts of Ericsson gathered at Lidingö in the middle of May. They came together to formulate their vision of "Excellence for the year 2000" as part of the program of reviewing the Company's strategy that is now under way.

Their vision was presented for senior Ericsson managers in connection with the finals of the competition to determine the best improvement project in 1994.

In the vision that the TQM leaders adopted, it is clear that there are four areas of greatest importance for Ericsson's success in the year 2000 and the years beyond. These four areas are:

- Customer and supplier relations
- Internal Communication
- Leadership & Employee Commitment
- Measurements and Best Practice spreading

The importance of effective internal communications pertaining to these matters was underscored repeatedly by Silvano Beghetti, responsible for TQM within the corporate Technology function. Accordingly, a committee project was undertaken to produce an article on the vision for CONTACT. Here is the result of this practice.

### Customer relations:

#### We have to listen better!

Svante Axelsson, Telia's purchasing manager, participated in the seminar. He said there is a feeling that Ericsson does not listen closely enough to customers and that it is not fully aware of how the market is changing.

Operators today need the help of a number of strategic suppliers in order to anticipate their future requirements. The manner in which Ericsson companies, in "partnership" with customers, is attempting to fill this new role was discussed during the TQM seminar. It was agreed that a great deal of energy is required on both sides and that these efforts must be limited to impertinent partners. Ericsson has to accept the fact that such partnerships may sometimes also include its competitors.

In the committee discussions, it was agreed that Ericsson has to focus attention on these areas:

- Software. In this area, we have to find answers to all remaining questions very rapidly.
- All 75,000 employees have to focus on the needs of outside customers and on relations with them.
- The business areas have to be even more involved in understanding the needs of outside customers and meeting them.
- We have to be faster in getting new products and systems ready for marketing and delivery to customers.
- People in all sectors of Ericsson have to listen "actively" to what customers have to say.
- We have to establish regular and active communications programs to all audiences.
- Future partnerships must be "win-win" propositions – Ericsson and the cus-

tomers must both benefit – with shared risks and gains.

### Internal communications:

#### Make the most of our opportunities!

It's all about communications between people – the rest is technology. Ericsson has helped to build the world's largest machine – the international telecommunications network – but we have not been the best in the world in taking advantage of the potentials we have helped to create.

In the organization of the future, "knowledge" will clearly be the key factor. Communications must therefore take place in all directions – from the top downward, from the bottom up, and from left to right.

We shouldn't wait for information to come to us. Instead, we should obtain it by actively seeking it. Each one of us is responsible for making information available to others, whoever and wherever they may be.

All media must be used. We recommend that our colleagues use the Ericsson World Wide Web and the Internet if they have access to them. But we also have to use traditional media.

### Internal suppliers:

#### Higher requirements!

Internal deliveries can be a major weapon in the battle with competitors. Without high standards for internal deliveries, we cannot maintain high standards of quality in deliveries to customers.

To improve our performance in this area and achieve true world-class results, we have to find new ways to effect rapid changes, and new means of controlling this process in our commercial operations, focusing on three elements:

- Partnership: Internally, there is a tendency to be "complacent" and excuse errors on the part of coworkers. So we have to find ways to share risks and praise, to agree on common standards and to exchange successful experience throughout Ericsson.

● Process Management: We have to manage our processes more effectively by defining them more precisely and introducing them in a clearer manner. Clearer interfaces between different processes and units are also needed.

- Support for changes: We have to develop this support by creating resources with clear responsibility for implementing the changes that are needed.

We have to impose higher demands on internal suppliers than on outside suppliers. Otherwise Ericsson will not be able to be successful in the new global arena.

### External Supplier relations:

#### Profit from costs!

When we consider our business, we realize that we, at Ericsson, are one of the links in the value added chain from our suppliers to our customers and end users. We must realize that our profit comes not only from our sales and revenues, but also, from our costs, as well. In this chain to our customers, our suppliers costs 50 per-

cent of our costs of sales. Clearly, we should be as concerned with our suppliers, from a cost perspective, as much as we are focussed on our customers.

We should, therefore, strive to involve our suppliers in our processes for both their expertise and in finding common solutions. We should work to form relationships based on mutual respect, professionalism, and involvement in our business – the same way that we, at Ericsson should be involved with our customers in providing solutions and sharing their successes.

Let us strengthen the chain by achieving a common maturity level and involve our supplier's support for our mutual, and end-user's benefits.

### Measurements:

#### Evaluate correctly - and in the same way!

Common methods of measurement are needed. We are already carrying out many evaluations; some are standardized, others are not.

The most important thing in terms of Total Quality Management is to share the results of evaluations in order to be able to identify good performance, initiate benchmarking procedures and take other similar steps – all with a view to effecting improvements.

It is important for the entire organization to be able to perceive that management is strongly involved in following up the "Management Audits" that are to be conducted in all sectors of operations. Such follow-up is required in order to keep the spirit of change alive in each unit. Common definitions, which must be standardized, are also required for certain vital measurements.

### Best Practice:

#### Share the wealth!

In order to succeed in reaching up to the vision of "Excellence in the year 2000" it is important that we begin to share our experience within Ericsson to a much greater degree than in the past. This involves disseminating knowledge of "Best Practice." Ericsson now has an effective tool for this – "the seven tracks model."

Teams have now been developed that will pilot four of these seven tracks, visiting Ericsson companies throughout the world that have been more successful than others in the areas involved. The four "tracks" that are now ready cover the following areas:

- Time-to-market (with Haijo Pietersma as leader).
- Time-to-customer (Raimo Lindgren).
- Human resources (Jan Michael von Schantz).
- Marketing and customer relations (Kaj Juul Pedersen).

It is now up to each company to begin to share its experience in these areas by requesting a visit from one of the teams for a "peer review." These visits are being arranged through Silvano Beghetti.

The examples of "Best Practice" that are identified will be presented in the Internet under the following address: [HTTP://lmeq.lme.ericsson.se](http://lmeq.lme.ericsson.se).

Edited by Lars-Göran Hedén



# Telia's first ATM network inaugurated



"The need of communication is virtually infinite," commented Lars Berg when introducing Telia's Vision 2000 for outgoing Board Chairman Thorbjörn Fälldin and program host Lydia Capolicchio and a multitude of interested spectators. Foto: Thord Andersson

**Telia (Swedish Telecom) inaugurated its first commercial ATM network for high-speed communication and multimedia with a video conference between Malmö, Gothenburg and Stockholm, transmitted over its own new ATM network, Telia City Services.**

Telia's CEO, Lars Berg, was at the Telia Mobitel office in Haninge with outgoing Board Chairman Thorbjörn Fälldin. Sweden's Communications Minister, Ines Uusmann, with many international guests in Malmö, was in charge of the

"We are today inaugurating an electronic highway without exhaust emissions, noise or traffic-jams," said Ines Uusmann. "I can unreservedly encourage you all to proceed at top speed!"

"We will be the company that leads Sweden into the new era," commented Lars Berg. "Telia City Services will both increase the competitiveness of our customers and contribute to a high IT level within Sweden's business community."

Ericsson Business Networks contributed to this undertaking by providing expertise and delivering ATM switches, in cooperation with American General Data Com (GDC).

## Metropolitan areas first

Initially, Telia City Services will serve Stockholm, Gothenburg and Malmö.

These services, and the network, are based on optic-fiber and ATM technology, and have the capability of transmitting very large volumes of voice, images, text and data. Telia City Services will also provide subscribers with virtually 100-percent accessibility and reliability, and the option of buying only the capacity needed on any given occasion.

## Linked together

Technically, Telia City Services is the means whereby several fiber-optic urban networks are linked together, while making intra-network-rapidity available with aid of certain new broadband services. Subscribers can obtain capacity as high as 155 Mbit per second. This is sufficient for even the most demanding transmissions, for example, "video on demand."

## High service level

The new subscriber applications will require higher service levels and broader bandwidths. The need for the network to accommodate many different types of traffic will increase, with a rising demand for higher quality transmission of images, voice, text and data, Telia points out.

Telia will expand the network in pace with demand.

"In addition to capacity, the service concept is the heart of Telia City Services, that is, accessibility and reliability. It encompasses nothing less than 99.99 percent service quality," commented Telia's project leader, Ulf Olofsson.

Thus an important point is that customers can now buy the right capacity, that is, just the amount they need. Earlier, sub-



Real-time communication via high-resolution giant screens between Stockholm, Gothenburg and Malmö was a feature of the inauguration of Telia's new ATM network.

scribers had to buy capacity in accordance with maximum requirements, or be content with slower transmission at night.

## For large requirements

Telia City Services is designed for customers who occasionally have very large network capacity requirements and where maximum accessibility and reliability are important for business operations. This applies, for example, within the financial market, or in areas where it is desirable to work interactively with maximum quality, such as design, education and health care. Telia anticipates that the new services and ATM technology will eventually gain wider acceptance.

Thord Andersson

## Expansion in Japan

Mobile telephone systems are expanding at a furious pace in Japan. Operators are stretched to the limit as they strive to expand capacity to meet the demand. This was the background to yet another extension order received by Ericsson from one of its Japanese partners, Tokyo Digital Phone (TDP). The order encompasses switch equipment, radio base stations and new software functions to a total value of SEK 1 billion.

The new equipment will serve to increase the number of radio channels available in the networks and to extend coverage to new areas. One of these is Nagano, where the Winter Olympics will be held in 1998. When the work covered by the new order is complete, TDP's network will cover 87 percent of the population of the Kanto region, which includes the major cities of Tokyo, Kanagawa and Yokohama.

## Moldova joins the list of AXE countries

Moldova is a new market for AXE. Moldtelecom, the national operator, has placed a comprehensive order with Ericsson to modernize the entire national network. The first phase involves installation of AXE stations to handle 20,000 lines in the capital city, Chisinau.

The contract was secured for Ericsson by its Italian subsidiary, Ericsson Telekomunicazione, working in cooperation with Intracom, Ericsson's Greek license-holder. The contract is equally divided between the two companies. The AXE stations in Chisinau are scheduled to go into operation before the end of the year.

## GSM network for Vietnam

Ericsson continues to be a major supplier of mobile telephones to Vietnam. During the recent state visit to Sweden by the Vietnamese leader, a framework agreement was signed for delivery of GSM equipment worth SEK 220 million. The equipment will be supplied to Vietnam Mobile Telecom Services Company (VMS), which plans to install a nationwide GSM network in a joint venture with Comvik International AB.

Earlier this year, VMS/Comvik was awarded the license to install and operate Vietnam's first nationwide digital mobile telephone network. Analog mobile networks exist at present in Hanoi and Ho Chi Min City. These networks currently have a total of 6,000 subscribers, but the number is expected to increase to about 20,000 by the end of this year.

## Position in Panama strengthens

Panama is one of Ericsson's Latin American strongholds, with AXE accounting for as much as 80 percent of the market. This already strong position will be further strengthened by a new contract with the operator Intel Panama. The contract, worth SEK 265 million, covers planning work and expansion of Panama's public telephone network.

The contract includes AXE, transmission and power supply equipment, as well as a billing system. Ericsson will also supply the software and equipment for the introduction of ISDN in Intel-Panama's network. Delivery of the AXEs is scheduled to start in September and be completed by next summer.

Both production and installation will be carried out by Ericsson's Mexican subsidiary, Teleindustria Ericsson S.A. de C.V. ■





The sun shined bright over Ullevi Stadium during the ten days of the World Championships in Gothenburg, which was the world's densest mobile telephone city during the games. Each day about 250,000 cordless telephone calls were made through the GSM and NMT mobile network. Photo: Thord Andersson

# World class telecom

**The new grandstand at Nya Ullevi, site of the 1995 World Championships in Athletics in Gothenburg is the largest sports arena in the Nordic countries. Here 45,000 people watched the recently completed World Championships, the largest event of its kind ever staged in Sweden.**

**And telecommunications were crucial to the success of the event. Telia, the Official Telecom Operator, was responsible for all telecom operations, with Ericsson as its backer and main supplier.**

During the 10-day World Championships in Athletics, more than half a million people visited the city of Gothenburg, which pulled off its "baptism by fire" with honors.

The telecommunications network was gigantic – by far the largest single communications project ever managed by Telia. Prior to the "games", Telia invested approximately SEK 40 million, of which SEK 25 million was earmarked for expansion of the fixed telecommunications network, not including the temporary network installed at Ullevi. Telia invested the remaining SEK 15 million in mobile telephone traffic. The area surrounding Ullevi Stadium became the most dense mobile telephony traffic area in the world.

## 200 kilometers of cable

The telecom network offered every imaginable service for more than half a million people during the course of the 10 highly intensive days of competition. According to Telia, about xxx,xxx telephone calls were connected during the games. In the days leading up to the opening ceremonies, as many as 300 Telia employees worked daily to install equipment and prepare for every possible contingency. More than 200 kilometers of cable, for example,

were drawn for World Championship traffic alone.

## No big problems

The World Championship's switch served telecom traffic for the administration center and 14 different subcommittees under the Local Organizing Committee (LOC). These facilities alone required approximately 500 MD110 lines to cover health-care services, transportation, computer services, mass media and other basic needs.

The system was totally reliant, with overcapacity for unexpected extra requirements, dual lines and a reserve switch –

## WORLD RECORD ON PHONE CALLS

Mobile telephone use broke all records during the World Championships in Gothenburg.

Each day about 250,000 telephone calls were made from GSM and NMT mobile phones within the World Championship area in central Gothenburg. A peak was recorded on Monday, August 7, when 24,000 calls were forwarded through Telia's mobile network between 4 to 5 p.m.

"Mobile telephones were used to an exceptionally high degree in the

just in case! It was gratifying to note that no major problems or incidents arose. Minor malfunctions that occurred were corrected quickly.

## DECT revolutionary

People talking on small cellular Freetel telephones based on the DECT standard was one of the most common sights during the World Championships. Developed by Ericsson in the Netherlands, the system was instrumental in contributing to facilitating the job at hand during the games. The Freetel telephones were connected to the gigantic World Championships switch and were used primarily in Ullevi IBC (the heart of all international TV and radio companies), the Press Center, Ullevi's World Championships Office and in the Sponsors Village. The Swedish Broadcasting Corporation actually specified the DECT technology in order to guarantee uninterrupted transmissions.

The Freetel telephones are able to handle more than one day's calls without charging the batteries, and they provide

perfect sound without any disturbances, even under difficult conditions.

The selection of Telia as the telecom operator for the games in Gothenburg was not as self-evident as one might think. Lars Berg, President of Telia, points out that Telia was awarded the contract in a deregulated telecom market characterized by tough competition. Mr. Berg explains that it was important for Telia to show its capabilities in a large international event. Telia's performance in Gothenburg has strengthened its solid reputation outside Sweden and should facilitate efforts to cultivate new international customers.

Telia was also a main sponsor for the World Championships, contributing more than SEK 7 million to the games.

## Other projects

Now that the games are over, the task of dismantling the temporary network are in full swing. Some of the installed materials will remain in place to strengthen Gothenburg's infrastructure. Other switches used at the games are being installed in different parts of Sweden. Most equipment was sold in advance, but some marketing efforts remain.

The MD110 that served the Press Center in the Katrinelund School adjacent to Ullevi will remain there. Gothenburg's Educational Administration Board bought the equipment and plans to adapt it to existing equipment belonging to the school system. And no time is being wasted. At the end of August, a training program was started in Gothenburg for 1,000 Bosnian women refugees who will eventually become nurses.

Thord Andersson





Above: Telia installed more than 200 kilometers of cable in the Ullevi Stadium area alone for World Championship traffic. Telia installer Toni Spets is shown working at one of the temporary cross-coupling modules.



Left: The new Freeset telephones were used heavily by the World Championship organizing staff, international TV and radio networks, the press center, companies in the sponsor village and Telia's service personnel.

Below: Each day between 6 a.m. and 11 p.m. six telephone operators were constantly available to handle 35,000 calls. Agnes Hellman in the foreground is shown with Britt Sundström and Ola Leander.



The largest sports stadium in the Nordic region, with seating for 45,000 was filled to capacity virtually at all times during the World Championships. The base stations for the Freeset system were mounted around the stadium. The women's 5,000 meter race is under way in this view of the arena.



A satisfied telecom general. Per-Olof Hallberg at Telia Western Region carried total responsibility for all of the enormous telecommunications efforts during the World Championships.



The World Championship exchanges were secure in the hands of Lars Cederquist, shown inspecting one of the ten MD110 LIMs which comprised the net group of 1,500 connections, which in turn were connected to the AXE network.

# System based on reliability, reliability and more reliability

**The World Championships in Athletics was a gigantic arrangement that placed very high demands on telephone and data communications.**

**The solution, developed by Telia (the Swedish National Telecom Authority) and Ericsson, was based on functional reliability and more functional reliability. Quite simply, there could be no hitches in the system, or as Telia's on-site manager Per-Olof Hallberg said, "I don't care who wins which race, as long as the communications system functions perfectly."**

Five outdoor base stations for Freeset were mounted high up around Ullevi's arched grandstands. Another base station was set up in the wooded area outside Mercedes Benz' two-story tent in the sponsors village. Cranes were used to mount another 18 base stations on the gables of buildings that housed the athletes in the World Champ-

ionship Village. The press box linked more than 700 journalists via direct lines to their head offices in all parts of the world. The entire area surrounding Ullevi Stadium was covered with telecommunications equipment and the byword was "it may not fail, no malfunctions allowed!"

For this reason, a reliable solution was chosen based on tried and tested technologies. Freeset was just one component in the total system, albeit with their new, small (130 grams) and very elegant pocket handsets. The system was based on a powerful World Championship exchange (AXE and MD110) that handled all voice and data traffic in the area, while also serving the governing committee for the games, the media, officials, transportation services, health care and other service functions.

**Invulnerable**

There are no tailor-made solutions for an event as large as the recently completed World Championships in Athletics. Naturally, experience was drawn from similar events held recently in the region. But it still wasn't easy to dimension the network. Questions arose, for example, concerning

the amount of voice traffic between different groups around the World Championships Village.

To achieve maximum reliability, the final choice for the World Championships telecom exchange combined public telephony with subscriber switches in a network group. The alternatives would have been a large switch or several small switches in a network group. A large switch is easier to manage but is more vulnerable. The switches in a network group, however, comprise separate and independent units while communicating in unison as a single switch. If there is a tie-up in one, the communications traffic finds another route.

**Several switches**

Three existing AXE switches were used for the games. The switches normally handle relatively heavy traffic during the daytime, but provided favorable overcapacity, especially late in the afternoon, i.e., just when the finals started. A network group was connected to the AXE switches, consisting of 10 Line Interface Modules (LIMs), which are modules in the MD110 switch for transmission of voice and low-speed data traffic.

The system reached about 1,500 extensions designed for communications in and around Ullevi Stadium.

Extensions were distributed through the entire area (Ullevi, the Press Center, the Athletes Village, etc.) via six MD switches equipped with one or two LIMs and remote AXE facilities for direct connections. The latter were intended for the approximately 700 journalists in the press corps, all of whom were also supplied with telephones. (Remote subscriber stages may be likened to small local stations that will continue to function on a limited basis even if communications with the parent station should be interrupted. The eventuality of this risk was also eliminated by connecting the network to three AXE switches.)

**GSM record**

For mobile telephony, Telia Mobilitel reinforced its GSM network with new base stations that increased capacity by a factor of six. Capacity was increased from the former level of 5,000 to 30,000 subscribers.

According to Telia's estimates, the network is now the densest mobile telephone network in the world. Its present density

would make it difficult to expand it any further. And the network was certainly needed when both Swedes and foreigners came to Gothenburg with their GSM telephones. The NMT network was also strengthened with new radio base stations.

**Freeset impressive**

Many members of the World Championships committee were doubtful at first about capabilities of the Freeset system, with cellular telephones connected to a private branch switch. But that was before they saw the new Freeset telephones in action, and they quickly changed their minds.

For the World Championships in Gothenburg, 54 radio base stations were installed in and around the stadium and village to serve approximately 500 users. The telephones were linked to the MD switch and could be used anywhere in the area for which they were programmed. Theoretically, all 500 telephones could have been programmed for use within all six zones but, for practical purposes, they were restricted for use within a certain switch zone, for example at Ullevi Stadium or the Sponsors Village.

Typical users of the Freeset telephones were officials, catering and cleaning personnel, security guards and Telia's own service technicians.

"The entire Freeset system was designed so that capacity could be increased quickly whenever necessary," explains Kenneth Gustavsson, Manager of Ericsson's Paging Systems Office in Gothenburg.

**Operational reliability**

"If necessary, we could have drawn cable and installed additional extensions in less

than an hour, connected them with new base stations and doubled the capacity of the system," Kenneth adds.

The switch facilities were naturally complemented by a comprehensive operating mechanism and security system. A powerful support center was built up by a special group of personnel who monitored the switches and Ericsson staff were also on call around the clock to back up the MD switches.

Service people on bicycles (!) with backpacks full of spare parts patrolled the area to provide fast service at short notice in the

event of any malfunctions. The accounts department was also reinforced. Telia used a payment system called TIMS (Telecom Integrated Management System) provided by Ericsson/HP. The system, which is easy to work with and records everything in English, registered every customer's invoices on one bill, regardless of whether it involved telephony, mobile telephone rentals, fax services, etc. TIMS facilitated customer billing procedures, enabled Telia to collect advance payments and settle final invoices.

Lars Cederquist

## EDACS system rented directly from Ericsson

■ To meet the need for group communications between different officials at the games, the local organization committee of the World Championships in Athletics rented an EDACS system from Ericsson. Conventional telephony, mobile telephony and Freeset are able to manage communications from point to point, while EDACS is a radio system that is used by police departments and emergency rescue units, for

example, and is specially designed for highly flexible management of group calls.

The EDACS system used in Gothenburg consisted of a base station with four frequency channels to serve 230 portable terminals and 10 stations installed in vehicles. The system covered the Ullevi Stadium area, and particularly the marathon course. The marathon race was the biggest test for the equipment, involving a large number of

people over a large area, including officials, judges, timers, emergency personnel and others.

"We are very satisfied, both with the system that made it possible to work simultaneously with several different groups, and with the service we received from Ericsson," stated Inger Nilsson, who was in charge of communications during the World Championships.



# New uses for mobile telephones

Cellular mobile telephone systems are breaking down barriers and being transformed from purely mobile systems. Increasingly they are encroaching upon fixed networks and emerging in forms called fixed cellular and soon mixed cellular, meaning a system in which a network operator combines mobile and fixed services.

Ericsson's first fixed cellular network was installed in Malaysia, where you can find various radio system technologies, including analog and digital mobile telephony, personal telephony, fixed cellular and radio in the local loop.

The forces fueling the battle between mobile telephone systems and fixed networks are many. One is that mobile telephone networks often have surplus capaci-

Mobile systems compete with conventional fixed networks

ty both regionally (primarily in rural areas) and at certain times (primarily at night). Another is that a cellular network may be a quick and easy way for a new operator who has received a license to provide conventional subscriber lines using mobile technology to compete with an existing operator.

Cellular systems are also attractive because they can provide new functions, not the least of which being mobility, in a more flexible manner so that users can gradually add services as their requirements change and willingness to pay increases.

## Economical

"Radio is an economical means of extending networks in areas where predicting subscriber locations is difficult," explains Karl Forselius, who works with business development in Ericsson's Radio Communications business area.

"A new operator of a fixed telephone network in a country in which there is already a fixed network must quickly attain profitability over the entire network. The operator may expect to gain a 5 to 10 percent market share, but where are the customers? Who can afford the service? Drawing wire under these conditions is impossible."



New products for the fixed cellular network in Malaysia are demonstrated by Cecilia Brändström and Håkan Olsson at Cellular Systems - American Standards, the Ericsson business unit that works with the AMPS and D-AMPS standards. Shown to the left is an SLT, Single Line Terminal, that provides the radio link with the network and a connection for the subscriber phone. Shown on the table is an MLT, Multi-Line Terminal, designed for

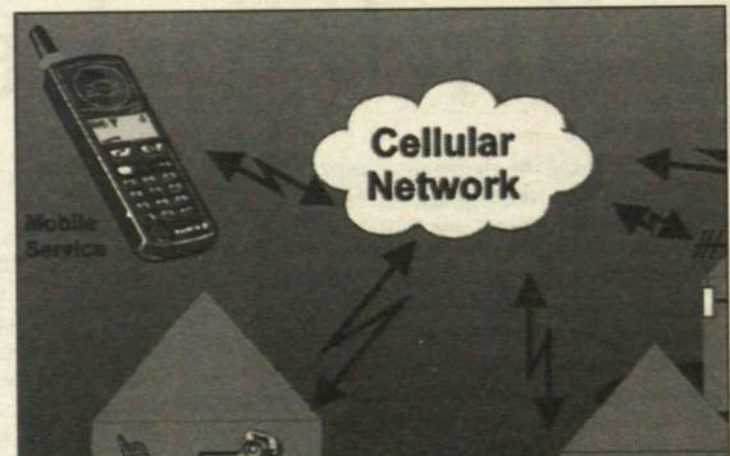
## New roles for mobile telephones

New opportunities are emerging for mobile telephony. In addition to mobile services, illustrated at the top left, the network can be configured as a mixed cellular system (lower left) to provide services differentiated by price. A subscriber can then use a mobile telephone as a fixed or cordless home or office telephone with a low tariff but switch to a higher-priced mobile service as required.

The right side of illustration shows a fixed cellular configura-

Some explanations are in order before we turn our attention to the fixed cellular network in Malaysia. This is Ericsson's first thus far, but many projects are in the works.

A fixed cellular network is a complete mobile telephone network and includes both mobile switches and radio base stations. The only difference compared with a conventional cellular network is that subscribers are not



tion with various types of terminals. At the bottom is shown a simple form of integration using a fixed cellular terminal with a key pad to which the subscriber

mobile. There is a system function that restricts mobility to so-called subscription areas to which use of the subscriber terminal is limited. Individual subscribers may move about within their cells, using the frequencies available in each cell. However, if they carry their "fixed phones" to another cell, they are unable to place or receive calls there.

The fixed cellular system should not be confused with ra-

may connect a fax or a computer. The fixed telephone is not portable, however, and it is not possible to place calls in another cell.

dio in the local loop (RLL), which is not a mobile telephone network but rather a means of replacing the last copper cable from the local exchange with a radio link.

In this system, the local exchange is equipped with a radio base station that communicates with a unit installed in an apartment building, for example, from which lines are drawn to the subscribers' fixed telephones.

RLL supplements an existing system and is often combined with conventional wireline access networks in a single local exchange, something which is not possible with a mobile switch (MSC).

In contrast to a fixed cellular system, an RLL network can never become a mobile network. There are no mobile switches to support roaming between cells in an RLL network. Subscribers also perceive RLL networks as a conventional public switched telephone network (PSTN), with all the services normally expected.

## From fixed to mixed

Fixed cellular networks are inherently flexible and are often designed to provide users with mobility as an option. Such networks are called mixed cellular because they combine the two types of service, although tariffs differ for fixed and mobile users.

"Most licenses granted to date have not allowed mobility," says Karl Forselius. "However, the situation is now changing rapidly, and operators are looking forward to being able to introduce various services with differential



multiple lines serving an apartment building or an office, for example.

pricing. Mobility is of course a top priority."

## Sights set on mobility

"It's fair to say that most operators currently investing in fixed cellular really want to be mobile operators," says Håkan Olsson, who is working on Ericsson's Malaysian project. Håkan is the manager for technical sales support at Cellular Systems - American Standards, the Ericsson business unit for AMPS/D-AMPS systems.

"Mobile services are where the money is. In many countries, the tariffs in fixed networks are so low that new operators are forced to compete with other services, such as mobility."

The fixed cellular system that Ericsson is now delivering to Malaysia is based on the AMPS standard. The operator has an AMPS/D-AMPS network with both analog and digital channels to which subscribers are connected via terminals.

## Quick and inexpensive

Anyone who wants telephone service can go into a shop and open a subscription. The subscriber may then rent a so-called



"The strong growth of mobile telephone networks has made them attractive even for fixed subscribers," says Karl Forselius, business development manager at Ericsson Radio as he shows a simple terminal for a fixed cellular system based on the DCS 1800 specification, which is the GSM standard for personal telephony.

"Mobile telephone networks can be built quickly. In many cases subscribers are satisfied simply to get a telephone. Other users are interested in differentially priced services, such as low-cost fixed telephony and mobility at a higher price."

Single Line Terminal (SLT) and buy a telephone which plugs into the terminal. The terminal, which may be placed on a table or mounted on a wall, is basically a mobile telephone with an antenna that communicates with the radio base station. The telephone interface is standardized and allows the subscriber to choose between several different models.

"Mobile telephony provides a quick and inexpensive solution," relates Håkan Olsson. "We can provide all the services available in the fixed network. Today's mobile telephone systems now provide all supplementary services, including voice mailboxes, caller identification, short message services, etc. The only real limitations are multimedia and high-speed data.

## Sharing lines

In addition to the SLT there is a Multi Line Terminal (MLT) that can be compared with a PBX which allows many subscribers to share a given number of lines. Not surprisingly, a look inside the MLT reveals an Ericsson Business Phone 250 exchange in which 95 lines are concentrated to 16 voice channels, plus mobile telephone and antenna equipment to handle radio communications with the network.

An MLT can be centrally located in an apartment building, for example, allowing residents to be connected using standard single-pair copper wiring. In an

office environment, the MLT can also function as a PBX, handling both external and internal calls.

The MLT is even suitable for use in residential areas of limited size, for example, in suburbs, enabling telephone services to be provided quickly and cost-effectively.

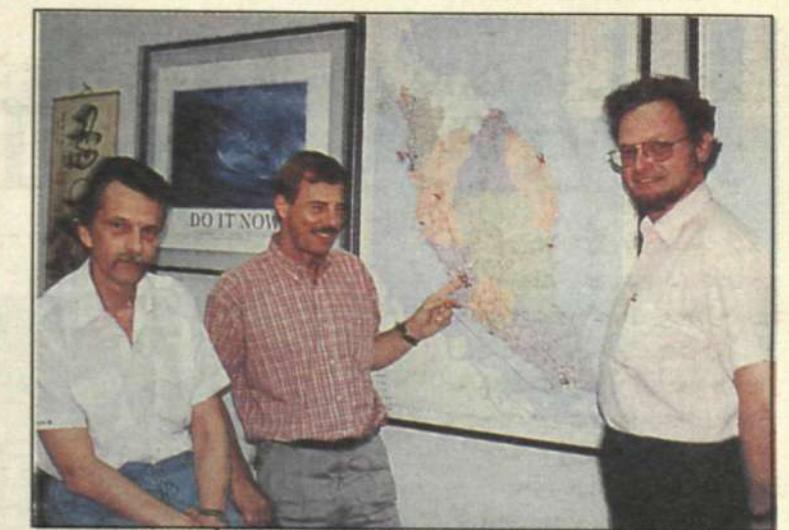
## Global phenomenon

"Interest in fixed cellular is growing all over the world," says Karl Forselius. "Countries that have already started include Spain, where mobile telephone systems are now providing services for fixed subscribers in rural areas. We also have discussions in progress with other operators concerning fixed cellular systems based on GSM, NMT and other standards."

RLL systems are also attracting attention. Ericsson Radio Access has several large systems in operation, for example, in Malaysia and Hungary.

A general trend is that competition is increasing between cellular and fixed networks, but there is also a tendency for the two types of network to merge. Mobile telephone networks are being extended to private subscribers in the fixed network, while operators of fixed networks are showing increasing interest in mobile services. In the end it may be the same operators who own both the mobile and fixed networks.

Lars Cederquist



To the left Göran Årelind, right Bo Mejner, head of mobile telephone operations at Perwira Ericsson. In the middle Allan Jansson, who participated in the construction of the NMT-network ten years ago.

## Malaysia first out with new technology

In November of last year, Ericsson received a major order for fixed cellular in Malaysia. The contract was a framework agreement valued at SEK 3.4 billion and extending for five years. This was Ericsson's first order for a fixed cellular system based on AMPS/DAMPS technology.

"Our customer is Syarikat Telephone Wireless (STW), a company formed in February 1993. In December of that year, the company received at license for a test system on the resort island of Langkawi," relates Bo Mejner, who is responsible for mobile telephony at Perwira Ericsson in Malaysia.

In autumn 1993 Ericsson and another supplier were each requested to set up a test system. In the end, only Ericsson installed a system on Langkawi, which was taken into operation in April of last year.

Today it has been put into commercial operation. Currently there are about 800 subscribers on Langkawi, served by three base stations and a switching center.

## Nationwide coverage

The fixed cellular system will provide coverage for all of Malaysia. Expansion is taking place rapidly, and by the end of the year network capacity will be 30,000 subscribers. STW expects the number of subscribers to grow to 100,000 by 1996.

In addition to Langkawi island, installation is now underway in the Malaysia capital of Kuala Lumpur and in Penang.

The first order of SEK 100 million according to the terms of the SEK 3.4 billion framework agreement has now been received. This order calls for two switches and 20 base stations. One of the switches will be installed in Kuala Lumpur.

"We expect an additional order of SEK 100 million this year," says Bo.

Ericsson's commitment calls for delivery of a turnkey system. This means that the operator will receive a system in which Ericsson takes responsibility for cell planning and all other implementation details.

## Analog and digital

"Ericsson obtains sites that are suitable from the standpoint of radio communications and installation. We take care of the engineering and show the customer how the site should be constructed. Actual construction, however, is up to the customer," says Bo Mejner.

The system is based on AMPS/D-AMPS, which means that both analog and digital technology may be used. Both will be used initially, but the goal is that the network eventually will be all-digital.

## Vision 2020

Vision 2020 is the name of a development program that will transform Malaysia into a highly industrialized country. According to the plan, 45 percent of the country's population will have a telephone by the year 2020. Today only 15 percent have a telephone.

By taking advantage of radio communication in the fixed network, it is possible to rapidly expand telephone service. Using a fixed cellular network based on AMPS/D-AMPS is another method.

Still another alternative is RAS 1000, which Telekom Malaysia selected and purchased from Ericsson. The difference between the two systems is described in the accompanying article.

"I believe that there is room for both systems in Malaysia. The operator who provides coverage and capacity most quickly will have a significant advantage," concludes Bo Mejner.

Gunilla Tamm



# A flying start for Ericsson in Croatia



One of Croatia's most successful companies, the Ericsson Nikola Tesla head office is centrally located in Zagreb, the capital of Croatia.

## SEK 3 billion order secured straight away

After 40 years of cooperation, Ericsson and Nikola Tesla in Croatia have cemented relations and established a joint company, Ericsson Nikola Tesla. Ericsson is the first multinational company to have established a base of this type in Croatia.

The combination of Nikola Tesla's strong market position in the domestic market and in Russia, with Ericsson's international strength and broad range of competitive products provides the new company with the best possible prospects.

The operations of Ericsson Nikola Tesla certainly got off to a flying start. At the same time as Ericsson agreed to go in as joint owner, a long-term delivery agreement was signed with HPT, the Croatian telecommunications administration. Among other equipment, the agreement covers deliveries of AXE worth between SEK 3 to 4 billion (USD 400 to 540 million) over a 5-year period. Negotiations regarding the first part-deliveries are in progress.

During the same week in May as the new company was formally established, it signed its first order – for AXE equipment valued at USD 2 million to be delivered to Minsk, the capital of Belarus.

### Heavy workload

These are busy days for Per Olof Sjöstedt, president of the new company, and his management colleagues.

In addition to handling customer requirements, fulfilling ongoing assignments and ensuring that product development and production activities are conducted on time, the business parameters of the new company must also be formed.

All of this in a country that is undergoing a dramatic change to



During the first week of June, Tomsktelekom, the public telecommunications operator in the Tomsk region of Russia, signed an order for AXE equipment worth USD 8.8 million with Ericsson Nikola Tesla.

its economic system and located in a turbulent area of the world.

"There is a great deal to do," reflects Peo Sjöstedt. Clearly, he regards his new position as an exciting challenge.

However, the basic conditions are relatively good. Strangely enough, the conflict in the region



The new joint company marks an important milestone in the long and very successful cooperation between Ericsson and Nikola Tesla. The management of the new company has been appointed and programs of measures have been initiated to exploit the opportunities afforded. Per Olof Sjöstedt (third from left) is president of the new company.

been brought under control and the new currency is stable. Last year, Nikola Tesla was one of the most successful companies in the country.

### Good partner

Perhaps the most important factor is that the employees are positive towards Ericsson's entry as joint owner of the company.

"Nikola Tesla could not have survived on its own," says Vladimir Kovar, head of the metal workers union in the company and a member of the Board of Directors.

"We consider Ericsson to be the best possible partner. The two companies have enjoyed more than 40 years of successful cooperation."

The employees of the new company are well aware of the fact that Ericsson also stands to gain considerably from the establishment of a joint company.

"It is a good move for both parties. Ericsson will benefit from Nikola Tesla's knowledge of the Russian market and we

gain access to Ericsson's new technology."

### Changes wanted

The employees are expecting the new joint owner to implement a program of changes that will strengthen the company's competitiveness.

This is very much in their own interest, since the employees own half of the shares in Nikola Tesla.

One such change is a broadening of the company's product range. Today, the company markets AXE, MD110 and power equipment.

It is Peo Sjöstedt's intention to increase this range as soon as possible to include transmission equipment, mobile telephony, land mobile radio, fiber-optic cable and BusinessPhone.

### Major potential

"Major potential exists for these products. The market is there and the company has an enormous network of contacts in Croatia, Russia and the former Soviet



The new joint company marks an important milestone in the long and very successful cooperation between Ericsson and Nikola Tesla. The management of the new company has been appointed and programs of measures have been initiated to exploit the opportunities afforded. Per Olof Sjöstedt (third from left) is president of the new company.

Union, with whom we can work on a more effective basis."

### Regaining control

Among other important measures, the company's operations and administration will be reviewed. The weaknesses that exist are due more to the general economic system and the heavy inflation that previously prevailed in Croatia than to shortcomings within the company itself.

"We need to rapidly introduce a financial system that makes it possible to regain control over our costs and revenues," says Peo.

Under the former system, financial information and earnings were relatively uninteresting. Nor was customer consideration an especially well-developed art. Instead, the focus of the old system was firmly on production.

### Competent work force

In addition to its favorable position in the domestic market and

in Russia, the company's highly competent work force is one of its most important strengths.

For example, the company is known for its skilled designer engineers. Nikola Tesla has already adapted the AXE and M110 systems to match the telecommunications network in the former Soviet Union, one of the most complex networks in the world.

The technical units are the same as those which worked with Ericsson during the many years Nikola Tesla was a licensee.

"We use Ericsson's models, methods and tools," explains Antun Caric, head of the design center in the new company. "We differ on very few points, all of which we plan to rectify within the next few months."

Knowledge about Ericsson is relatively limited among most of the employees. There is considerable interest in the new owner, however.

"It is important that we establish good contact between Ericsson and Ericsson Nikola

## New company a way in to the Russian market

"We would really like to see Ericsson become more active in Russia," says Alexander Alyoshin, a senior executive with Rostelkom, the national operator handling long-distance and international traffic in Russia.

"And a combination of Ericsson and Nikola Tesla could also contribute to the company becoming established more rapidly in the market."

Nikola Tesla has 30 years of experience in delivering telecommunications equipment to the former Soviet Union, and more recently to the commonwealth of independent states. As a result, AXE is one of the leading systems in the telecommunications networks of these countries.

Alexander Alyoshin has worked in the telecommunications field for almost the same length of time, initially within the CIS and later in Russia. He knows the company very well. Finland's Nokia, Slovenia's Iskra and Nikola Tesla were for many years the only suppliers of foreign equipment to the public telecommunications network in the CIS. Since the monopoly situation was eliminated, the great potential of this market has attracted many other international suppliers.

The Commonwealth of Independent States (CIS), meaning Russia and the other parts of the former Soviet Union, constitutes a huge market for the telecommunications industry. Telephone density in Russia is based on an average of just 14 subscribers per 100 inhabitants. The investments needed to increase this figure are extensive.

### Major projects

"The problems with the country's economy do not affect the telecommunications industry," says Alexander Alyoshin. During the past three years, the telecommunications market in Russia has expanded. Several

major projects are currently in progress.

Despite the increased competition, Nikola Tesla has managed to maintain its position as one of the leading suppliers.

During 1994, Nikola Tesla was visited by 184 delegations from CIS countries. Roughly 700 customer employees from these countries were trained in the AXE and M110 systems, either at the Nikola Tesla training center in Zagreb, or at their own companies.

"Nikola Tesla's strong position in Russia is an important factor in the background to Ericsson's entry as a joint owner," says Håkan Jansson, who is Chairman of the new Ericsson Nikola Tesla.

During the many years Nikola Tesla has been active in the CIS countries, the company has built up extensive considerable experience and expertise in working with these countries. Local offices have been established throughout the entire region.

### Highest recognition

Sandor Losonc has been appointed head of the unit within the new company that works with the CIS countries. He has many years experience of working within this region.

In connection with the commissioning of a large international station in St. Petersburg last year, he was selected to receive the Peoples' Friendship Award from President Jeltsin for his contributions to the telecommunications industry in Russia. This is the highest recognition a foreigner can receive in Russia.

Sandor is highly positive to the cooperation between the two companies.

Several Ericsson companies are active in the CIS, including Ericsson's Russian company, Ericsson Corporatia, which was officially opened last autumn.

"We intend to coordinate all our efforts so that we utilize the resources available to us in the most efficient manner," concludes Håkan Jansson. **MR**



Alexander Alyoshin, a senior executive with Rostelkom which handles national and long-distance traffic in Russia, wants to see more of Ericsson in Russia. "During the past five years, Ericsson's policy in Russia has been unknown to us."

Tesla," says Peo. "We need a lot of support and help at this early stage, particularly from all of the Ericsson business units. I am convinced that all input from Ericsson's side will yield a very favorable return.

Maria Rudell

## ERICSSON THE PRINCIPAL OWNER

The Nikola Tesla telecommunications company was founded in 1949. The company has held a licensing agreement with Ericsson since 1953 and has manufactured several generations of switches. Today, the company manufactures and markets the AXE and M110 plus power equipment in more than ten countries, with about 50 percent of its sales going to the CIS, primarily Russia.

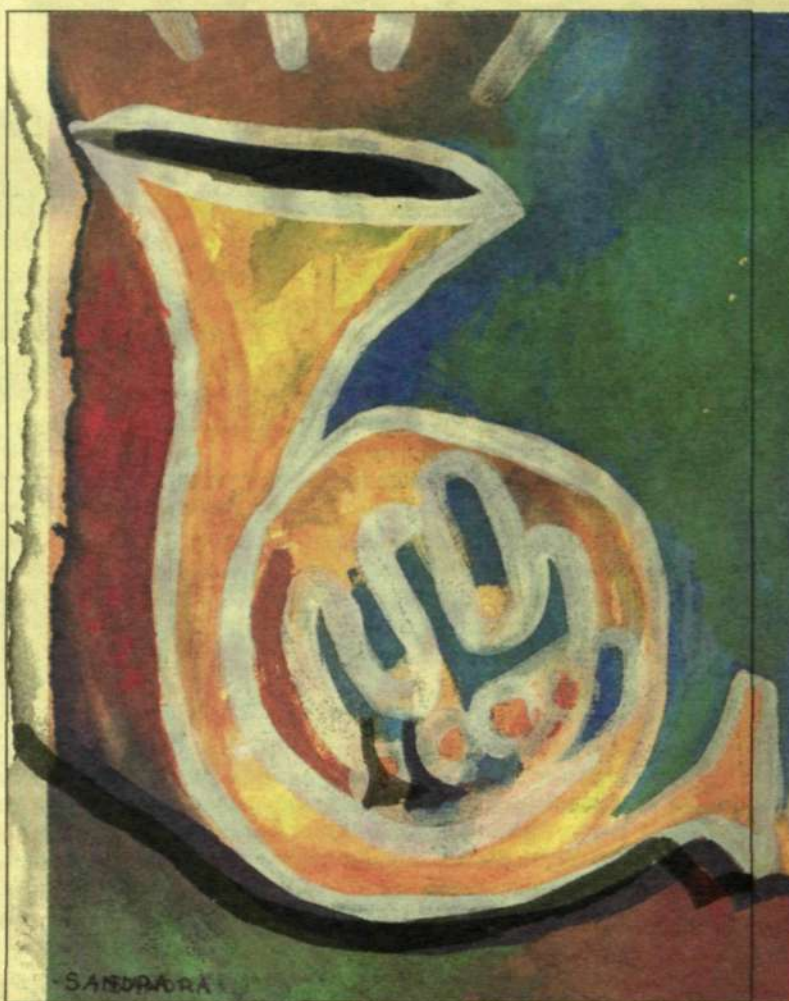
During 1994, Nikola Tesla had sales of approximately SEK

1,050 million (USD 140 million), with some 3,000 employees. Approximately half are salaried staff. The company's head office is in Zagreb and it is the largest electronics producer in Croatia.

Ericsson is the largest single shareholder in the new joint company, Ericsson Nikola Tesla, with a holding of 49.07 percent. The company's employees hold 50 percent of the shares. The remaining shares are held by the Croatian government.



## Signalling System No.7



THE HORN has been used as an orchestra instrument since the seventeenth century. An instrument that originally was designed for one sole purpose: To make hunting more efficient through clear communication between the hunters. SIGNALLING SYSTEM NO.7 was designed in the 1970s to synchronize call set-up and teardown in digital telecommunications networks. Today it is the vehicle that brings intelligence, mobility and connectivity into telecommunication.

Ericsson Infocom Consultants AB develops and sells software, hardware and solutions for Signalling System No.7.

The protocols are developed according to standards adopted in Europe – ITU, USA – ANSI and Japan – TTC with application protocols for voice, data and Ericsson systems.

The products are intended for:

- voice mail and voice processing
- text communication in digital Cellular Networks
- connectivity solutions
- IN networks.

And in addition to the products the following services are provided:

- development of customer specific solutions national adaptations
- interoperability tests at customer site
- support and maintenance
- expert consultancy
- training.

The products are available or planned for most standard computer platforms such as Sun, IBM, PC, HP, Force, Bull – and can easily be ported to other non standard platforms.

The solutions range for small PC gateways to large fault tolerant systems.

Contact persons:

Jörgen Tränk, Product Manager

phone +46 54 29 42 18

fax +46 54 29 40 01, memo: EIN.EINJOTR

Gunnar Sjöberg, Sales Ericsson

phone +46 8 719 93 61

fax +46 8 719 93 16, memo: EIN.EINGUSJ

and

Matti Drisin, Marketing and Sales Manager

phone +46 8 719 84 29


fax +46 8 719 93 16, memo: EIN.EINMADR

Ericsson Infocom Consultants AB

Box 1038, S-651 15 Karlstad, Sweden

Phone +46 54 29 40 00

Fax +46 54 29 40 01

**ERICSSON** 

## RADIO COMMUNICATIONS – RUSSIA

Ericsson Corporatia AO (ECR) is the recently established local company located in Moscow, Russia.

We are responsible for all Ericsson market activities in Russia.

Already many contracts have been signed for cellular systems (NMT, AMPS, D-AMPS, GSM) as well as trunked mobile radio systems, (EDACS).

The company is growing rapidly.

In addition to that a number of joint ventures are foreseen in the areas of research and development, training and consultancy.

To build up the company we are looking for dedicated and energetic colleagues to our office in Moscow.

Your main task will be organising the necessary contacts with our home organisation and our customers in Russia.

Applicants should have at least five years experience in Ericsson, preferable in the area of radio communication.

You must be fluent in English and willing to learn Russian.

Management experience and working experience from Russia are of value.

### COMMERCIAL

#### Manager marketing and Sale.

The manager of this department will be responsible for the local marketing, the budgets, the forecasts and the reports of its employees.

As manager you have a special task in hiring and training the local staff and establishing the working and administrative routines.

You are responsible for the contacts, and reporting to the business unit managers within the business area.

You are personally involved in key-customer contracts.

A marketing background is necessary, as well as previous management experience in Ericsson.

#### Contact persons:

Eric Franke, Joakim Cerwall, Eddie Åhman.

### OPERATIONS

#### Manager Operations

The manager of this department will be responsible for the local operations, the budgets, the forecasts and the reports of its employees.

As manager you have a special task in hiring and training the local staff and establishing the working and administrative routines.

You are responsible for the contacts, and reporting to the business unit managers within the business area.

You are personally involved in key-customer contracts.

A project management background is necessary, as well as previous management experience in Ericsson.

#### Contact persons:

Eric Franke, Joakim Cerwall.

### PRODUCT MANAGEMENT

#### Manager Product Management

The manager of this department will be responsible for the local product management, the budgets, the forecasts and the reports of its employees.

As manager you have a special task in hiring and training the local staff and establishing the working and administrative routines.

You are responsible for the contacts, and reporting to the business unit managers within the business area.

You are personally involved in key-customer contracts.

#### Contact persons:

Eric Franke, Joakim Cerwall, Eddie Åhman.

### INSTALLATION

#### Manager RBS installation

The manager of this department will be responsible for building up and traing a team of local RBS installers for our mobile telephone systems NMT/GSM/AMPS/D-AMPS.

You have a background as a manager in Ericsson and experience from RBS installation.

The position requires extensive travel in Russia.

#### Contact person:

Eric Franke.

#### Contact persons:

Eric Franke, memo ECR:ECRERFR, phone +7 095 205 2666  
Joakim Cerwall, memo ERA:ERAJOCE, phone +36 8 757 3929  
Eddie Åhman, memo ERA:ERAEDDI, phone +46 8 404 2280  
Kjell Östergren, memo ERA.ERA.KJEL, phone +46 8 757 25 45

#### Please send your application to

K Östergren, Ericsson Radio Systems AB, S-16480 STOCKHOLM, SWEDEN  
or by memo ERA.ERAKJEL

**ERICSSON** 



# 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 Anita XXXX at the Editorial Office, HF/LME/DI. Phone +46 8 71928 14.

## INTERNATIONAL

Nanjing Ericsson Communication Co Ltd, Nanjing, China

### PLANT ENGINEERING MANAGER

ENC is a Joint Venture Company between Ericsson and a local Chinese partner. The Company is responsible for Ericsson activities in Central China. As Plant Engineering Manager you will report to the General Manager for the Supply and Manufacturing Division. You will Manage the Engineering department and you will assume responsibility for AXE, MSC and RBS Engineering and in 1996 also for Dokware production.

You shall have minimum engineer/technical college education and working experience within Plant Engineering including Management experience. You shall have good command in English, written as well as spoken. A key responsibility is training and development of local staff, so you shall be a good leader and communicator. The successful candidate will be offered minimum one year assignment and will be based in Nanjing in the Jiangsu province.

Contact: Hans Bertil Pålsson, Memo ETC.ETCSHP or Magnus Ask, +46 8 719 7481, LME.LMEMASK. Appl. to HF/ETX/H Magnus Ask.

Ericsson Eurolab Deutschland GmbH, Herzogenrath, Germany

ERICSSON EUROLAB DEUTSCHLAND GMBH is our young international research and development centre located in Herzogenrath near Aachen, Germany. We focus our innovative and advanced activities on mobile and public communication in order to secure and extend our leading market position. In January 1991 young engineers started their work in the field of research and software development and testing. Today we are 550. And further expansion will take place in phases.

### PROJECT MANAGERS

#### CME20/CMS40 SWITCHING SYSTEM DEVELOPMENT

Currently two projects are being established within RMOGs development of the mobile telephony GSM switching system: R6.1/R3 starting already today with prestudy phase and the next project R7/R4 starting early 1996.

We are now looking for two persons who want to take the challenge to manage a global project for the whole GSM switching system, involving approx. 400 people in 6 AXE10 design offices (France, Spain, Sweden, US, Greece, Germany). The projects will cover all development phases from feasibility study phase to GA, thus providing a broad overview from the early start of a product to its introduction all over the world.

You will work at EED within the SS node and project department, a group of around 20 people dealing with all aspects of project management. Besides, you will frequently travel to all involved countries, controlling the project and reporting to RMOGs steering committees in Sweden. You will also cooperate with the associated AXE mobile core development projects which are managed from EED as well.

This position requires good competence in AXE10 design or testing. Previous experience in line or project management would be beneficial. You will need initiative, good communication and cooperation skills and a good ability to work under pressure.

Contact: Oliver Meis, Memo EED.EEDOLM, +49-2407-575-267. Apply to: Ralf Mohr, EED.EEDMOR, +49-2407-575-163 before 950904.

#### AXE10 SYSTEM DESIGNER (D-AMPS)

The AXE Mobile Core System Group is responsible for the system development of the core products used commonly by all Ericsson's digital mobile systems ie. CME20 (GSM), CMS30 (PDC), CMS40 (PCS) and CMS88 (D-AMPS). In the coming project we will adopt the core to AM concepts and

develop the IN-AM. Running PC-AXE 106 Mobile, PC-APT 210 15 as well as overall technical coordination of the Projects in the AXE Mobile Core (AMC) are responsibility areas of the system group. To better support CMS88 and their ongoing projects we want to increase our competence in D-AMPS.

We are looking for an experienced system designers with more than 5 years of Ericsson experience and working experience with AMPS for this job. An Expatriate contract is offered for this position.

Contact: Hartmut Boehmer, EED.EEDHBO, +49 2407 575 231 Mobile Core Dev. Odd Svesse, EED.EEDODDS, +49 2407 575 133 Mgr. Mobile Core Dev. Ralf Mohr, EED.EEDMOR, +49 2407 575 163 Human Resources

#### AXE10 JUNIOR SYSTEM DESIGNER

The AXE Mobile Core System Group is responsible for the system development of the core products used commonly by all Ericsson's digital mobile systems ie. CME20 (GSM), CMS30 (PDC), CMS40 (PCS) and CMS88 (D-AMPS). In the coming project we will adopt the core to AM concepts and develop the IN-AM. Running PC-AXE 106 Mobile, PC-APT 210 15 as well as overall technical coordination of the Projects in the AXE Mobile Core (AMC) are responsibility areas of the system group.

System Characteristics is becoming more and more an issue that we we have to attack. Currently we are utilizing resources outside the system group for this important activity. To strengthen our competence, to improve the possibilities to be proactive and to optimize the system characteristics in all AMC related areas we want to increase our personell in this area. The close cooperation with the Characteristics Experts for CME20 in EED/M will be a big opportunity to build up competence in this area.

We are looking for a system designer with at least 2 years of Ericsson experience. A Local contract is offered for this position.

Contact: Hartmut Boehmer, EED.EEDHBO, +49 2407 575 231 Mobile Core Dev. Odd Svesse, EED.EEDODDS, +49 2407 575 133 Mgr. Mobile Core Dev. Ralf Mohr, EED.EEDMOR, +49 2407 575 163 Human Resources

#### AXE10 SYSTEM DESIGNER

The AXE Mobile Core System Group is responsible for the system development of the core products used commonly by all Ericsson's digital mobile systems ie. CME20 (GSM), CMS30 (PDC), CMS40 (PCS) and CMS88 (D-AMPS). In the coming project we will adopt the core to AM concepts and develop the IN-AM. Running PC-AXE 106 Mobile, PC-APT 210 15 as well as overall technical coordination of the Projects in the AXE Mobile Core (AMC) are responsibility areas of the system group.

To increase our possibility to participate in Pre- and Feasibility Studies and to carry out Investigations in various areas we are looking for additional system engineers to join our working area.

We are looking for an experienced system designer with more than 5 years of Ericsson experience for this job. An Expatriate contract is offered for this position.

Contact: Ralf Mohr, EED.EEDMOR, +49 2407 575 163 Human Resources Odd Svesse, EED.EEDODDS, +49 2407 575 133 Mgr. Mobile Core Dev.

#### AXE10 JUNIOR SYSTEM DESIGNER

The AXE Mobile Core System Group is responsible for the system development of the core products used commonly by all Ericsson's digital mobile systems ie. CME20 (GSM), CMS30 (PDC), CMS40 (PCS) and CMS88 (D-AMPS). In the coming project we will adopt the core to AM concepts and develop the IN-AM. Running PC-AXE 106 Mobile, PC-APT 210 15 as well as overall technical coordination of the Projects in the AXE Mobile Core (AMC) are responsibility areas of the system group.

To increase our possibility to participate in Pre- and Feasibility Studies and to carry out Investigations in various areas we are looking for additional system engineers to join our working area.

We are looking for a system designer with at least 2 years of Ericsson experience. Good analytical competence as well as the ability and willingness to work with various different tasks are required skills for this job. A Local contract is offered for this position.

Contact: Hartmut Boehmer, EED.EEDHBO, +49 2407 575 231 Mobile Core Dev. Odd Svesse, EED.EEDODDS, +49 2407 575 133 Mgr. Mobile Core Dev. Ralf Mohr, EED.EEDMOR, +49 2407 575 163 Human Resources

#### QUALITY COORDINATOR

The AXE Mobile Core (AMC) Product and Project Management Group is responsible for the AMC products and the running of AMC projects. The core products are used commonly by all Ericsson's digital mobile systems ie. CME20 (GSM), CMS30 (PDC), CMS40 (PCS) and CMS88 (D-AMPS). We are looking for a Quality Coordinator for the coming AMC projects. The person should have at least 2 years of Ericsson experience and should have worked with

quality or process related tasks. A local contract is offered for this position.

Contact: Ulf Henell, EED.EEDUGH, +49 2407 575 256 Mobile Core Development Ralf Mohr, EED.EEDMOR, +49 2407 575 163 Human Resources

### CME20 SWITCHING SYSTEM CHARACTERISTICS ENGINEERS

The characteristics team at EED is responsible for the CME20 Switching System Characteristics to ensure that our mobile switching systems are characterized by high capacity and minimal down times and to provide our markets with characteristics information. To this end we keep close relations to the mobile design and test projects, to achieve good performance and verify this performance as well as to the Local Product Management in the various GSM countries to provide them with characteristics support and give technical assistance at customer meetings. Due to the growing need for characteristics support we are looking for people to strengthen our characteristics team with good communication skills, open minded, self-motivated and team oriented. Suitable candidates have at least 3 years AXE 10 software design and/or testing knowledge and have ideally some cellular knowledge and/or characteristics experience. You have the ability to work under pressure in an international environment.

Contact: Pieter van Rijnsoever, Memo-id:EED.EEDPVR Ralf Mohr, Human Resources, Memo-id:EED.EEDMOR

### CME20 SS SYSTEM ENGINEERING

EED has the overall Switching System (or SS) coordination responsibility for CME20 and we are looking for people for the CME 20 SS system engineering group. This group focuses on a range of system level tasks which are necessary to ensure progressive and continuous development of Ericsson's GSM switching system in an orderly and evolutionary manner. In addition to the prerequisites mentioned below, we are particularly interested to talk to people who can provide significant competence in one or more of the following areas: Data communications, ISDN network functionality in both access and ISUP interfaces, Supplementary services, Application Modularity development techniques, good knowledge of the ETSI GSM or ITU-T ISDN specifications/recommendations or any other competence area which you think may be relevant for CME20 SS system engineering work. Suitable candidates possess a minimum of 4-5 years of AXE development experience and at least 2-3 years of experience in system-level technical work. Experience with GSM or other mobile telephony development is advantageous, but not absolutely required.

Contact: Leo Garon, Memo-id: EED.EEDLEO Ralf Mohr, Memo-id: EED.EEDMOR

### CME20 & CMS40 SS EXPERIENCED AXE10 SOFTWARE DESIGNER

Our Switching section within the mobile Network Department is responsible for the MTS and MSS subsystems and the software development and design for CME20 SS & CMS40 SS. Furthermore, we cooperate very closely with other involved design centres in Paris, Madrid, Athens and Dallas. Due to rapidly growing GSM and PCN markets we need to increase our technical competence in the area of standard development of new mobile features. Therefore we are looking for numbers of experienced SW-Designer (AXE10). The activities cover the full range of SW development. Supervision and coaching of new designers will be one of the most important activity areas. We are looking for EXPERIENCED AXE10 SW-Designers, expatriate basis. As a suitable candidate you should have 2-3 years of AXE10 SW designer experience. Experience with GSM or other mobile telephony development is advantageous, but not absolutely necessary. You are open-minded, self-motivated and team oriented and have good communication skills as well as a good ability to work under pressure.

Contact: Jyri Andersson, Memo-id: EED.EEDJAA Ralf Mohr, Memo-id: EED.EEDMOR

### CME20 SS OPERATIONAL PRODUCT MANAGEMENT(OPM)

To support us with a growing number of challenges we are looking for people for the CME20 SS Operational Product Management group. The OPM group at EED is participating in the development of Ericsson's GSM switching system CME20 SS, focussing on functionality related to the MSC/VLR. We provide technical market support to Stratetig Product Management and Local Product Management all over the world. We participate in the requirement design process, by writing requirements specifications for CME20 SS System, or actively participate in the GSM standardization process, impacting the evolution of the GSM standards.

We are looking for persons who already have experience with telecommunication networks and preferably, but not necessarily GSM. If you have worked several years with AXE10 development, product management of standardization, with CME20 or other mobile applications, and enjoy

working in a rapidly growing progressing environment with constant new challenges you are the kind of person we are looking for.

Contact: Stefan Blomqvist, Memo-id: EED.EEDSTB Ralf Mohr, Memo-id: EED.EEDMOR Ericsson Allee 1, D-52134 Herzogenrath, Germany

Due to the growth of responsibilities in our training dept. we are looking for

### 2 TRAINING ENGINEERS

#### AXE-10/CME 20

(1 for our location in Duesseldorf and 1 for our location in Herzogenrath). The training department is responsible for customer training and competence development within the German Major Local Company (MLC) The main tasks are: Provide professional technical training, Course development and maintenance, Promote Ericsson's image and its products. The positions report to Andreas Meyer, Group Manager Training in Duesseldorf and/or to Stefanie Damoser, Group Manager Training Herzogenrath. Start for Duesseldorf asap / start for Herzogenrath will be the 1st. of October 1995. As a suitable candidate you are a local employee and have a degree as Dipl.-Engineer. You must have very good knowledge of AXE10 and/or CME20 and good software and UNIX knowledge. Training experience is a definite plus. We expect excellent English, good communication skills and an open-minded, self-motivated and initiative personality.

Contact: Ralf Mohr, Human Resources, Memo-id:EED.EEDMOR Stefanie Damoser, Training Dept. Herzogenrath, Memo-id:EED.EEDSTD Andreas Meyer, Training Dept. Duesseldorf, Memo-id:EED.EEDAMR Ericsson Eurolab Deutschland GmbH, Human Resources, Ericsson Allee 1, D-52134 Herzogenrath, Germany

Our new research & development centre in Nuernberg is looking for a

### QUALITY COORDINATOR,

Expatriate basis, asap. Your main responsibility is to build-up the local quality system according to the ISO 9001 requirements. The main fields of activity are: Establishment and maintenance of the local quality system, Process identification, Training and support of the employees. The position reports directly to Juergen Schmidt, Manager of the business unit EED/N (Nuernberg). As a suitable candidate you are Ericsson employee and have a technical degree. You must have solid ISO9001/TQM knowledge and experience. Former experience as a Quality Coordinator would be perfect. Additionally you should have good communication skills, team and result orientation, initiative and self-motivation. And you should be used to stand hard work and time pressure.

Contact: Doerte Kaulard, Human Resources Herzogenrath, memo-id:EED.EEDDKA Juergen Schmidt, Manager, Ericsson Eurolab Nuernberg memo-id:EED.EEDJUS Please send your applications to Ericsson Eurolab Deutschland GmbH, Ericsson Allee 1, D-52134 Herzogenrath, Germany

Ericsson Ltd, Guildford, United Kingdom

### EX700

#### - SENIOR SUPPORT ENGINEER

To work within the Mercury 0-2-0 Customer Support Centre at Guildford, investigating customer problems, attending meetings with the customer, involved in the ASM software supply process, liaising with ESO and assisting with verification activities.

At least 5 years experience in telecommunications and experience with AXE operation and maintenance.

Contact: Chris Back, Memo ETLCRBK or Helen Bennett, ETLHNES.

Ericsson Radio S.A., Madrid, Spain

We are in a build up phase of our ESO. We are in an URGENT need for the following experienced persons:

#### 1 person for Configuration Management.

#### 1 person responsible for our STPs.

Both places are short term assignments (about 3 months), start date as soon as possible.

Contact: A ROSSI, +34 1 339 1508, Memo REE.REEANR.

L.M. Ericsson Ltd, Dublin, Ireland

### AXE TECHNICAL SUPPORT

LMI wish to announce a number of vacancies in the area of AXE Technical Support. LMI has 3 areas of AXE Operations as follows:

- \* Irish Market Support. - There are a number of AXE Application System in the Irish network covering Local POTS, Transit ISDN and POTS, Local ISDN, IN, OPS, GSM, TACS.
- \* Ericsson Support Office for GSM, for South Africa, Turkey,



Bahrain, Iran, Lebanon, UAE, Libya and Ireland and for TACS for Nigeria and Ireland and for AMPS for several markets in the former Soviet Union.

\* Global Application System Maintenance for the GAS AA21 which is in use in 20+ markets and the Product Line BM 2.0 which is used in approximately 6 markets and shortly for the Product Line BM 2.4 which will be used in 20 + markets.

The most immediate vacancies which we now have are in the GAS maintenance area. This entails specifying, testing and releasing CNA's and ACA's for the 3 GASs mentioned and also designing, testing and maintaining the upgrade paths between different GASs or Product Lines. The work requires a deep knowledge of AXE Software. We recognise that there is a shortage of people with such knowledge and we will therefore accept individuals with lesser experience but with the aptitude and eagerness to develop as software Trouble-Shooters. We also have a number of vacancies related to our assignment from ERA to recruit, train and develop 30 individuals to staff ERA Field Support Centres throughout the world. We also have several vacancies in the area of TMOS.

Contact: Don Murphy, 353 01 2837222, Memo LMIDM.

#### Ericsson Ltd, United Kingdom

### CONFIGURATION ENGINEER

The section of today consists of the following: AS-Specification and Parameter setting two persons Data Transcript one person. One supervisor taking care of all testplants at the Guildford premises. He has currently four persons working with maintenance and control of the testplants.

In addition to this we have today two persons working with Dump Assembly, in this area we are now currently looking to expand with one more person. The person we are looking for should have the following knowledge. 1. AXE 10 Dump Building, Ref dumps and Working dumps. 2. Be able to perform Function change, trouble shooting of the performed function change! 3. Be able to perform Desk checking of corrections. 4. Write implementation instructions. 5. Be able to perform Basic tests and survival tests 6. Mapping/Transfer of Corrections and PD's(Product Development issue(Market correction functions)) 7. Knowledge of MHS 8. Be very thorough 9. It is an advantage to have worked in a TCM environment. 10. Preferably GSM knowledge but not a requirement. 11. Should be able to work in an ever changing environment.

Contact: Bill Turley, Memo ETLBLY or Ronan Mc Mahon, ETLRNMN.

#### Ericsson Mobile Communications Company, Beijing, China

### SALES DIRECTOR TERMINALS

BMC is a newly formed Joint Venture Company between Ericsson and a local Chinese partner. The Company is located in Beijing and will be responsible for marketing/sales and production of Mobile Systems, Terminals and Power equipment. As Sales Manager Terminals you will report directly to the Director Terminals. You will be responsible to build up a highly result oriented, dynamic and professional sales organization. The main challenge will be to develop and implement sales and distribution strategies aiming for volumes in a fast growing market. You will also be responsible for recruiting, training and development of local staff.

The successful candidate shall have broad general knowledge of distribution of consumer products preferably in a Chinese environment, with contacts and negotiations on a high level. You shall be fluent in English, Mandarin knowledge is desired. You will be offered minimum one year assignment.

Contact: Gunilla Nordström, Memo ETC.ETCGUNI or Christer Ahlner, Memo ETC.ETCBEA, in China. Please send your applications to HF/ETX/H Magnus Ask.

### MARKETING MANAGER

#### MOBILE SYSTEMS

As Marketing Manager you will assist the Director for Mobile Systems in building up and develop the organization for marketing/sales and product management for mobile systems TACS & GSM. You will also be responsible for training and development of local staff.

The person we look for shall have extensive working experience in the field of marketing/sales of mobile systems including management experience. You must be able to work independently, take own initiative and have good communication skills both internally and towards the customers.

The successful candidate will be offered minimum two years assignment with family or as single status.

Contact: Bernt Hult, Memo ETC.ETCBEH or Christer Ahlner Memoid ETC.ETCBEA, in China. Please send your applications to HF/ETX/H Magnus Ask.

### LOGISTICS MANAGER

As Logistics Manager you will report directly to the Production Director. You will be responsible to build up, or

organize and develop the logistics function in the joint venture. You shall secure optimal flow of materials for production. You will also be responsible for all local procurement as well as training and development of local staff in the field of logistics.

The person we look for shall have excellent knowledge of logistics routines, methods and systems as well as good knowledge of other processes in the order flow. You shall have around five years of experience in the field of logistics including Management experience. You will be offered minimum one year assignment with family or as single status.

Contact: Bernt Hult in China, Memo ETC.ETCBEH or Christer Ahlner Memo ETC.ETCBEA, Please send your applications to HF/ETX/H Magnus Ask.

#### Ericsson GmbH, Düsseldorf, Germany

### MANAGER NEW ACCOUNTS GERMANY

Within EDD the division Mobile Telephone and Data systems is responsible for BR system business in Germany. We are in the process of intensifying activities to expand our GSM900/DCS1800 market share and we are looking for a person to manage these activities. In the initial phase this implies heavy marketing work together with a small core team. With a positive development of these activities the responsibility will be widened to complete BUSINESS OPERATIONS for one or more KEY ACCOUNT(S).

Reporting line is directly to the division head and the ideal candidate is today working in a manager position within Marketing and/or Sales at ERA, ETX or MLC/LC.

Contact: Helmut Bursian, +49 211 534-1445, Memo EDDHELB.

#### Met S.A. France

### PROJECT LEADER

5 to ten years experience in design or test - Mobile SOFTWARE designers - 3 to 5 years experience in Mobile - Mobile Testers - 3 to 5 years experience in Mobile or test - Senior Software designers - 10 years experience in Design - Software Production - 1 to 2 years experience in design - Technical Writer for design projects - 1 to 2 years experience in design or technical documentation - Technical Trainers - 2 to 5 years experience in design, test and good ability to communication and pedagogical work.

Please send application to : MET COMMUTATION - 19 avenue Carnot - 91348 MASSY - FRANCE - Human Resources Unit - Martine de Bouville (the company is located near Paris - France). Memo MET.METVME for further informations.

#### Ericsson Telecommunicatie BV, The Netherlands

### TWO TEAM MANAGERS

(1 for Supply and 1 for Support)

At ETM we are looking for 2 team managers, one who is able to handle our FSC for the fixed networks and one for our verification department within the ESO for the mobile networks. They have to structure the work flow regarding procedures and processes. We are looking for real people managers who can inspire our specialists. We are looking for more business oriented managers in stead of technical oriented.(Level = M.Sc.) We are looking for managers who want to be responsible and have experience in the following:

### RECRUITING AXE SPECIALISTS

Taking care of investments. - Proven ability to deal with budgeting. - Good communication skills and ability to deal with the customer and the internal organisation. - Good knowledge of the telecommunication world. - Not afraid to make decisions and meet department goals. - Have a positive contribution to our changing environment (Organisation) - At least 5 years of experience in a management position.

Contact: Jose Katier, +31 1612 29692, Memo ETM.ETMJOA or Rob Veenstra +31 1612 29846, ETM.ETMRVE

#### Ericsson South Africa (Pty) LTD, Pretoria, Republic of South Africa

### PRODUCT MARKETING ENGINEER, SWITCHING AND ACCESS NETWORK SYSTEMS

Telkom SA LTD is the public network operator for fixed network in the Republic of South Africa. Telkom is currently planning to add a minimum of one million lines to its current network to increase the telephone density in the country as well as tendering for access networks. Furthermore, Telkom has an ambitious plan to add some 20 Million lines in the following 20 years. Telkom is also considering new technologies for narrow- and broadband systems to modernize its network.

Ericsson South Africa (Pty) LTD is building up resources to meet this demand. We need to recruit a product marketing engineer for narrow-band and switching networks.

These will be based in our Fixed Network Division in Pretoria.

Main areas of responsibility will include product promotion including customer presentations, preparation of offers and technical proposals to Telkom and all related discussions. Furthermore, as assigned by the division manager, coaching of locally employed South African engineers will be a part of your responsibility.

You should ideally have a number of years of experience of tasks similar to the above mentioned within the Ericsson organization. You shall have competence in respective Ericsson product areas and marketing thereof. Good command of English language is essential.

Contact: Adel Demian, MEMO ESA.ESADEMI, Tel. +27 12 326 3318 or Göran Åhlgård, MEMO ESA.ESAGOAH, Tel. +27 11 447 6440.

#### Ericsson Ltd, Guildford, United Kingdom

### EX659 - PROJECT MANAGER

The Project Manager will be expected to project manage on behalf of the Ericsson Support Office (ESO), all CME20 and TACS releases of both new/changed functionality and fault correcting Application Systems Modification packages. Prime interface will be the Nodes as Suppliers to the ESO and internal customer project managers as ESO customers. Knowledge of both Ericsson ASM workplans and project management techniques are essential.

If you are interested, please send a CV to Liz Jacobs (Personnel Officer) at Guildford.

#### Ericsson Ltd, Guildford, United Kingdom

### TACS (CMS8810) TECHNICAL SPECIALISTS & SOFTWARE DESIGNERS

The newly formed TACS System & Development group at ETL/R Guildford, England is worldwide responsible for the TACS Mobile System. We are looking for AXE design professionals with the skills to contribute to this new group.

### CMS88 TECHNICAL EXPERTS

Working within our TACS System Team you will be working with quick study technical reports, prestudies & feasibility studies. You will have regular contact with TACS product management and world-wide local product management.

You will have significant AXE design experience, with a solid understanding of the CMS88 mobile system and particularly the MTS subsystem. Technical expertise and commercial awareness will be highly valued for this key role in supporting TACS customers worldwide.

### AXE SOFTWARE DESIGNERS

Working within our MSC design team, you will be working with 'fast cycle time' projects, offering you exposure to the complete software design lifecycle: from prestudy to FOA. You should have all round AXE design & test knowledge, with good team-building abilities.

Contact: Clive Oates, +44 1483 305294, Memo ETL.ETLCLQA, fax +44 1483 305364 or Helen Bennett, +44 1483 305118, ETL.ETLHNS, fax +44 1483 305090.

#### Ericsson Ltd, Guildford, Surrey, UK

### MASTER-TACS ORGANISATION IS EXPANDING ITS "TACS-FORCE"

The Global Support Office (GSO) for TACS is responsible for providing new application Systems, CNA's and ACA's to almost all TACS markets in the world. We also do TR-handling, Trouble Shooting and give support to the TACS-ESO's at TEI, LMI, EPK and ETL. We are also responsible for FOA implementation on any chosen FOA market. Later this year CHINA will become part of our MASTER-concept and we then become the ultimate support responsible organisation for all TACS-markets.

To be able to satisfactorily fulfil our commitments we have to expand and we have the following open opportunities:

**EX634 - AS-DESIGNER** Responsible for AS-specification of new AS's and for keeping the structures, documentation etc of existing Master-TACS AS's up to date. Responsibility for program production and library ordering is also within the role description. We require somebody with very good knowledge of AS-specification but not necessarily within the mobile area.

**EX623 - TACS TROUBLE SHOOTER** An experienced trouble shooter from CMS88 (TACS or AMPS) would find this position challenging. You will work within a team of very skilled experts and you will have lots of opportunities for personal development. Trouble shooters with experience in a different background will of course also be considered.

**EX621 - TACS TEST AND VERIFICATION** Because of new application systems, our commitments to release CNA-s and approved correction packages, we need an experienced tester.

You should have experience of AS-verification, know the relevant procedures and be familiar with working in test

plants. You should also have done CNA-verification and/or testing of corrections. Having worked with mobile applications is a plus.

Contact: Gosta Jonsson (Master TACS Manager), +44 1483 305356 (ECN 832 5356) Memo ETL.ETLGAJN or Liz Jacobs (Personnel) +44 1483 305213 Memo ETL.ETLZJS.

#### Ericsson Telecomunicazioni, Rome, Italy

### SENIOR TESTERS (2) AND JUNIOR TESTER (1)

Ericsson Telecomunicazioni is the supplier of one of the biggest TACS network over the world. The current network is upgraded to the package 91B2(CNA-9). In 95 the network will be upgraded to the package 92C+A and to support such activity we need people for system verification. You will work in close cooperation with our people in internal verification, acceptance test with customer and field support for first installation (FOA).

Candidates applying for Senior Tester positions should have at least four years of experience in A.S.V. for MTS (CMS 88) and some experience on the package 92C+A. Candidates applying for the Junior Tester position should have at least two years of experience in A.S.V. for MTS and some experience on the package both positions some experience on Stand Alone HLR is also required. Contract would start immediately and the duration is 6-9 months.

Contact: Nazzareno Fattori, +39 6 72582823, Memo ETL.TA.TEIFAT

#### Ericsson Communications Inc., Montreal, Canada

### TESTER - APZ FUNCTION TEST

We are in the process of building an APZ Function Test group. We will be performing APZ-CS FunctionTest activities in a CMS 88 environment. We are looking for a tester interested in performing function testing on APZ 211 11, APZ 212 11 and APZ 212 20. The group consists of a dynamic team of 4 testers.

Two years of experience with AXE: APZ/APT software testing, verification and/or technical support is requested. A good knowledge of Ericsson computer tools (PLEX,ASA, TCL, AUTOSIS, MHS, SUN/UNIX, MSDOS/WINDOWS) would be a definite asset. The ideal candidate should have knowledge and interest in APZ subsystems (RPS, CPS, MAS, DBS). This position offers an excellent opportunity to develop APZ function testing & troubleshooting expertise in CMS 88 environment.

Contact: John Wai, 1-514-345-7900 Ext:2045, Memo LMCJOWA.

#### Ericsson GmbH, Duesseldorf, Germany

### SENIOR MARKETING ENGINEER

For the marketing group within our Marketing and Projects-GSM department we are searching for a Senior Marketing Engineer. The main tasks will be as follows: - preparation and follow-up of offers - handling of customer requests and queries - product presentations - product planning together with Product Management - preparation and negotiation of supply contracts - handling of contractual questions towards customers

The requirements are as follows: - degree in industrial engineering or electrical engineering - experience in Marketing of GSM, CME 20 System or telecommunication products in general - open minded, flexible, organised - used to work against tight dead lines - fluent English, good German knowledge

Contact: Bernd Kulms, + 47 211 534 1214, Memo EDD.EDDBERND.

#### Ericsson Radio Systems AB, INDONESIA, INDIA, TAIWAN, SOUTH KOREA

### LOCAL PRODUCT MANAGERS (LPM)

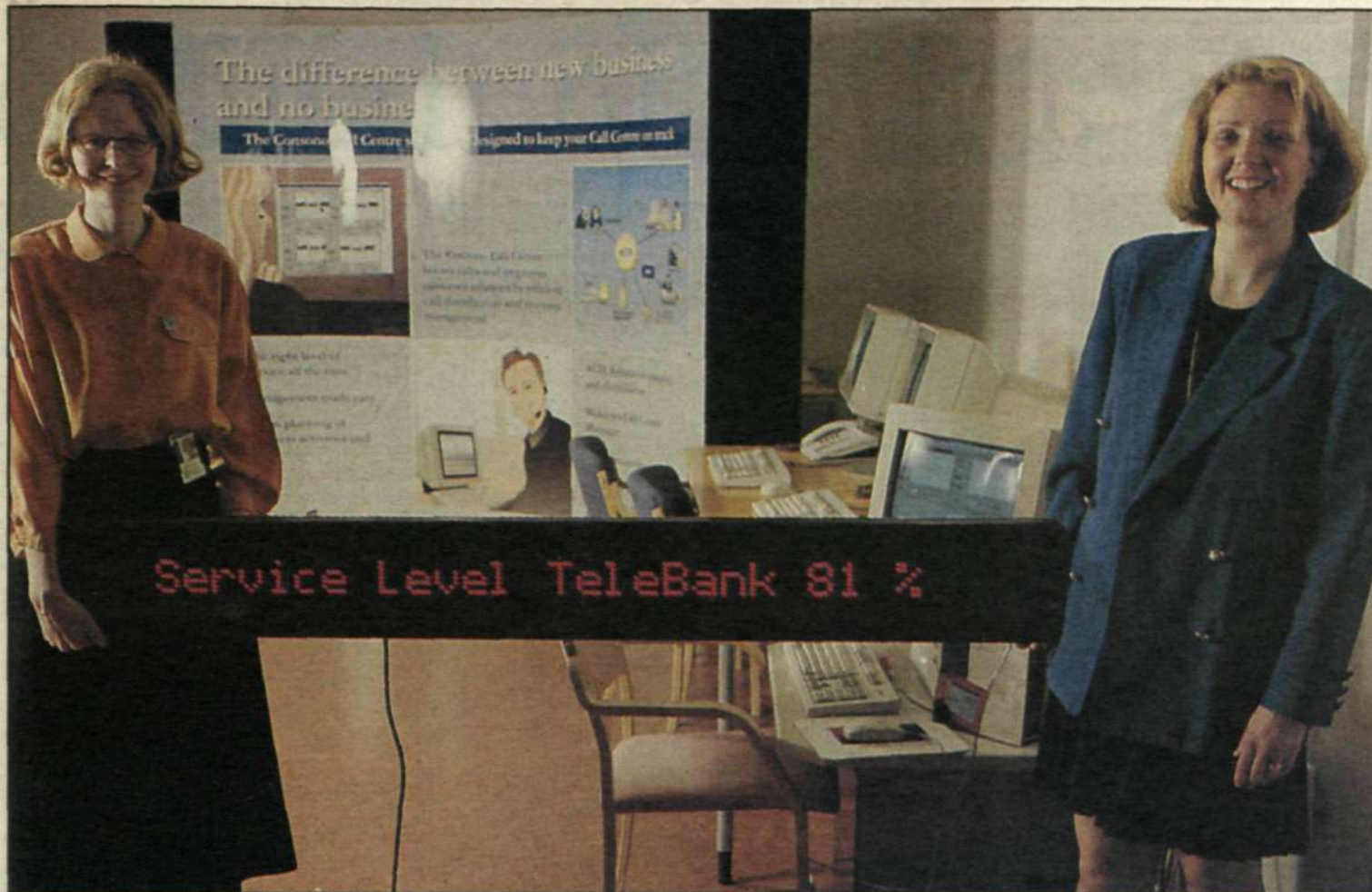
The growth in the Asia/Pacific region is tremendous. We have 4 NMT, 3 TACS and 13 GSM/DCS customers in the region and new business opportunities exists in all countries. To take this business opportunities we need to strengthen our local companies with skilled technical personnel. We are now looking for LPMs to ERINDO, ERI, ERT and EKK.

Your responsibility will be: Pre-tender phase: Support the Marketing with technical presentations and in technical discussions. Tender phase: Coordinate all technical work in our offer, eg. capacity calculations, 3rd party equipment, dimensioning, network design, tech. SOC. Project phase: Give all technical data to the Project mgmt. (perform the Network Design activity) Technical support the Project Mgmt during the project. Operation phase: Technical planning (ASM plans) together with customer, and Support organisation. System performance issues.

You should have GSM competence. You should have worked at least 5 years within Ericsson with Product Management, System Design, System Verification or System Support.

Contact: Jan Lönnström, +46 8 7573314, Memo ERAJAL, Fax your appl to LN/SC Lönnström, +46 8 7575810.





Inger Söderbom and Charlotta Sund demonstrate a sophisticated feature of the new Call Center Manager supervision program. The wall screen displays the latest call traffic information, helping call handlers to keep track of the current traffic status.

# New way to develop programs

**Now corporate customers who use the Consono MD110 PBX Call Center to queue incoming calls can use the most advanced system on the market for supervision and statistics.**

**The focus was on the user when the new Call Center manager system was developed. The product is the result of a multipurpose project carried out by the Business Communications division of Ericsson Business Networks.**

"When we developed this software, we worked in a new way and used methods not previously used at Ericsson," relates Inger Söderbom, project manager for the project.

A key factor in the success of this project was that every function involved in steering the product from initial concept to customer readiness was represented in the project right from the start. Moreover, in contrast to many previous projects, it was not a question of first developing the product, then devising a marketing strategy. On this occasion, the marketing, delivery, service and maintenance aspects were all considered from the start.

Technical development was carried out at Ericsson Business

Networks' software development center in Cypress, California.

Customers who will be using the software in their day-to-day operations actively participated in the development work.

"With the aid of product managers at the local companies in the U.S., Germany and the U.K., as well as Telia in Sweden, we selected a number of Call Center customers and invited them to all-day practical sessions," relates Inger Söderbom. "We adapted the product to the user instead of the other way round."

Later on in the development process, actual field trials were conducted in customer environments in Germany, the Netherlands and Australia.

## User-friendly

These efforts resulted in an up-to-date tool with clear graphics and self-explanatory routines. Satisfied customers have already commented that the program is so easy to use that the manual is unnecessary! When Inger visited customers helping with field trials in Germany and the Netherlands, they informed her that it only takes an hour and a half to learn to operate the program.

These, of course, were experienced users familiar with operating a Call Center, but the new program is also designed to be easily operated even by a customer who is starting from scratch. Call Center Manager comprises a box of diskettes, manuals and

license agreements, just like any other software package. This package typifies the way data-processing systems and telecommunications are finally merging.

## Parallel products

The new product also includes a support package. The customer will not be left in the lurch but will instead be offered consulting services in the form of prepaid time units which are sold with the software. Ericsson representatives are currently being trained so that they can help customers to install the software and learn the system.

Call Center Manager is aimed primarily at new customers who purchase Consono Call Center. Upgrades are also offered to customers who are switching over from Manager Information System (MIS), the earlier supervision software.

"We shall continue to sell both products," says Inger. "CCM is the obvious choice for customers who need an easy-to-use program and flexible information access, but MIS users who are happy with the system will naturally continue to use it."

## Easy to sell

Call Center Manager is offered in a wide range of packages, from the smallest size, capable of handling ten incoming calls and providing supervision, up to virtually any size the customer requires.

Charlotta Sund, who has been involved in the marketing side of

the product from the start, summarizes the new product: "It has been extremely well received. We are currently busy with internal marketing to Ericsson local companies and have encountered keen interest. We organized road shows in a number of European countries in conjunction with the Consono product launch. We have already had a stream of new customers from Finland, Italy, Sweden, Australia and other countries."

## Competitive advantage

"The Call Center function is an important feature of the Consono MD110, and we undoubtedly derive a competitive advantage from being able to offer this package, Charlotta continues."

After seeing Call Center Manager in action at the CeBit trade fair in Hanover in March, the German Federal Post Office ordered 33 Consono Call Centers with CCM, which will be ready to go into operation in June.

Inger Söderbom and Charlotta Sund see enormous advantages in the coordinated development work on Call Center Manager.

The respective areas of expertise of the participants have complemented each other in a constructive and positive way. Both of them regard this as the way projects will be handled in the future. Everybody gets to know the product, not just the technicians. As soon as the product exists, the sales drive can begin.

Kari Malmström

## Call Center tallies calls

**The purpose of a Call Center is to receive incoming calls in the proper order and distribute them among a number of operators. If no operator is available to take the call, it is placed in a queue. Most modern corporate switchboards provide a facility to organize a queuing system.**

The Consono MD110 includes the ACD (Automatic call Distribution) system as standard. Price inquiries from potential customers show that approximately 60 percent of new customers want to have this facility, even if they do not plan to use it immediately.

The ACD function can generate several different queues for call handlers having different areas of competence or responsibility. Callers can be directed to the appropriate call handler by using different telephone numbers, or by pressing a series of buttons under the guidance of a voice answering system. There is no need for someone calling a travel bureau to book a trip to contest a place in the queue with someone who simply wants to check a departure time.

## Watching eye needed

ACD handles the traffic, but provides no information about what is happening in the system. This requires a helper in the form of a supervisory system. How many incoming calls can be accepted? When is the call load greatest? How many customer call handlers are needed at different times?

Like its predecessor, Manager Information System, Call Center Manager can answer all these questions, but the new system is more versatile, being able, for example, to provide preprogramming and automation of processes. Call Center Manager runs under Windows, making it more user-friendly.

## Can be customized

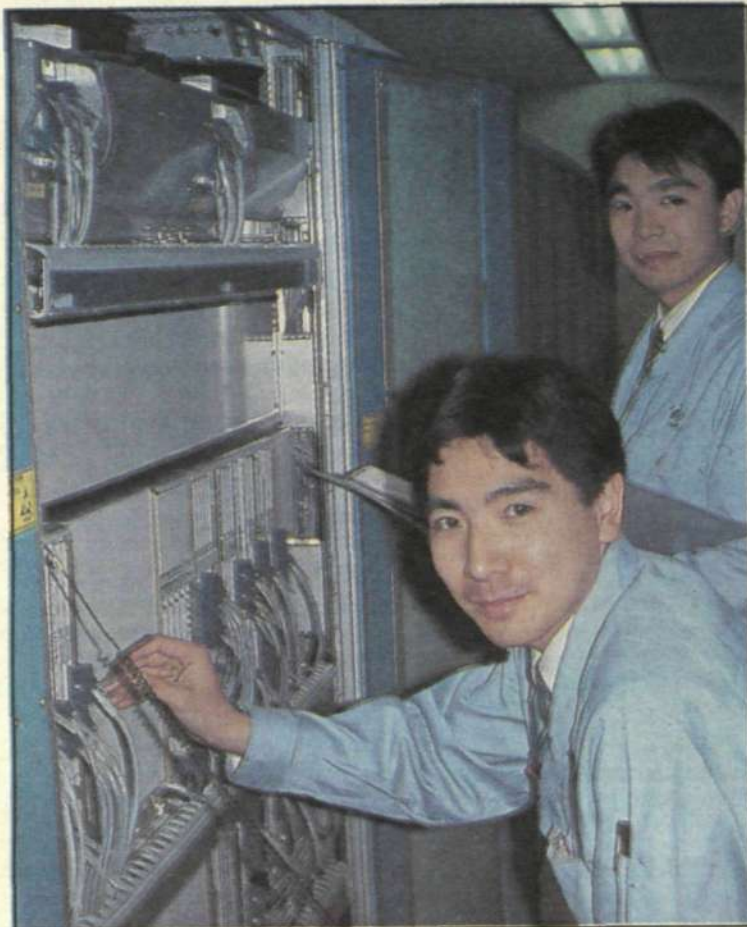
The person supervising traffic looks at information displayed on his or her terminal, but it is by no means unusual, especially outside Sweden, for larger call centers to have a large wall-mounted screen so that all the call-handlers can have an overview of what is happening.

Real-time supervision enables extra manpower to be deployed at peak call times. Put simply, call handlers can postpone their coffee break for a while if they can see that the system has just accepted a rush of incoming calls. Reliable statistics provide an overview and enable every call center to be customized to suit customer needs.

Kari Malmström



# AXE gets a foot in the door in Japan



To facilitate future customer contacts and to further "Japanize" Nippon Ericsson, the company is employing more local personnel.

Since last August, Morgan Bengtsson and his colleagues at Nippon Ericsson have been anticipating the signing of the contract. The deal is now concluded - and the way is clear for the continued expansion of the world's second largest telecom market. For some time, Ericsson Toshiba has enjoyed a very strong position within Japanese telephony. By virtue of this contract, Ericsson has also established itself as a supplier to the public telecom network in Japan.

The first order covers an international exchange, an "intelligent" network system and a system of advanced network services. The entire system is projected to be in operation by October 1, 1996, and will be one of the most advanced exchanges Ericsson has delivered.

The customer is International Telecom Japan (ITJ), and is one of Japan's three international operators. The company is part-owned by the Mitsui, Mitsubishi and Sumitomo trading houses, and presently handles 18 percent of Japan's international telecom traffic.

## Competitor's home turf

The order was won in the face of competition from all the world's large telecom companies. In the final battle, only Ericsson and Japanese NEC remained on the field.

"It was of course gratifying to beat NEC on its own home turf," says Hadar Cars, who is marketing manager and responsible for the handling of this deal. "It is an event of significance when a Japanese company signs a contract with a new supplier - particularly if the new supplier is a not a Japanese company."

Ericsson has successfully adapted to the Japanese business

## Important order clears the way for expansion in public telecom networks in Japan

culture, which is characterized by a long-term view and very close relations between supplier and customer.

## Ten years' experience

"I believe that, generally, we at Ericsson have a more flexible way of working than, for example, our American competitors," Hadar Cars points out. "Moreover, the Swedish way of conducting business resembles that of the Japanese, much closer in fact than the somewhat aggressive American style, which does not find favor here."

Industry know-how is another important factor. Morgan Bengtsson, who is responsible for Nippon Ericsson's operations in Japan, has during a 10-year period established a broad network of contacts within the country's telecom industry, not least with the important Ministry of Post and Telecommunications. Contacts are always important, but in Japan they are dir-



The deal is now concluded - and the way is clear for the continued expansion on the large Japanese market.

ect preconditions for doing business.

Moreover, it takes time to become acquainted with and understand the Japanese telecom market. This at least, has been the experience of Ericsson's American competitors.

## Properly established

"Our knowledge of the Japanese market and the network has grown enormously since we first arrived here," says Morgan Bengtsson. "And becoming properly established has been decisive for creating customer confidence."

Although the deregulation of the telecom market is occurring later than in the Western World, it is nonetheless a fact even in Japan.

"NTT (Nippon Telephone & Telegraph) still retains a de facto local-traffic monopoly, Hadar Cars relates. "But there is a possibility that the company will be broken up, with new constellations formed. We hope of course that this will result in even more attractive opportunities."

"One conceivable outcome is that the international operators will merge with the long-distance operators; another is that the Japanese cable TV companies will obtain permission to conduct telephony operations. Because we already have a smoothly functioning installation in operation, we are well positioned to conduct business in both areas.

## Technology in detail

One reason why the customer took so long to sign a contract was their desire to learn the system in advance. The technical specification has grown to considerable size, no less than 30 cm thick. This is quite typical in Japan.

"ITJ is fully abreast of the situation and has accumulated as much know-how as possible prior to delivery," says Morgan Bengtsson. "In their view, the initial phase is simply an internal training process."

"The buyer wishes to know exactly what is being obtained before signing a contract. Tech-

nical discussions have consumed the most time, possibly as much as 80 percent."

"It is possible that technical discussions were more detailed than what would have been the case with a Japanese supplier to remove any uncertainty about whether we really understood their requirements."

## Language barrier

Another factor causing delay was that discussions were conducted through interpreters, with all documentation being translated to Japanese.

"Communicating through interpreters is time-consuming but totally necessary," relates Morgan Bengtsson, who speaks Japanese but tries to avoid using the language when conducting business. "Misunderstandings can easily arise due, not least, to the fact that the Japanese language is so rich in shades of meaning. Moreover, English expressions frequently have a wholly different meaning here!"

"To facilitate future customer contacts and further "Japanize"

Nippon Ericsson, the company is employing more local personnel. This has become considerably easier than it was just a few years ago. People have become aware of our successes and realize that we have come to stay."

## Good to be focused

The first deal has been of relatively limited scope and focused on a single customer. There are advantages to this approach.

"We and our colleagues here in Sweden have succeeded in establishing a very close relationship with ITJ, thereby becoming well acquainted with local requirements and preferences," relates Fredrik Ragne, who recently took over local project responsibility for ITJ.

He points out how important it is that the development department home in Sweden also become acquainted with the customer and to understand local market demands.

"At times, our colleagues in Sweden may have considered the customer's questions to be excessively detailed. But it is my

belief that we will all benefit from the detailed know-how we have been compelled to acquire during the course of the project."

At Ericsson in Tokyo, there is considerable gratitude for the strong support provided by their Swedish colleagues. It is hoped that the project will have positive effects for the entire range of Ericsson operations.

"Within mobile telephony, our Japanese project has definitely paid off, not least in our quality work in production," says Morgan Bengtsson.

## A foot in the door

After obtaining this important order, Nippon Ericsson's future prospects are undeniably bright.

"We have now gotten our foot in the door," says Hadar Cars. "If we can also point to a smoothly functioning reference installation, it further strengthens our position. However, it is important that we not make any missteps. Unquestionably, we are under observation - both by the authorities and our competitors."

Jan Kind

# Conference on the future of microelectronics

The tenth European Microelectronics Conference was recently concluded in Copenhagen. The conference is held biannually and is arranged by the International Society of Hybrid Manufacturers, ISHM. It will be held next in Venice in 1997.

The focus of the conference is strictly on the technological trend within microelectronics. The attendees are not the normal run of end-users but consist mainly of suppliers of materials, technology and equipment, as well as designers and process technologists whose focus of interest is hardware.

For the exhibits, preference was given to the East European countries with the theme "Gateway to Eastern Europe." The purpose was to facilitate contacts between East and West.

"In recent years, the conference has been broadened from purely hybrid circuit technology to include all segments of microelectronics, with an emphasis on the miniaturization process, multi-chip modules and fiber-optic link-up. The technologies tend to blend together and attract, for example, those who formerly were PC card fabricators," rela-



Bernt Ericsson, left, delivered an introductory address on developments in telephony technology that merited considerable acclaim. He is shown together with Eva Höök, who is responsible for communications within microelectronics, Ericsson Components, and Jens Ramskov, director of public relations for Ericsson in Denmark.

tes Anders Åberg, who is responsible for marketing of microelectronics at Möndal and Lars-Anders Olofsson, development engineer from Ericsson Components.

## Known name on the map

This year, Ericsson Components and Microwave Systems held a joint exhibit. The purpose of the conference is not to sell but to become established on the map of Europe. Numerous strong contacts were established as the basis for future activities.

"Ericsson demonstrated a broad, solid expertise within

microelectronics. Microwave Systems' advanced modules, combined with Ericsson Components' hybrid circuits, and a video describing the new submicron factory, were main objects of interest," Anders Åberg relates.

The conference attracted an exclusive group of the world's specialists, totaling 600 to 700, which included visitors, exhibitors and lecturers. ISHM membership confers the right to conference participation, and information on developments within ISHM.

Inger Björklind Bengtsson

# ASIC Forum focuses on customized circuits

Ericsson is moving closer to the consumer-oriented mass markets of the future. This places new requirements on developing customized circuits. This was one of the conclusions reached by the participants at this year's ASIC Forum.

It could well be called the "Forum for Continued Success." Although for the participants, it is known as the ASIC Forum. It is a name that has already begun to represent a certain concept, despite the Forum having been convened only two times. Last year's conference was in Rome in early May, with this year's gathering held in Stockholm.

"The purpose is for those who work with customized circuits to get together for experience exchange. The participants also attend presentations and have access to current market developments," says Eskil Kjelkerud, Ericsson Components, chairman of the program committee for the second Forum. "Last year, 40 attended, this time we had to set the

limit at 65; the premises were booked would not have accommodated more."

During two days, the participants were treated to several interesting lectures, and visited Eltelmet in Älvsjö and Ericsson Components in Kista.

The lectures encompassed everything from Ericsson's overall strategies and goals, down to the most minute details in circuit design.

"Increasingly, our telecom networks are serving as Bit-transport devices. Accordingly, price is assuming greater importance. The price competition will become even tougher, commented Bernt Ericsson," Research Vice President at Ericsson.

"Today's networks will develop into less complex systems. Transfer costs will become progressively lower. We must manage to mass produce simpler products with higher operating security. To succeed in this requires that certain goals be reached, such as shortening design times."

## Close to the consumer

Bernt Ericsson also predicted that Ericsson's markets would become increasingly consumer-

oriented. This will mean intensified demand for simple, easy to use products.

"We must begin to study what is happening in the consumer sector and analyze what is being used," he said in conclusion.

Ulf Hagström, product manager at Ericsson Radio Systems, also touched on user requirements.

"Within mobile telephony, we must, for example, develop base stations that are less sensitive to climate, which also require less energy for operation."

Jan Kismalm, who is responsible for overall technical coordination within Ericsson, was of the opinion that production of more mass-market products requires that more standards be developed.

In addition to the in-house lecturers, Brock Barton from Texas Instruments and Professor Christer Svensson from the Linköping Institute of Technology also participated.

The attendees came from all over Europe, with North Africa and Australia also represented. Another ASIC Forum is planned for autumn.

Lars Bäck



# CONTACT

Ericsson, HF/LME/DI, Room 811051, S-126 25 Stockholm



A cheerful group of secretaries from Africa on a visit to Stockholm. Standing, from left: Sabah Dawoud, Eva Mårtensson, Fatiha Djaouat, Gunn Hachicha, Charmaine Marcus. Seated, from left: Lynette Benade and Zahra Selami Banchereau.

## From Africa to Stockholm

**A packed program awaited the six secretaries from Africa who took part in a ten-day training program at Ericsson in Stockholm. The participants came from Ericsson local companies in Libya, Tunisia, Morocco, Algeria, Zimbabwe and South Africa.**

"We plan to set up a network for secretaries in Africa," relates Eva Mårtensson, who is a secretary in the marketing division for Africa. "The aim of the network is to provide a rapid and simple way of keeping secretaries up-to-date and informed about news, new rules and developments in the area of secretarial work in Sweden and other parts of the world, and to establish personal contacts."

### **Inquiry from Libya**

"In addition, we plan to establish training programs for ongoing competence development," continues Eva. "For example, we are examining the feasibility of implementing various types of distance courses."

"The idea of providing some kind of training for secretaries has existed for some time," explains Eva, "so it was an added incentive when Göran Franzén, head of administration at Ericsson's Libyan office, contacted us to ask if we could set up a training program for Sabah

## Secretaries from six countries received further training in Sweden

Dawoud, who has worked as a secretary at Ericsson for 13 years. We decided to invite secretaries from the entire African region."

Secretaries from six of the eight Ericsson companies in the region signed up for the program. Eva handled the arrangements and supervised the participants throughout the course.

### **Busy days**

The days were busy due to the packed program. The participants received instruction in MS Word, PowerPoint and Memo, and had the opportunity to meet people from various parts of the company, including the information and public relations section, the stock control section and the health and medical services center. They also paid a visit to Ericsson Radio in Kista.

All the participants were extremely pleased with the course, commenting that it was well organized, useful and interesting.

"There are many aspects of a secretary's work in Sweden that differ from the

secretary's situation in other countries," comments Zahra Selami Banchereau from Morocco, "so it is important to exchange ideas and share experiences."

"To give one example, we write more letters and other documents for managers than secretaries in Sweden," adds Fatiha Djaouat, who works for Ericsson Algeria. "We also translate large numbers of documents. Due to the small size of many of the local companies, we handle a wide range of different work assignments."

### **Presentations**

At the conclusion of the course, each of the secretaries gave a 15-minute presentation on her home country and work situation for the benefit of the other participants and a number of invited guests.

For some of them, it was the first time they had given a presentation to such a large group of people. However, the presentations went well, and the listeners learned a lot about other countries and the working methods that apply in them.

**Rebecca Redling**

END  
LINE

LARS-GÖRAN HEDIN



## Kick from a change

With the cement-gray Ericsson tower in the foreground and the greenery of Södertörn in the background, I can see out over a good part of Stockholm's southern suburbs. This is an area with Ericsson signs on many of the buildings. And many of my colleagues in the Ericsson Telecom offices in the area are at this moment contemplating what the future holds in store for them. Major changes will be made here during the months ahead, when Ericsson's second largest business area plans to place skilled resources at the disposal of the Group's largest business area.

For the individual, this business of job rotation is nothing to agonize over. On the contrary, it is a positive experience, which can be just the kick one needs. We all need a change of scene at some stage.

On a personal front, I recently changed scene myself. The view I described initially is partly new to me. Previously, I sat in an office looking out through double windows towards the city of Stockholm. However, this view was somewhat limited by the available window area and the skyscraper blocks in the City, which are less than inspiring. Today, the situation is very different. I have moved in with a very pleasant team of colleagues in an area we call the "Corporate editorial office." We have a large area, which will eventually house eight people, who will sit around two massive desks to work with newspaper production and computer processing.

A long row of windows – eleven of them – provide us with the stimulating view described. And I believe the environment we have created will act like a vitamin injection for our creativity. If you have ever seen a real "news desk", you will have some idea of the atmosphere we have established. "Contact" now has a real news room!

And not merely "Contact." Another feature of the Corporate Editorial Office is that we handle the coordinated production and distribution of all publications produced at Corporate Relations – Contact, Connexion and Ericsson Review.

All of us in the Corporate Editorial Office hope that all readers will have a nice second half of 1995!