Winning campaign

The Ericsson brand received a boost from the massive Mobile Internet campaign that was launched worldwide at the end of 2000, according to recently compiled results. 7

From then to now

Mobile telephony is older than most people think. The first system dates from as far back as the 1950s. Read part one of Contact's new series on the development of mobile telephony. 27

Virtual patients

Soon, medical students will be able to practice their skills on virtual patients. Ericsson's patient simulation program is now being tested in Sweden's largest medical school. 23

contact

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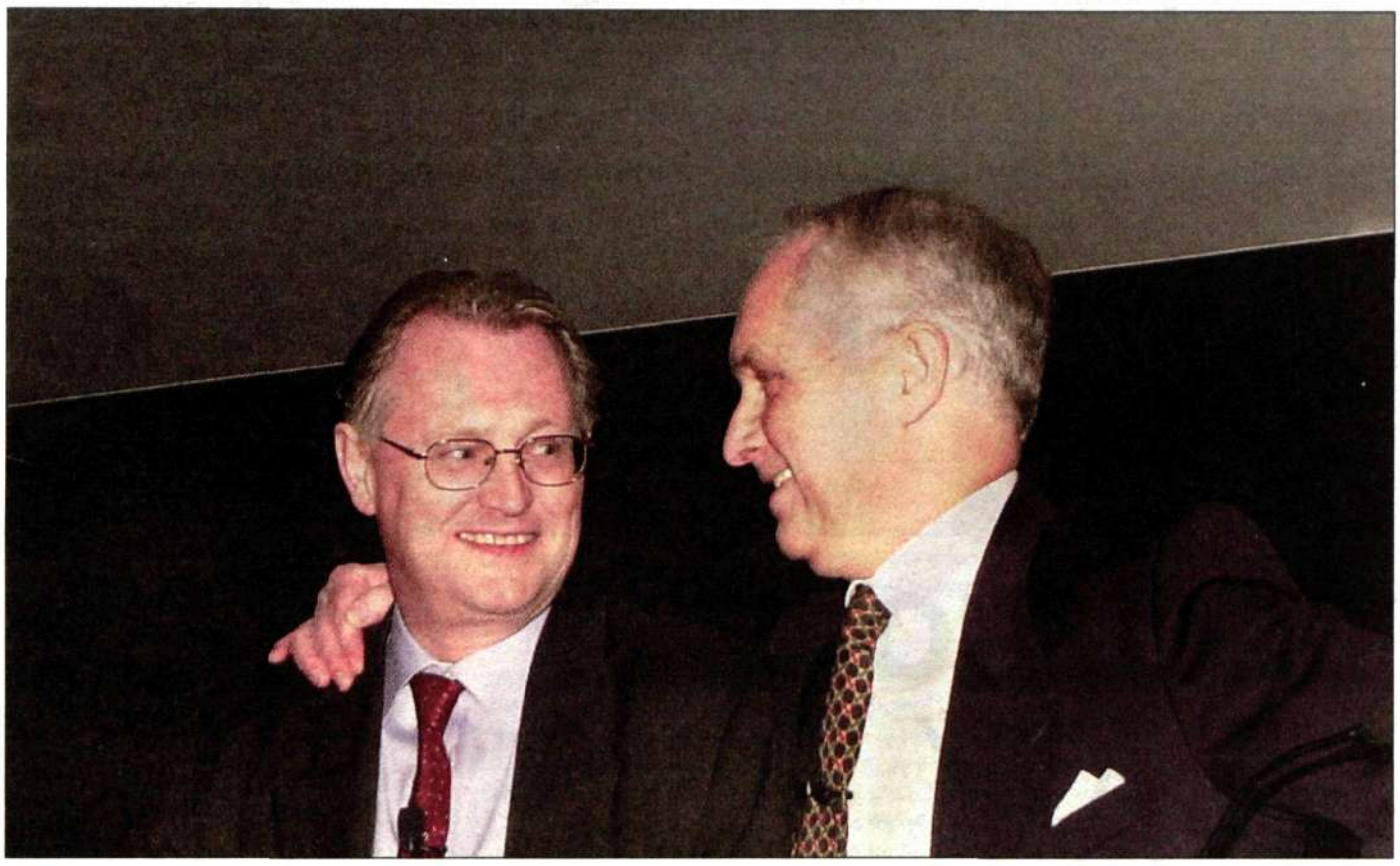
■ NO. 6 · APRIL 5 2001



Kurt Hellström, President and CEO, and Chairman of the Board, Lars Ramqvist, met with shareholders and the media at the Annual General Meeting held at the Stockholm Globe Arena. They were happy to receive continued confidence from shareholders for their operation of Ericsson. Photo: Lars Åström

An unfazed duo

Ericsson's President and CEO, Kurt Hellström, and Chairman of the Board, Lars Ramqvist, will remain in their posts following the Annual General Meeting. Earlier in the week, management presented an action program that will provide additional savings of USD 2 billion within the company. Combined with the necessary cutbacks in the Consumer Products division, savings will total USD 3.5 billion. The action program includes laying off 1,500 employees at Ericsson's Kumla plant and 1,100 at the Linköping facility. In addition, the mobile phone manufacturing plants in Carlton and Scunthorpe in the UK will be shut down. **News, 4–6**

Hellström makes forceful speech

Ericsson has experienced difficult technology shifts before and handled them with ease. Just as we did when GSM was introduced ten years ago, we have the power and expertise to come away stronger from today's challenges. That was the spirit of Kurt Hellström's message at the Annual General Meeting, where he went on the offensive. 3

CeBIT – show for everyone

Several hundred thousand people attended this year's CeBIT trade show in Hanover, Germany. For Ericsson, the show was a big success. Among other things, the company unveiled four new telephone models. The T68, which includes both GPRS and a color display, drew the greatest attention. **8–13**

Ericsson's Senior Vice President of Marketing, Torbjörn Nilsson, unveiled the new models at CeBIT. Photo: Ecke Küller

Major advances in Indonesia

Indonesia is the last major Asian market that Ericsson has yet to conquer. The company is already well on its way. Last year, Ericsson grew to become the country's largest supplier of telecommunications equipment.

"Our strategy was, take on any business that's going. There ended up being far more work than we suspected," says Mats Olsson, head of Ericsson in Indonesia.

Spotlight on Indonesia, 16–18

■ WORLD WATCH

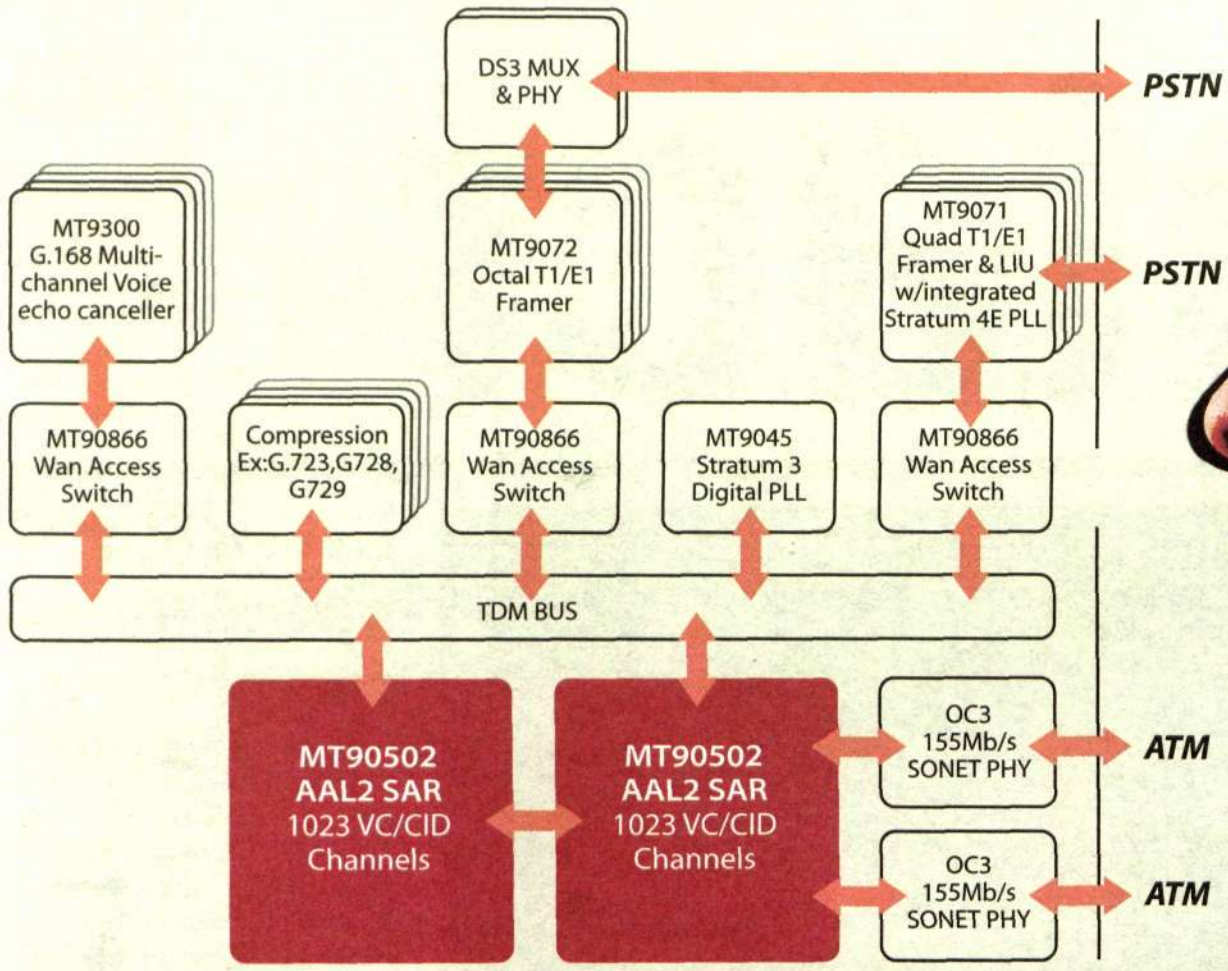
Large numbers of virtual operators have sprung up during the past year – 32 in Scandinavia alone. A new law that obligates *network-owning operators to lease network time to other* operators, has helped fuel this development. 14

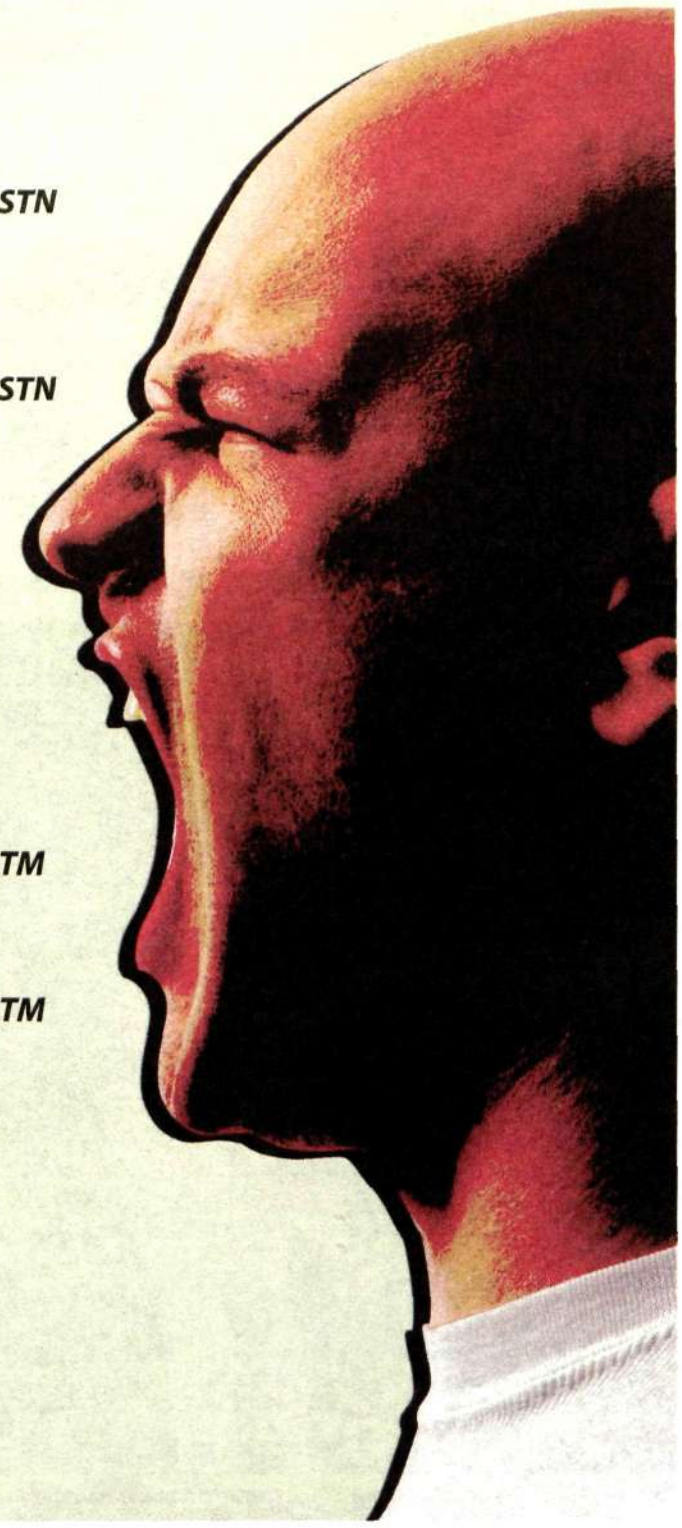
■ AT WORK

When a crisis hits, at work or in private life, thoughts often turn to the bigger issues of life and people have a need to talk. Pastor Louise Linder knows this – she left the confines of the church setting in favor of the workplace. 28

■ TECHNOLOGY

Using Ericsson's new Mobile@Home base station solution, it will be possible to enjoy broadband access to new mobile services such as Multimedia messaging and synchronization. The base station connects to a broadband outlet in the wall and communicates with mobile phones via Bluetooth at distances of up to 100 meters. 25





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Shifts in technology are difficult transitions

Major shifts in technology always mean a difficult transition. Previously, when GSM was introduced, Ericsson handled the change skillfully. This is an important lesson to remember when considering the current problems associated with the introduction of 3G.

"We have the expertise to solve the problems this time, too," said Kurt Hellström in his speech at Ericsson's Annual General Meeting.

Ericsson's President and CEO Kurt Hellström emphasized in his speech to the shareholders at the Annual General Meeting at the Globen Arena in Stockholm that the company will emerge strengthened from the process of change that the transition to third-generation mobile telephony will require.
Photo: Lars Åström

➤ After a year and a half as President and three months as CEO, Kurt Hellström is caught in a storm. Ericsson has been in the Swedish headlines for several weeks.

"I get a lot of coverage in the press, but I assure you that I am not only listening to the media," said the Ericsson President, as he began his speech to the shareholders.

"I meet customers and talk with shareholders, and – perhaps most importantly – I talk with our employees around the world.

"I can assure you that we are working constantly to make Ericsson even stronger. We have had problems before, but have always succeeded in solving them. We have the strength and the expertise to do so again," emphasized Kurt Hellström.

Taking responsibility

"We have learned from the difficulties that we have had with mobile phones, and I want to make one thing clear. We are taking our share of the responsibility. We have implemented powerful measures, in part by outsourcing production to Flextronics. At CeBIT, we presented new phones that were very positively received.

"I also want to make another point very clear. Ericsson is not getting out of the mobile phone business. We are retaining our strategy, which is to be able to supply, and take responsibility for, the entire chain, from systems and services to telephones. But taking total responsibility may assume different forms that do not preclude working with various partners to make our mobile phones more competitive.

"And we are not only going to defend our market share, we are going to increase it," pronounced Kurt Hellström.

Revolutionary shift in technology

"I believe that the shift in technology that the mobile Internet entails will be every bit as revolutionary as the mobile phone. This shift in technology creates considerable tension, but it is also tremendously exciting for our entire organization. Ericsson has a long tradition to rest on and knows how to create a profitable business from new advances in technology.

"One fourth of the company's employees are active in research and development, and a significant number of them are working with mobile Internet," noted Kurt Hellström.

In his speech, Kurt Hellström not only reminded the audience that the mobile Internet is not just about mobile systems and mobile terminals, he also mentioned last year's successful sales of Engine, Ericsson's solution for the fixed networks.

"The upturn in fixed telephony is in large part also a consequence of the Internet revolution. Telecom operators must now modify their networks so that they can effortlessly switch between different forms of access and provide Internet connections from mobile phones," said Kurt Hellström.

New technology takes time

The situation today is similar to the consolidation of resources that took place within Ericsson prior to the launch of GSM, according to Hellström, who added that he and everyone in the company continues to believe in the business opportunities afforded by the shift to 3G.

"3G is needed to expand capacity for tomorrow's mobile telephony. The new networks are already needed to meet the demand from all the users who want to make conventional voice calls via their mobile phones. To these users, we can add mobile Internet users, who are expected to grow to 100 million before the end of this year.

"It will take some time, however, before mobile Internet dominates Ericsson's sales. We know that new technology takes time to introduce," observed Kurt Hellström.

During 2000, Ericsson strengthened its leadership in mobile communications. Mobile Systems increased its share of total sales to 55 percent and reported a significantly higher growth rate than the market as a whole.

"For GPRS, which is just now coming into operation, Ericsson currently has a market share of about 50 percent. It is strategically important for both us and our customers that Ericsson is the leader at an early stage in development," said Kurt Hellström.

"Growth during the 1990s was exceptionally strong, not least due to our investments in GSM. Ericsson succeeded because we already had a strong base in technology, a strong base through our presence in important markets and a strong base in our awareness that change is the key to success.

"One third of the world's expertise in mobile Internet is in Sweden, and most of that expertise is within Ericsson. Our growth during the 1990s was also the result of research and development in other parts of the world, but it was the Nordic countries that led the way when mobile telephony became a mass market," noted Kurt Hellström.

A global leader

Development of the mobile Internet continues. Ultimately this is a matter of new opportunities for communication and relationships between people.

"There are really no limits for what we are working with now. Development in recent years – and the results of successes, setbacks and changes in companies around the world – have made Ericsson one of the world's leading telecom companies. This is of little value in itself, but it is proof of our success.

"At the sale time, all of us, shareholders, management and employees around the world, must realize that in today's dynamic world, success is something that must be won over and over again," concluded Kurt Hellström.

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DID YOU KNOW THAT...

The CeBIT datacom and telecom trade exhibition is the world's largest trade fair.

This year, 830,000 people visited the exhibition. 8,106 exhibitors were packed into an area measuring 422,109 square meters, the equivalent of more than 50 soccer fields.

USD 3.5 billion to be saved in package of measures

The company's executive management team is now acting forcefully to address the economic downswing that resulted in the recent profit warning.

At least a further USD 2 billion must be saved annually in addition to the saving of USD 1.5 billion already required within the Consumer Products Division. The result is a review of costs at all levels.

"The requirement of savings worth USD 3.5 billion will affect all operations. It is essential for the company's future that the measures to improve efficiency are put in place," says Ericsson's President and CEO, Kurt Hellström. Photo: Ecke Küller

Ericsson's top management has presented a program of savings and rationalization measures that is to see the company through the downswing in the global economy that began at the start of the year. The savings are to take effect this year but their full impact will be felt in 2002.

Necessary savings

In addition to the savings required within the Consumer Products Division, presented earlier, which led to the outsourcing of mobile phone production to Flextronics and Arima, the necessary savings now stand at about USD 3.5 billion per year.

"In the slightly longer term, we are still optimistic regarding profitability, both for Ericsson and for the telecom industry in general. However, in the difficult economic position in which we currently find ourselves, this efficiency program is decisive for our future," says Ericsson's President and CEO, Kurt Hellström.

The program of measures will have consequences for all operations, including significant reductions at the production units in Kumla and Linköping in Sweden. Furthermore, the production of mobile phones in Carlton and Scunthorpe in the UK will be discontinued.

The greatest savings will be made within other operations. A complete stop of new recruitment will be enforced throughout the company. The number of consultants, currently about 15,000, will also be drastically reduced, in some cases, by half.

In addition, a thorough review of all other areas is to be conducted: corporate functions, administration, marketing, sales and the supply chain, as well as research and development.

Kurt Hellström has appointed Ingemar Blomqvist to head the efficiency program. Until now, Blomqvist has been responsible for the Japanese PDC mobile system within the Mobile Systems Division. He has until April 20 to present, in conjunction with the quarterly report, proposals for how operations can be made more efficient.

Operations to be reviewed

To begin with, he will collect existing material – local plans for measures, and so on – and take into account points of view from the organization.

Ingemar Blomqvist

"There is a lot of knowledge out there about how operations can be made more efficient. This is as important as talking to managers," says Ingemar Blomqvist.

On the other hand, it is still too early to say how the savings will be made.

"All I can say is that I will review at the entire range of operations. There are no limitations to my assignment."

The measures that are decided will be put into force as soon as possible.

"I am aware of the consequences for the individual of redundancy. We will therefore provide the best possible support for those affected," says Kurt Hellström.

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Tough decision to get results

"Of course it is saddening to have to announce that more employees will have to be laid off, but it is necessary if we are to achieve profitability again."

These are the words of Jan Wäreby, Executive Vice President in charge of the Consumer Products Division. He talks about why it is necessary to keep to the new strategy.

An important step in attaining profitability is the transfer of production and staff to Flextronics and the program of measures affecting those who will be made redundant.

It is now clear that the mobile phone production units in Linköping, Sweden, and in Carlton and Scunthorpe, UK, will be affected more severely than previously expected. In Linköping, a greater number will be laid off than was envisaged and the UK factories will be closed unless a new buyer can be found.

The Kumla factory outside Stockholm, where mobile phone production has more or less ended, will also be affected more than was expected.

Jan Wäreby

"The fact that more employees will have to be laid off than we believed is a result of our discussions with Flextronics and recent calculations. We take great responsibility for those who will lose their jobs and we will, as far as possible, help them find new employment."

Despite these difficult times, Jan Wäreby feels motivated to fight on.

"With our clear strategy, we will return to profitability and, what is more, we will win over new sections of the market. I feel that I have the full support of the senior management and of the entire organization in my work."

In brief, the new strategy comprises three areas: the fastest possible release of GPRS and 3G phones, continued emphasis on operators using TDMA and CDMA 2000 mobile standards, and a significant reduction of overheads and costs.

The strategy represents an adaptation to a changed mobile telephony market:

"The market has become somewhat saturated, it has moved from extreme expansion to weaker growth. Competition is very tough, but we have the technological advantage when it comes to the next generation of mobile phones that can handle GPRS and 3G. We also feel that low-cost telephones will continue to play an important role."

Several operators will be launching GPRS services this year. Jan Wäreby describes the demand for these services and the consumer products that support the technology:

"The operators feel ready to invest in more advanced services now, but it is essential to remember that the ground rule for all mobile services is simplicity. It must be made easier and more secure to work and have fun using WAP and GPRS telephones: It is also important to develop a broad flora of services."

Jan Wäreby believes that Ericsson is well on the way to becoming more attractive even for younger consumers. Here, design plays an important part. Therefore, Nikolaus Frank was recruited at the beginning of the year to lead and coordinate the design process.

Jan Wäreby sees the new design center in Lund as an excellent place in which to collect various fields of expertise to create future consumer product top sellers.

To form the right message in connection with, for example, the launch of a new product, our new PR agency, BBH (Bartle Bogle Hegarty), will play a central role.

"It's great to see that the T20 has become so popular. It's on the right track design-wise. Using the film, Tomb Raider, to display a number of new products is one way of keeping the new positive trend rolling."

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Plants shut down in UK

Waning demand for mobile phones has now also affected Ericsson's plants in Carlton and Scunthorpe in the UK.

Mobile phone production there will cease beginning in September. Everyone involved now hopes that the plants will be purchased; negotiations with various buyers are currently ongoing.

At the end of September the Ericsson plants in Scunthorpe and Carlton will be shut down because of waning demand for mobile phones.

In January of this year, Ericsson announced that Flextronics would be assuming control of its mobile phone production. As a result of the reduced demand for mobile phones, company management has now decided to shut down the plants in Scunthorpe and Carlton, in the UK, at the end of September with production continuing until then. The 1,200 employees will be without work once mobile phone production ends; including part-time employees that figure will amout to some 1,500 individuals.

"The information that was released received mixed reviews. On the one hand, employees are very worried about the future, it's not that easy to find new jobs in the area. On the other hand, they are relieved to know exactly when the plants will be shut down, and what the contract with Flextronics involves," says Steve Andrews, communications manager at Ericsson in Basingstoke.

"At the moment, it doesn't feel good. We're talking about the lives of employees. Negotiations are underway with a number of potential buyers. I hope that one of them will take over operations. That would be the best solution in the current situation."

More than likely, any new company that acquires the operation will be an electronics company, rather than a telecom company.

"Very few employees here are affiliated with a union. If no new company takes over, Ericsson will support the employees with career planning and finding new jobs. But there is no pressing demand for labor in either Carlton or Scunthorpe, so that task will not be entirely easy."

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More layoffs announced in Linköping and Kumla

Ericsson in Sweden is being forced to lay off 1,500 employees at the Kumla plant and 1,100 at its Linköping facility. Negotiations will begin shortly over who will be allowed to stay on.

The Kumla plant will continue its transformation into a dedicated mobile systems unit, with a reduction in personnel from today's 3,200 people to 1,700. Fewer workers will be needed as operations shift their focus towards industrialization and the introduction of new products, rather than volume production.

This is a change that Ericsson shares with many other IT and telecom companies, and which would have been necessary in any event, regardless of changing demand on the systems side. A sombre atmosphere pervaded Kumla following the layoff notice.

"What surprises me is that so many people will have to go. When we switched over from mobile phone production to manufacturing systems last autumn, the management maintained a very positive attitude," says Jonas Brattström, shop steward for the Swedish Association of Graduate Engineers at the Kumla plant.

Pilängen also affected

When the conversion in Kumla was announced in October of last year, Björn Boström, Senior Vice President of Ericsson's Supply and IT corporate function, observed that employment at Kumla was secure. Recent sagging figures for Ericsson's system sales have, however, hastened the unavoidable change. It is not yet clear who will be staying on.

"At the moment, all we know is that the cutbacks must be completed before the end of the year, and that the 1,500 who are laid off will be offered a skills development program with full salary for twelve months," says Jonas Brattström.

Ericsson's distribution facility in Pilängen, Sweden, with about 150 employees, was also included in discussions regarding cutbacks. What is clear is that the US company Flextronics will be taking over operations at Pilängen effective April 17 of this year. The company will not, however, be retaining Ericsson's employees to work at Pilängen. Nor, consequently, will its employees be accompanying Flextronics when it goes ahead with its plan to move operations overseas later this year.

Flextronics more efficient

Flextronics will also be taking over mobile phone production in Linköping at the same time. Flextronics, with its more efficient manufacturing processes, has determined its personnel needs at Linköping to be 475 people. Consequently, 1,100 jobs will be cut in Linköping, rather than the 500 announced in conjunction with Ericsson's year-end financial report in January.

Financial assistance

Eric Rynestad, local chairman of the Swedish Metal Workers' Union at the Linköping plant, believes that production could have been made more efficient without having to bring in Flextronics.

"We have, on several occasions, pointed out to management various items that needed improvement here at the plant. But instead of listening to our suggestions, they continued to operate in the usual manner, until it was no longer viable. Layoffs would not have had to be this extensive."

The 1,100 employees who are being laid off, will continue to receive financial assistance for one year and help to retrain and find new jobs.

Jenz Nilsson
Lena Widegren

Flextronics to take over

After weeks of final negotiations, the contract between Ericsson and the US contract manufacturer, Flextronics has been finalized. Flextronics will assume responsibility for the production and delivery of mobile phones, as well as for personnel.

Through the collaboration Ericsson can concentrate on technology, design, marketing, brand building and sales of mobile phones, which are core operations. At the same time, Ericsson will gain access to an enormous production network through Flextronics' presence in 30 countries on four continents, providing more flexible production at a lower cost. A highly competitive market has forced Ericsson to reduce production costs to a minimum. Ericsson expects the new collaboration will generate cost savings of USD 1,5 billion for the Consumer Products Division, starting in 2002.

As announced at the end of January, several plants around the world will be transferred to Flextronics. Currently, negotiations are taking place or have been completed at five locations in four different countries. They include the facilities in Linköping and Pilängen in Sweden, where Flextronics will now be taking over. The same is true of Ericsson's operations in Shah Alam in Malaysia and São José dos Campos in Brazil. Negotiations will continue for a few more weeks with Flextronics in Lynchburg in the US.

Flextronics is the world's second largest contract manufacture of sophisticated electronics, and has several of the major mobile phone suppliers as clients. That provides Flextronics with the capacity to assume control of all the links in the production chain. The company has extensive experience of low-cost mass production and the knowledge to handle the transfer of large production volumes.

Ericsson has worked together with Flextronics for several years. In 1997, Flextronics took over Ericsson's plant in Karlskrona, Sweden. Since then, the partnership has expanded rapidly and today includes collaboration between Flextronics and several of Ericsson's divisions at over 20 facilities.

Altogether Flextronics employs some 80,000 people and has earnings of USD 13 billion per year.

With this new contract, Ericsson will become Flextronics' largest customer.

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Reduction in use of consultants workers

As part of the current efforts by Ericsson to reduce costs, the number of consultants is to be cut back immediately.

A management directive says that consultant costs must be reduced, all assignments should be reviewed and consultants, if possible, must be replaced by Ericsson employees.

The aim is to reduce the number of consultants substantially by the end of this year.

The directive is for all Ericsson companies, world wide. It points out that Ericsson has a tough time ahead of it and there is a strong need to change behavior to become more cost conscious.

Cutting down on consultants is part of this process, and all current and future assignments should be reviewed.

Management must consider whether it needs the consultants or whether it is possible to replace them with existing employees.

Consultants from non preferred suppliers are to be replaced by those on the Preferred Supplier List.

If management needs consultants from non preferred suppliers, this must follow the approval process which applies to new assignments.

Signed off

For those assignments that are new, renewed or prolonged, consultants cannot work without an approved purchase order, and invoices without an order reference will not be paid.

The contracts must be signed off by the CEO, Market Area Head or Business Division Head and formally approved by LME/DS.

"It is extremely important that we get a better overview and control over how we use consultants," says Bo Westerberg, Vice President of Corporate Sourcing.

"Today, we have a purchase order for only 50 percent, and this is something that needs to change."

Positive financial effect

Bo Westerberg believes that the new directives can have a positive effect on the company, not only from a financial point of view.

"All Ericsson companies will be forced to look over their use of consultant suppliers. This should lead to consultants being used more efficiently than they are today."

The management directive on consultants covers all resources not employed by Ericsson.

The main areas are: R&D, other technical consultants, IS/IT, Management, Marketing Communication, Education & Training and Staffing Service Personnel.

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Closely watched meeting holds no surprises

Ericsson's President and CEO, Kurt Hellström, and Chairman of the Board, Lars Ramqvist, will hold onto their posts.

The company's two largest shareholders, Investor and Industrivärden, announced that they have full confidence in Ericsson's management at the Annual General Meeting.

Over 3,000 of Ericsson's shareholders gathered at the Stockholm Globe Arena for the Annual General Meeting. Many of them arrived two hours before the doors even opened. Photo: Lars Åström

"In this vulnerable situation, it's important that we shareholders not overreact and make changes brought about by panic. Investor continues to have full confidence in Ericsson's management and board of directors," said Percy Barnevik, Chairman of Investor AB.

This year's Annual General Meeting drew a great deal of attention from the media. Over the past couple of weeks, television, radio and newspapers have done their utmost to drum up support for a showdown between shareholders and Ericsson's management.

Demanded resignation

Initially, at least, the wishes of the media were met. Lars-Eric Forsgårdh, Chairman of the Swedish Association of Share Investors, stood up in front of almost 4,000 participants at the Stockholm Globe Arena and demanded the resignation of the company's management, and calling for Lars Ramqvist to be replaced as Chairman of the Board.

"The Ericsson ship has run aground and there is nobody in the company's management that can get it moving again. Captain Ramqvist has proven to be a poor navigator and the confidence of the Association of Share Investors in him has been driven into the ground," said Lars-Eric Forsgårdh.

He encouraged Ericsson's two primary owners, Investor and Industrivärden, to look for a new chairman and proposed Investor's Percy Barnevik as a suitable replacement – a suggestion Percy Barnevik was quick to reject.

Bo Rydin, chairman of Industrivärden, also gave Ericsson his support, asserting that it is important for management to now have a chance to work in peace, in order to prepare for coming challenges in the best manner possible.

Many shareholders wondered how long it would take for Ericsson to regain the leading position in mobile telephone sales that the company enjoyed several years ago.

"We've had large losses on the telephone side in recent years due to various factors. Some of those have been our own doing, while others have been beyond our control, such as the fire in New Mexico, where telephone components worth enormous sums went up in smoke," said Kurt Hellström.

"Ericsson is currently working hard on the telephone side and I promise you that within a year we will be presenting a powerful new generation of mobile phones."

New name on design front

One of the evening's youngest participants was 14-year old Andrea Ringblom, of Stockholm, who wondered why it is taking such a long time for Ericsson to alter the designs of its mobile phones.

"Changing a phone's appearance takes time and we are, as I mentioned, in the middle of that transition now," said Kurt Hellström, who invited Andrea Ringblom to visit Ericsson's designers so that she can convey her opinions directly to the design group.

A decision was made at the Annual General Meeting not to change the voting differences between A and B shares. Shareholders did approved an incentive program that includes a shares and options program.

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Mobile Systems tightens its belt

A freeze on recruitment, fewer consultants and a heightened awareness of costs on the part of all employees. These are a few of the key points in an action program that is to be implemented at the Mobile Systems Division.

"Our operations are performing well, even if we are feeling the effects of the slowdown that is affecting the entire industry. As a result, it is essential that we apply the brakes in time," says Mats Dahlin, Executive Vice President, Mobile Systems Division.

The program of action implemented at Mobile Systems a few weeks ago is referred to as Freeze of Headcount and applies to all of the division's 57,000 employees worldwide.

Essentially, it means a hiring freeze. When it comes to strategically important positions, exceptions can be made although these must be approved by managers at the highest levels.

"Last year, we expanded considerably to prepare for 3G. Now we have the resources we need and have put a stop on additional growth."

The new organization implemented at the Mobile Systems Division on October 1, 2000, is functioning well and no major changes are planned apart from a few adjustments. Included among these will be a review of the division of responsibilities between business and product units in order to ensure that no duplication has been created.

The division will also review all products to determine answers to three questions. Is the operation growing, is it profitable and is it of strategic value? Operations that do not fulfill these requirements will be shut down. Practically speaking, this means that certain projects or products will be terminated or suspended, and that the employees working on them will be assigned new responsibilities. It could also mean that some employees will be offered employment through Future Forum.

TTC Global important

The program of action means that the division will rely primarily on its own employees, which means the number of consultants will be reduced. There has been a significant increase in the number of consultants in recent years, especially within the areas of research and development. In order not to lose vital expertise, however, some consultants will be offered positions.


Mats Dahlin

"We're going to be restrictive with all forms of new recruitment, but it's also important that we maintain the resources necessary to handle our customer commitments."

Customers expect Ericsson to help them reduce their costs, and this will be accomplished partially by making improvements within the company. The entire supply side of operations is an important area, with purchasing playing something of a key role. It is essential to have the best suppliers and to enter into efficient partnerships.

Another key area is implementation – getting products to market and then installing and starting them up for customers. The TTC Global program can provide assistance in this regard, making it possible to save both money and valuable time. TTC must now be implemented in all markets and it must be made to operate even more efficiently.

Extensive collaboration with the Global Services Division, the Data Backbone and the Optical Networks Division, as well as with those units working on application development, is essential in order for Mobile Systems to be able to offer customers complete systems. Plans are already in place for this expanded collaboration.

Worse in the US

Like all other companies within the industry, Ericsson is feeling the effects of the current economic downturn, which is largely attributable to the poorer economic situation in the US. The American market is Mobile Systems' largest and, consequently, Ericsson and other companies with operations there have been affected.

Operators in Europe are reducing their subsidization of telephones, which has lessened the need to rapidly expand mobile networks. The major investments that some operators have made in UMTS licenses, and the resulting debts, have also forced operators to proceed more cautiously in the expansion of their networks.

"Although a certain amount of caution is being taken on the part of some operators in anticipation of 3G, Ericsson's position has not changed. We will continue our 3G work in an aggressive manner."

Ericsson holds a strong position when it comes to GPRS systems, and by the middle of this year several clients will have put their GPRS networks into commercial operation. Later this year, more GPRS telephones will also be launched.

"The slowdown currently being experienced in the mobile systems area must be viewed as a temporary hiccup in an otherwise upward trend, and over the long-term we will continue to maintain a strong position," emphasizes Mats Dahlin.

An important part of the program of action is to encourage all employees to be more aware of costs. A useful guideline to follow is to view the company's money as if it were money out of one's own pocket.

"If everybody does that, we'll establish a solid foundation for continued successful operations."

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First phase of campaign an international hit

People responded favorably to the message and brand recognition increased, according to a study on the effects of the Mobile Internet campaign. Plans are now being made for the next phase.

Ericsson strengthened its brand image through its Mobile Internet campaign. According to an evaluation, 48 percent more people associate Ericsson with the Mobile Internet now than prior to the campaign.

Ericsson's Mobile Internet campaign ran from October through December of last year, on a global basis. With the initial phase complete, results have been evaluated.

"We want to be involved in shaping the debate within the industry and the media, and the purpose of the campaign was to explain our vision. We've decided to make the Mobile Internet an everyday phenomenon. The campaign emphasized simplicity. When we started, there was a lot of hype," says Eva Andersson, project manager for the campaign.

Position strengthened

The campaign was primarily aimed at operators and opinion makers, such as analysts and the media. Nevertheless, the general public and employees were also targeted.

"We've conducted several studies regarding the effect of the campaign. Overall, we see that Ericsson strengthened its position among the primary target groups during the campaign period. The message seems to have got across to operators, and that has created a platform from which we can move ahead with further activities," says Bruce Peterson, who is overseeing the campaign evaluating process.

"We focused our measurements on the effects of print, television and radio ads among the secondary target groups. Our analysis provided us with interesting insights. This kind of communication will undoubtedly increase in the future."

The campaign was the first to unite the entire organization under the same message. Since it was such a major project, thorough evaluations were also conducted. No fewer than nine different studies were conducted, including everything from brand recognition measurements and customer satisfaction studies to internal and external web-based studies and evaluations of how the subject was dealt with by the media.

"It is my hope that we have set a new standard as to how future campaigns should be evaluated," says Bruce Peterson.

Association with Internet

The results were reassuring, according to Eva Andersson and Bruce Peterson. Measurements among operators showed that their opinion of Ericsson continued to become more favorable as the year progressed, and especially during the campaign period. In fact, half of the increase occurred during the campaign. The study also pointed towards a greater association between the Mobile Internet as a concept and Ericsson. Forty-eight percent more people now associate Ericsson with the Mobile Internet compared to before the start of the campaign.

Ericsson also received outstanding coverage in the media. During December, the number of articles pertaining to the Mobile Internet increased dramatically, with Ericsson holding a prominent position.

"Ericsson's name was mentioned in more than half of the articles written about the Mobile Internet. That's twice as many as the closest competitor, which is very encouraging," says Eva Andersson.

A review of press coverage also showed that the general tone of the articles grew more favorable over time.

The campaign did not have the same degree of impact on the general public, although those who remembered it and associated it with Ericsson had a more favorable impression of the brand.

The campaign was also well received among employees. More than 90 percent of employees were aware of it, including 84 percent even before it started. The evaluation also indicated where improvements need to be made in the future.

"A campaign is never perfect and global messages are always more difficult. We will be learning from our experiences, making improvements during the next phase. One thing we've learned is that we need to deliver a more powerful message in the future," says Eva Andersson.

"Campaigns need to be more focused, creatively speaking, so that they stand out in the crowd, and the various components, such as TV and print advertisements, need to be more closely coordinated. On the plus side, we now have a platform to build on," says Bruce Peterson.

Henrika Lavonius-Norén
freelance journalist

Media Lab opens in Europe

Ericsson is sponsoring a new research and development center, Media Lab Europe, providing USD 2,3 million over five years. The center was recently established in Dublin, Ireland. Media Lab Europe is an independent center for research and training at the university level.

It is a joint initiative between the Massachusetts Institute of Technology (MIT) in Boston, in the US, and the Irish government. The goal is to create an innovative, interdisciplinary institute that can provide industry with access to new kinds of research activities in the field of wireless communications and knowledge capital.

Ericsson has long been a supporter of Media Lab in the US, which is a part of MIT in Boston. The new European laboratory will work in close collaboration with its sister organization in the US.

"We'll be dependent on Media Lab in Boston and the expertise, experience and guidance they provide," says John Callien, head of Media Lab Europe.

Eventually, between 200 and 250 people, with various backgrounds and skills, will be working at Media Lab Europe. The number of employees will be closely linked to the number of ongoing activities and the ability to attract investors. There are several reasons why Media Lab is establishing a European branch in Ireland.

"We have a strong arts and culture tradition here that promotes a favorable climate for media research and development and how it affects everyday life," says John Callien. "Industry is also thriving in Ireland, as well as generally open attitudes towards new trends."

"We view the development of new applications for UMTS, the standard for the next generation's mobile system and other wireless systems, as a necessary part of Ericsson's strategy to retain a leading position within the Mobile Internet," says Håkan Eriksson, vice president of Ericsson Research. The results from Media Lab Europe projects will be valuable assets to Ericsson's research and future product development within wireless communications.

"The number of employees is strongly related to the level of activity and the number of investors we succeed in attracting," says John Callien.

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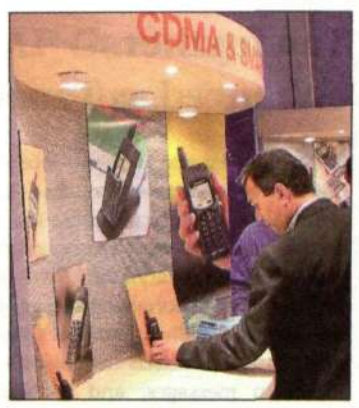

Ericsson offers end-to-end CDMA solutions, all demonstrated at CTIA.
Photo: Jack Radgowski

CTIA grows despite the economic downturn

Attendance at CTIA Wireless 2001 was up 30 percent compared to last year, with the number of exhibitors up about 33 percent. And Ericsson's booth was extremely busy. All this despite an economic downturn that has everyone on pins and needles.

The CTIA (Cellular Telecommunication & Internet Association) Wireless event March 20–23 in Las Vegas, Nevada, brought together more than 20,000 top-level industry executives and decision makers from around the world.

Major role

CTIA is Ericsson's largest show in North America and Ericsson has played a major role in CTIA since it's inception in 1986. This year Ericsson's key messages were Mobile Internet, applications and solutions.

In Ericsson's Developer Pavilion companies developing Mobile Internet applications and solutions demonstrated the latest in location-based and media-rich applications over Ericsson's infrastructures and devices including the Bluetooth-phone R520.

Ericsson also demonstrated the new path to 3G for TDMA operators: moving first to GSM and then to Edge and WCDMA.

The CDMA system was supported by announcement of a new 3G Mobile Switching Center, for cdma2000, and the CDMA Internet Services Platform for helping operators and service providers to deploy Mobile Internet applications rapidly and cost-effectively.

New features

For the GSM markets Ericsson showed the new GPRS phone with Multimedia Messaging and Bluetooth, T68, and the GPRS phone T39. For the TDMA market Ericsson introduced the tri-mode (800 analog and 800/1900MHz digital) WAP phone R300d, the first to offer calendar and agenda features with syncronization.

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T20 further enhanced as T20e

>> T20e is the name of a new mobile phone from Ericsson. Externally, it is identical to its predecessor the T20, but inside the case, many new features have been added.

These include Enhanced Messaging Service (EMS), a function that allows users to attach images and sound to messages, and Mobile Chat, which allows chat messages from both parties to be shown on the display and stored in the phone.

Thanks to a new version of WAP with improved security, the T20e is ideal for shopping and mobile banking.

The T20e will also be available in new color combinations.

T29 now ready for GSM world

>> Ericsson's new T29 mobile phone will be available for GSM 900/1800 markets during the second quarter. Previously the T29 was launched in the Asian market.

The T29 is an elegant little phone weighing just 95 grams with a stand-by time of 150 hours and a talk time of seven hours. It supports EMS (Enhanced Messaging Service), which allows users to send images and sound of the same infrastructure as used for SMS.

In the future, EMS will be standard on all Ericsson mobile phones. In addition, the T29 has a more secure version of WAP 1.1, Mobile Chat and four games.

3G equipment for Spain

>> The Spanish operator Amena has ordered 3G radio access equipment from Ericsson in a contract valued at just over USD 400 million.

Deliveries are to start immediately, and Amena expects to install more than 900 base stations by August. Initially, the system will cover areas of Spain with a population greater than 250,000.

In addition to delivery and installation of equipment, the contract includes network planning, support, skills development and other services.

Amena has been an Ericsson customer since the start of operations in 1998.

Ericsson is the principal supplier for the operator's GSM network and the sole supplier for the first phase of its GPRS network.

Engine lab open this summer

>> The Multi-Service Networks Division is starting five Engine Business Labs around the world.

The labs will provide a high level of technical and business expertise to support both customers and the local sales organization, thus creating a stronger relationship with customers.

The first lab will be opened this summer in Dallas, as part of the division's effort to capture a share of the US market.

The other four labs will be located in different parts of the world, including Europe and Asia.

Phones win praise

Ericsson's new GPRS phones were warmly received at the CeBIT show in Hanover, Germany.

After the press conference, the stage was filled with journalists anxious to get their hands on the new phones.

Bo Albertson, marketing director, communication at Consumer Products, proudly shows the T39 and T68. Photo: Ecke Küller

Ericsson launched two new GPRS phones at CeBIT. The T68, which features a new design concept, received the greatest attention. Weighing just 85 grams, it is light and small, with a built-in antenna and a large color display. Technical features include GPRS, Bluetooth, WAP, MMS (Multi-Media Messaging), a built-in calendar and games.

The second model, the T39, is similar to the T28, but in addition to GPRS also includes Bluetooth.

"With the T68, we are launching a phone that is both striking and technically superior. That's very satisfying, given the financial difficulties that Ericsson is now experiencing. With the T39, we are also demonstrating the breadth of our GPRS portfolio," says Bo Albertson, marketing director, communication for Consumer Products.

Ericsson intends to invest the greatest proportion of development resources in GPRS phones.

"Previously it has been a problem that we have spread resources among too many projects, with the result that it took too long to bring certain products to market, while others were discontinued before release. Now we are becoming more focused," says Bo Albertson.

In addition to increasing sales, Bo Albertsson believes that the interest at CeBIT and the positive publicity in the media are important for Ericsson's employees.

"I believe that it is important for employee pride at this point that we are able to show that we can produce attractive phones."

With the launch of the two new models, Ericsson now has three GPRS phones ready for delivery this year. The first, the R520, which was previously praised in the media, is now arriving in stores.

The T39 will be available in a month or so, while the T68 will reach retailers by the end of the year.

"Together with the other models we are releasing, such as the T20e and the T29, we will have a good mix of products. What's missing at the moment are simpler phones, so-called entry-level models, but we intend to release such products during the second half of the year," concludes Bo Albertson.

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Vodafone UK and Telstra launch GPRS

Vodafone UK and Telstra are two Ericsson customers that recently announced that they are launching commercial GPRS networks.

Of the 66 agreements that Ericsson has with operators, about 50 now have Ericsson's GPRS systems installed in their networks.

In a recent press release, Vodafone UK announced that it is now ready to launch its nationwide GPRS after extensive and successful testing.

Initially the operator is targeting business customers, but over the coming months, GPRS will also be introduced in the consumer market, as new applications, phones and service plans become available.

Start with Remote Access

At the start, Remote Access is one of the most important services. This service allows employees to access the company's data system when they are outside the office.

Examples of applications include e-mail, databases, price lists and work schedules that employees can access via a portable computer, a PDA (Personal Digital Assistant) or one of the new GPRS-compatible PDA phones.

"Vodafone UK is a very large customer for whom Ericsson is the sole supplier of infrastructure. With the launch of the nationwide GPRS service, this becomes a very important reference for Ericsson," notes Jan Janson, who is the account manager responsible for Vodafone with respect to 2G and GPRS.

Telstra's network in operation

Yet another Ericsson customer, Australian operator Telstra, recently announced that it is putting its GPRS network into commercial operation.

Initially, GPRS phones will be sold in selected Telstra stores in the cities of Sydney, Melbourne, Adelaide, Perth, Hobart, Brisbane and Darwin.

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A giant show

CeBIT is the world's largest trade show in all categories. New records were set this year. The list of exhibitors was as thick as a telephone book and as heavy as two bricks.

CeBIT is the data and telecom world's three-ring circus. This year, more than 800,000 visitors crowded the aisles during the seven-day show, which attracted 8,106 exhibitors in 26 exhibit halls.

Ericsson once again put on a show of strength. There were large stands in two separate halls, one for consumer products, and one for systems and applications. Between the two halls, there was a pavilion featuring live demonstrations of several systems where visitors were able to witness fully functional demonstrations of Edge, WCDMA and GPRS.

"The new T69 GPRS phone and Instant ADSL were the most interesting news, in my opinion," says Torbjörn Nilsson, Ericsson's Senior Vice President for marketing and strategic business development. "The T68 is an example of Ericsson's new focus, while Instant ADSL shows that we have more than one leg to stand on."

"What's most exciting is helping to get customers interested in doing business," says Thomas Malmsten, who demonstrated access solutions at Ericsson's systems stand. "I had one customer who was so enthusiastic that he immediately requested a VIP show".

Lars-Magnus Kihlström

In two separate stands, Ericsson demonstrated a large number of new products, including phones and business systems. Photo: Ecke Küller

Smart ADSL solution speeds up installation

Gone are the six-month waiting times for having ADSL installed to obtain broadband access via home telephone jacks. A new intelligent solution announced at CeBIT – Instant ADSL – will simplify hookups both at the telephone switching station and in subscribers' homes. Installation times have been reduced from hours to just minutes.

"Installation takes just three minutes and is so easy that subscribers can do it themselves, without having to call for a technician," says Tommy Svensson about Instant ADSL.

Photo: Ecke Küller

The solution covers all links in the chain, from operator equipment to components that subscribers need in their homes.

"The best thing about our system is that it is so simple. Currently, it takes up to half a day to install an ADSL line. Once our solution is in place, operators are able to hook up ADSL subscribers in a minute. That will save large amounts of money for operators, who will also be able to reduce subscriber waiting lists," says Tommy Svensson, of the Access Networks business unit within the Multi-Service Networks Division (DMN).

The process is also easy for subscribers to initiate. A box with all the requirements can be purchased from a consumer electronics retailer. In addition to a modem and a CD with the installation software, the box includes easy-to-read instructions on how to figure out which way the telephone jack is connected.

It is believed that there will be a very large market for the product. Not only has Ericsson installed 150 million AXE lines around the world, Instant ADSL also works on other manufacturers' equipment. In total, it will work on over one billion telephone lines.

Access Networks has as its goal to capture 20 percent of the world market for broadband access.

"If Instant ADSL is a hit, as we believe it will be, that will put us well on our way towards our goal," says Tommy Svensson.

The first operator will begin field testing in the middle of April, and Ericsson is in final negotiations with several other operators in Europe and around the world.

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Footnote: ADSL (Asynchronous Digital Subscriber Line) is a broadband technology that uses existing telephone lines. ADSL is capable of receiving data at speeds up to 8 Mbps and sending at 2 Mbps.

First camera for GSM phones

CommuniCam is Ericsson's latest contribution to the development of mobile telephone use between individuals. The camera enables people to e-mail photos to friends or store them in a virtual photo album on the Web.

➤ *It is anticipated that the future of* mobile telephony will be just as much about images as it is about voice and text. Ericsson unveiled the world's first mobile camera for GSM phones, the CommuniCam. The camera can be used with an Ericsson phone equipped with a modem, such as the new T39.

When it's time to take a picture, users simply plug the camera into the bottom of the phone, look through the viewfinder and snap a shot. The camera can store up to five images at a time, after which they must either be erased or forwarded. It's also possible to access one's own virtual photo album through Ericsson's Mobile Internet Portal, which is available through the camera. *Photos can either be organized* using the WebAlbum or sent as electronic postcards.

Photos have 24 bit color depth and an image resolution of 352 x 288 pixels. The camera will be available in stores during the second quarter of this year.

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Camera instructions are listed on the telephone display and selections are made using the keypad. Photo: Ecke Küller

The radio's own built-in speakers offer excellent sound, but it can also be hooked up to a home stereo system. Photo: Ecke Küller

Radio makes its comeback via the Internet

What would it be like to create your own radio station? This is now possible using the world's first cordless Internet radio. Ericsson's Cordless Internet Radio offers users access to thousands of channels from around the world, all without a PC.

Visitors to CeBIT were the first to see how Cordless Internet Radio works.

"People are impressed both by the idea behind the radio and its design," says Maja Sever, public relations manager at Ericsson Home Communication.

The shape is reminiscent of *transistor radios from the 1960s,* although its intelligent content is on the very cutting edge of technology.

The radio is the result of collaboration between Ericsson and MTV1 – a unit of MTV that works with music on the Internet.

Family members can each select the musical style they like best and rank their favorite artists. Based on those selections, a list of tunes is generated, thereby creating one's own personalized radio station. Using shortcuts buttons, it is possible to seek out and save different stations as well as one's favorites. It is also possible to create one's own music archive and access those sound files on the Internet or from the computer.

The Internet radio works by picking up signals from a Bluetooth transmitter in the home that is hooked up to a broadband connection, and operates up to a hundred meters from the transmitter. The radio can also be connected by cable to a broadband modem.

The simplicity and portability of the radio will attract listeners to the Internet stations. Currently, listeners are tied to their PCs.

"*I believe there are many people* out there who have no idea about how many stations there are," says Mats Lindborg, product manager at Home Communication.

The Cordless Internet Radio will be available in the US market towards the end of this year and released on the European market shortly thereafter. The price is likely to be somewhere between USD 200 and 300.

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WAP Gateway for companies

»» Ericsson is launching WAP Gateway/Proxy 2.0, a new version of WAP Gateway adapted for companies. This new gateway is compatible with the June 2000 WAP standard. It has a function that determines a user's profile, which allows it to adapt information sent to users based on which terminal they are using.

It provides functions for push services and also works on all Windows 2000 platforms, making it quick and easy to install.

Companies that utilize Ericsson's new *gateway can offer WAP services to their* customers and employees, regardless of which mobile operator they use.

Service developers can download configurations at:

www.ericsson.com/developerzone

Company offers all-in-one solution

»» The Engine concept has been further refined for small and medium sized companies.

Now they are being offered a complete broadband solution over existing telephone lines.

In the past, each kind of service required its own system, partially separate from the others.

With the new solution, companies can easily select from a smorgasbord of goodies – wireless LAN, Voice over IP or DSL, fast unlimited Internet access, virtual or private networks, video services etcetera.

This means that companies will be able to manage both voice telephony and data transmissions on a single phone line.

"The system is quick to install and can easily be upgraded with new services for companies that are either expanding or opening offices in new locations. There is money to be made here, both for operators and customers," says Stefan Möller, head of Access Solutions at the Multi-Service Networks Division.

The solution is based on the Engine Access Ramp and SHDLS, i.e. high-speed broadband over copper lines, with data being sent equally fast in both directions.

New service for operators

»» Ericsson recently launched a new Internet service for mobile network operators. The service is called Ericsson Internet Service Platform and will assist network operators and service providers in starting up Mobile Internet operations quickly and cost-effectively.

Bluetooth clear winner in the UK

»» The Ericsson Bluetooth Headset recently won first prize in the category of "most innovative new product" at the UK's Mobile News Awards 2001. While there was stiff competition, there were no doubts in the minds of the jury.

"It's fantastic to see Bluetooth in action, definitely the most innovative new product and also wonderfully packaged," wrote one critic.

Ericsson's mp3 player was one of the six other finalists.

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World's First Dual-Gain SiGe IC in Ultra-Chip-Scale Package

The MAX2374 is the world's first SiGe cellphone LNA packaged in an **Ultra-Chip-Scale Package (UCSP)**. It measures only 1mm x 1.5mm, which is 60% smaller than an SC70. It includes an LNA with two gain states as needed for CDMA systems as well as bias and shutdown circuitry. The input IP3 is adjustable using a simple external resistor.

- **Works for CDMA, TDMA, PDC, and GSM Phones**
- **750MHz to 1000MHz Frequency**
- **+5dBm to +9dBm IIP3 (Adjustable)**
- **7mA Supply Current**
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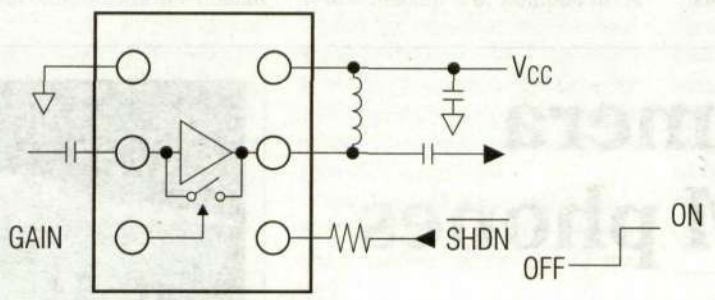
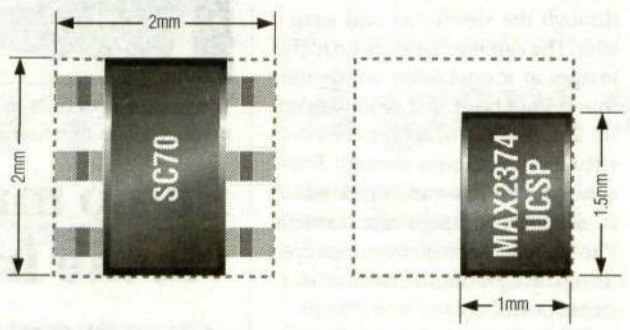
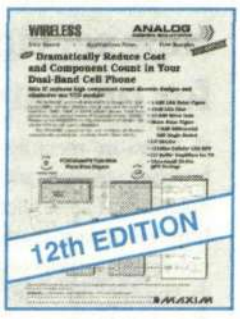




The MAX2374, in the UCSP package, occupies only 40% of a 6-pin SC70's area.

*300k units/month, FOB USA.



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Prepaid subscriptions can be used abroad

Soon it will also be possible for prepaid mobile phone users to place calls on their phones abroad.

Ericsson's new Prepaid system will enable this.

An inconvenience currently affecting millions of mobile phone users is about to disappear. Ericsson's Prepaid system will enable mobile phone operators to easily debit tourists and business travelers for mobile phone calls made on phones using prepaid subscriptions.

"For the first time, there will be a common standard for processing prepaid solutions. Ericsson is the first in the world to offer mobile phone operators such a solution," says Jesper Nyström, a sales representative at Ericsson Charging Solutions.

The standard, known as Camel Phase 2, fills in the missing link between mobile networks and prepaid systems, making it possible to debit these kinds of subscriptions.

Prepaid subscriptions involve customers placing funds into an account with their mobile phone operator in advance. Subscribers are then allowed to place calls until these funds have been depleted.

Until now, foreign operators have been unable to check whether any funds were available in a customer's account, making overseas roaming impossible.

Ericsson's new Prepaid system enables mobile phone users who have prepaid subscriptions to use their phones abroad.

Photo: Lars Novak

"With Ericsson's Prepaid system, a signal is sent from the foreign mobile system to the customer's mobile phone account in the home country as soon as the subscriber starts using the phone. If the customer has sufficient funds in their account, the call is approved and per minute costs are debited accordingly," says Jesper Nyström.

Mobile phone operators are just as eager about the Prepaid solution as the users.

"For operators, this will mean many new customers and millions in increased revenues."

According to statistics from EMC Database, 44 percent of all GSM subscribers currently have prepaid subscriptions, corresponding to 175 million customers. To date, Ericsson has sold its Prepaid system to some 80 operators of GSM, TDMA and 3G networks.

"We'll be promoting the system this spring and summer. After that, it is up to operators to decide when mobile phone users will be allowed to take advantage of this service," says Jesper Nyström.

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Mobility World to promote 3G

Ericsson is rolling out a new initiative that will promote the development of the mobile Internet. Ericsson Mobility World plans to establish some 20 centers around the world before the end of the year. Everything from small businesses to industry giants will be included in the same network, facilitating the sharing of experiences from around the globe.

In the past, it has been primarily third party developers who have collaborated with Ericsson in such endeavors as the Mobile Applications Initiative and Developers' Zone. These will continue to be available in the future, but as cornerstones of the Mobility World network. This new initiative is aimed at both operators and companies, third-party developers and developers of services.

Anders Lundvall oversees the partner program at Ericsson Internet Applications, which he likens to a pyramid. At its foundation is collaboration with third-party developers. This occurs on relatively open terms, with the option of individual membership. Members who become Ericsson Associates, receive greater assistance and access to Ericsson's technology. Ericsson's business partners comprise the most exclusive members of Mobility World.

Chance for business

Together with Ericsson, they can transform their ideas into services that reach end-users.

"Third-party developers see that we offer them a chance to conduct business with major operators," says Anders Lundvall.

Application development centers already exist in many locations. They will be developed in order to qualify as parts of Mobility World. Three Mobility World Centers already exist – in New York, Madrid and Düsseldorf.

Dr. Goetz Brasche, Director of Ericsson Mobility World Bermany, has the following explanation of why one of the first centers opens in Düsseldorf:

– Ericsson Germany was among the first to launch an Ericsson Mobility World program. The specific market situation after the expensive UMTS auction in Europe's largest telecom market demanded actions to speed up the development of the mobile Internet market. CeBIT has shown that there is a great interest in the services we provide.

By the end of the year, there will be centers in approximately 20 locations.

A global network provides operators and other companies access to the expertise of tens of thousands of third-party developers worldwide. Developers, in turn, gain the ability to offer their services to over 400 operators around the globe.

Increased network sales

"Mobility World helps us satisfy the needs of operators. It increases our network sales, which is the primary goal of this endeavor. In addition, we can also benefit from the sale of services. In order to remain the leading supplier of 3G, we must be able to demonstrate that we have expertise as to which services are most suited to local markets," says Anders Lundvall.

Mobility World is building on the work of the Mobile Applications Initiative (MAI), which has already established numerous centers throughout the world, as well as Developers' Zone. Since its launch last autumn, 90,000 individual memberships and 2,200 business memberships have been registered.

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Pirate copies hunted at CeBIT

Ericsson went on the offensive against several companies selling pirated copies of parts and accessories during the CeBIT trade show. With the help of lawyers and court rulings, these pirates were forced to remove their wares.

A delegation including Ericsson representatives and attorneys prepare for the first enforcement action of the trade show. Prior to this, Mikael Eriksson, who monitors trademark infringement of Ericsson products, perused the display areas and catalogs, looking for pirated copies.

Each year, between 10 and 30 companies are found selling pirated copies of front panels, batteries and other accessories. On this particular afternoon, two companies are involved, both from Asia.

First evidence must be acquired. The woman at the display is initially happy about the attention shown by Ericsson representatives who photograph a row of pirated Chatboards. But her joy does not last long, when shortly thereafter Ericsson's lawyer steps forward to talk to the owner.

"We gave him two hours to remove the items and sign an agreement not to sell the pirated copies again. If he does not follow that agreement, we'll be back tomorrow morning with a court ruling," says lawyer Maximilian Schunke.

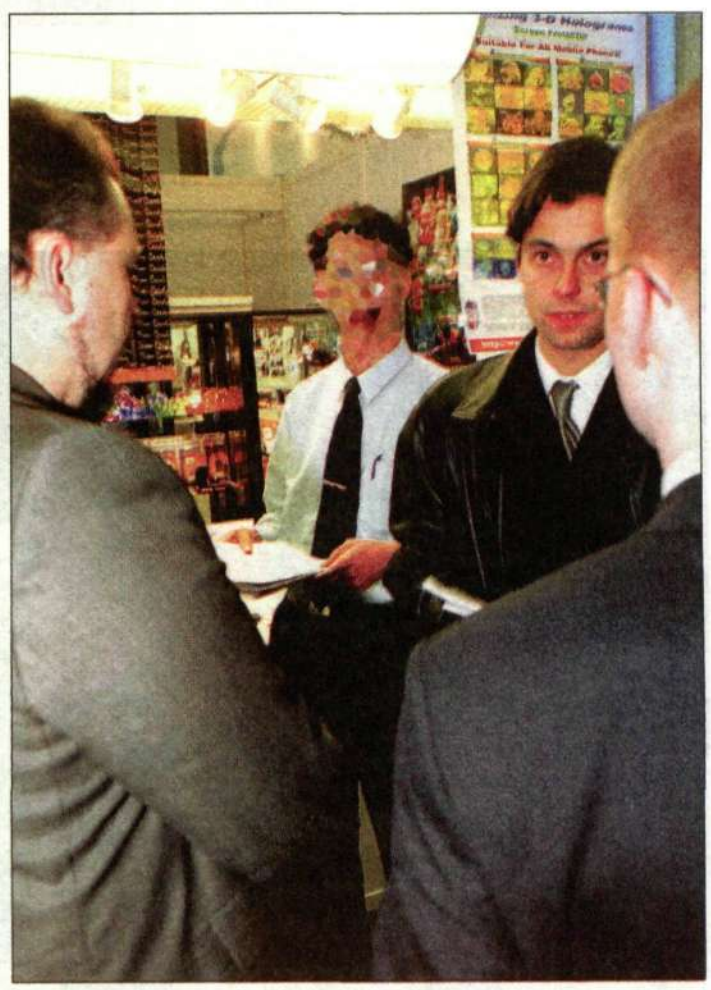
The following day, Ericsson's employees return together with representatives from the court. Although the pirated copies are gone, the company is fined a few thousand German marks, but is allowed to keep its display open for the rest of the trade show.

"Not only does this activity involve great financial losses to Ericsson, it can also be hazardous to use pirated copies. In one case, a woman in Sweden received a powerful shock from a pirated charger," says Mikael Eriksson.

Ericsson continually monitors hundreds of pirate manufacturers all over the world, including several who were at CeBIT again this year.

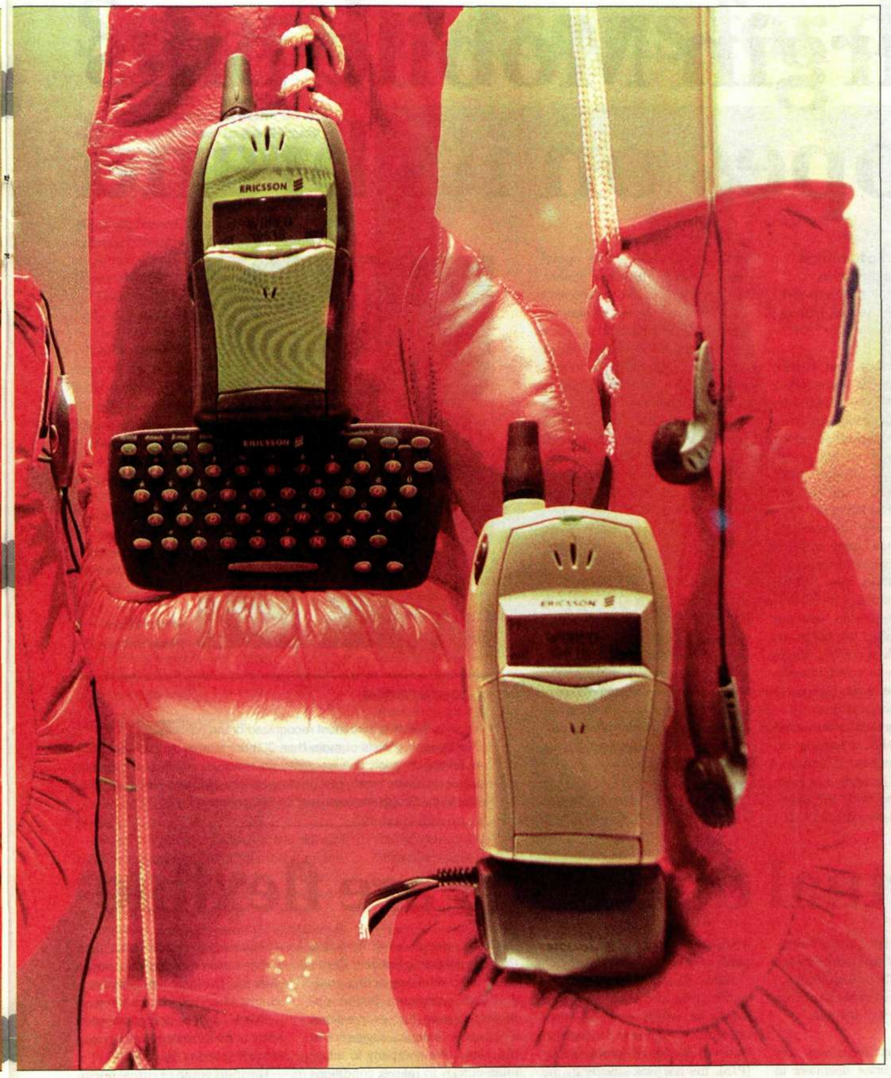
Lars-Magnus Kihlström
Jesper Mott

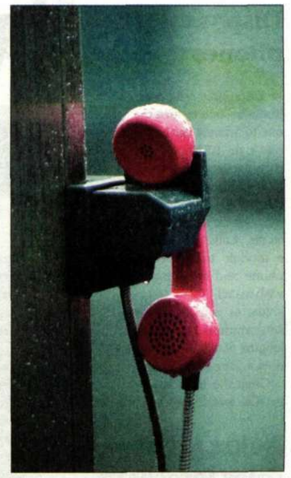
Ericsson's pirate patrol steps into action during CeBIT. The contingent, including attorney Maximilian Schunke (in middle above), pays a visit to an unsuspecting pirate manufacturer. He must sign an agreement to remove the fakes and pay Ericsson's expenses. Photo: Ecke Küller



A show not to be missed

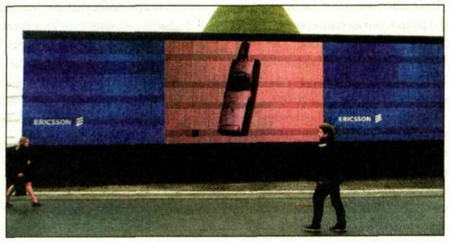
Did anyone really think that this year's CeBIT trade show wouldn't break new records? Despite talk of difficult times for companies in the telecom industry, visitors were treated to an experience that was as extravagant as ever. *Contact* photographer Lars Åström let his lens be seduced by this high-tech marketplace.





Not everything at CeBIT is high-tech. Deutsche Telekom's hardy pink payphones from the 1980s have an almost classic feel about them.

Visitors were wowed by Ericsson's new products. Intense interest meant that over 70 major visits to Ericsson's display were already scheduled for the first day of the trade show.



Ericsson's stylish billboard ad outside the 3G tent.

It's all about attracting attention. Representatives of German operator te-2 encouraged trade show visitors to call a participant on Germany's equivalent of the Big Brother docusoap for the purpose of breaking the Guinness record for the largest number of mobile phone calls received.

Numerous important business agreements are reached during CeBIT. Anyone who offers anything of interest is represented at the show.

Sometimes it's nice just to take a moment and collect your thoughts. There is much to take in among the 8,000 exhibition stands.

Disposable mobile phones announced

›› Disposable cell phones with just two buttons – one to turn the phone on and one to activate voice dialing – will go on sale in the US later this year, according to manufacturer Telespree Communication.

The phones consist of a battery module and a shell. Modules will be sold in places such as gas stations and grocery stores. Calls are made by connecting a module to a shell, turning on the phone and speaking the number you wish to call.

Just as with debit cards for prepaid subscriptions, modules with varying lengths of talk time, from 60 to 120 minutes, will be available for purchase.

Once the time has been used up, a module is easily replaced with a new one.

Nokia revises sales forecast

›› In mid-March, Nokia announced that it did not now expect the increase in its mobile phone sales previously anticipated for 2001. Higher margins and cost savings mean, however, that the Finnish telecom giant's earnings will be unaffected.

This stands in stark contrast to other companies in the industry who have, almost without exception, issued earnings warnings in recent months.

Back in January, Nokia predicted an increase in mobile phone sales of 25–30 percent. Now sales are expected to level off at 20 percent.

Causes include the slowdown in the US economy and a reduction in overall economic activity around the globe.

Swedish 3G deal not yet reached

›› At the beginning of March, Telia announced that it has selected Nokia and Siemens to be suppliers of 3G equipment for its networks in Norway and Finland.

"What was not mentioned, however, was the fact that Telia has not yet reached a contract for Sweden," says Anders Niklasson, Ericsson's press officer in Sweden.

"In Sweden, negotiations are continuing with both Telia and Tele2, as well as with the other license holders," he says.

Ericsson has never supplied Telia with a GSM system infrastructure in Finland or Norway and Telia has chosen to continue to employ its existing suppliers in these markets.

Renewed interest in GSM licenses

›› Just a few months ago, only minimal interest was shown in the GSM frequencies that were to have been issued in conjunction with the distribution of 3G licenses in Sweden.

These frequencies were never issued, however, and when Contact last wrote about them (issue 2/2001), only Tele2 had openly expressed an interest.

Now, twelve different operators have registered an interest in frequencies in the 900 and 1800 bandwidths, including Sweden's three current GSM operators: Telia, Europolitan and Tele2, all of which need to increase the capacity of their existing networks.

Their chances are considered remote, however, since the Swedish National Post and Telecom Agency favors new operators.

Virgin Mobile pins hopes on its brand

The United Kingdom's first virtual mobile operator, Virgin Mobile, is now expanding to become the first global virtual operator.

It was back in 1970 that Richard Branson, then age 20, began selling record albums via mail order through his fledgling company, Virgin. The company grew quickly and today the group has operations in highly diverse fields around the world – and Branson can call himself Sir Richard.

Among his many companies is the virtual mobile phone operator, Virgin Mobile, which began operating in November 1999. Virgin established a joint venture company together with the operator One2One, renting access to its mobile network in the UK. Virgin Mobile was able to launch its operations by virtue of the company's strong brand recognition.

"Our only regret is that we waited a little too long before starting Virgin Mobile," says Richard Branson.

Although he believes that more virtual operators will be established, Branson does not think that traditional mobile phone operators have anything to fear. Rather, the trend should be viewed as a collaboration that can be very rewarding for both parties.

"For traditional mobile phone operators, technology is important, whereas for Virgin Mobile it's not the technology but access to useful services that is important."

Although GPRS has still not been put into operation, he points out that it is already possible to offer attractive services. As an example, he cites the fact that Virgin Mobile subscribers can purchase winter getaway vacations from Virgin, at discount prices, using their mobile phones.

Virgin Mobile is now establishing itself outside the UK. The company has initiated collaborative operations with two traditional mobile phone operators, one in Australia and one in Singapore, making it the world's first global virtual operator. Last year, Virgin Mobile was named the UK's best mobile phone network without actually even having a network of its own.

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Richard Branson started his company selling record albums via mail order. Today he has a knighthood and the Virgin Group consists of more than 200 companies.

Photo: Ethan Miller/Scanpix

FACTS/**VIRGIN**

- Virgin is the UK's third most recognized brand name today.
- The Group consists of more than 200 companies around the globe operating in such diverse areas as railways, airlines, soft drinks, music, vacation travel, mobile phones, financing and wedding attire.
- The Virgin Group employs over 25,000 people.

Virtual operators are flexible

Over the past year, more than 32 new mobile operators have popped up in Scandinavia. Not a single one owns a mobile phone network of its own.

Just one year ago, there were only three mobile phone operators in Sweden. Each owned its own mobile network and together they alone controlled the Swedish market. Then, in November 1999, Telia was approached by Sense Communication of Norway. The company wanted to utilize Telia's mobile network to offer mobile services under its own brand name. That overture led to dramatic changes in the Swedish mobile phone market. Now, instead of three Swedish mobile operators there are nine.

In Norway, where only two mobile operators existed a year ago, 17 are now vying to sell mobile subscriptions to companies and private individuals. Throughout the Scandinavian market there are now 41 operators. Just nine of those actually own a mobile network of their own offering national coverage.

Companies that offer mobile telephony service without actually owning a mobile network of their own are sometimes referred to as virtual operators, although the proper English term is "service provider."

Genuine virtual operators own some of their own network equipment, while the companies being referred to here merely purchase unutilized capacity from the companies that own the networks.

Sense Communication's overture to Telia also resulted in new legislation, which went into effect last May. According to the Swedish National Post and Telecom Agency (PTS), the law was already in the works but was hastened by the Norwegian company's inquiry to Telia. The law states, among other things, that operators who own networks are obligated to allow other companies to purchase excess capacity within those mobile networks.

Sweden's Europolitan has been the most accommodating operator when it comes to allowing others onto their network. They have contracts with several companies including the grocery store ICA, the power supplier Hemel and the parent company of the youth-oriented website Lunarstorm.

Essentially, there are three kinds of virtual operators. Sense Communication has the most similarities with traditional operators.

The business concept behind the Norwegian company is to be more flexible than traditional operators. Just seven people work for Sense Communication in Sweden. Detlev Stübe, who served as acting president of the company in Sweden until this February (the new president is Suzana S. Drakulic), suggests that this allows the company to adapt more quickly to market conditions and trends.

Growth levels are high and the company has great hopes of continuing to attract new customers. More than anything, their strategy involves drawing customers away from other operators.

"We avoid the expense of attracting new customers and gain increased traffic"

Johan Holmgren

This is accomplished by offering more attractive services and simpler subscription plans, as well as through branding – making the Sense brand appear more attractive.

"Decisions to switch operators are not simply based on facts. They are also controlled, to a great extent, by emotions," says Detlev Stübe.

Emotional ties and brand recognition are what prompt companies such as Lunarworks to offer their own mobile services. That company operates the Lunarstorm website, which has 700,000 members.

Mikael Josander is in charge of Lunarworks' mobile campaign. He is reluctant to discuss what their mobile services will look like, but he hints that the large number of current members will play a key role.

"We're in close communication with our members and will develop services linked to the website".

The third group of virtual operators involves companies such as ICA and Hemel. They already have a substantial customer base and can put together offers that combine mobile telephony with their original products and services.

For example, ICA can offer its customers bonus for making calls. Another advantage for these companies is that their telephony operations are billed on the same invoices as for groceries or electricity, making it more convenient.

None of the virtual operators in this category have yet started up their operations. On the other hand, more traditional operators such as Sense Communication and Tele1Europe have been operating for some time. The operators who own the networks claim they are satisfied with allowing others to use their networks.

"We avoid the expense of having to attract new customers, but receive revenue from increased traffic on our network. It's a lucrative arrangement," says Johan Holmgren, head of communications at Europolitan.

Henrik Lundqvist
freelance journalist

Several reasons for decline

An economic slowdown in the US and expensive 3G licenses in the UK and Germany. These are two important reasons for the recent declines in the telecom industry.

These are the results of a telephone survey of external telecom analysts, who all agree that these two events during the preceding year must be viewed in context.

"There was naturally a chain of events that had a negative impact on the telecom industry," says Stefan Olsson at Fischer Partners.

"Work backwards from the enormously expensive European 3G licenses and it's easy to figure out that it's going to take a long time for operators to get their money back," says Urban Ekelund, telecom analyst at Redeye.

Maria Bernström at Ericsson Investor Relations points to a number of events over the past years that have affected suppliers in the telecom sector.

Maria Bernström

"Last spring, fees for 3G licenses in the UK and Germany went through the roof. This contributed to weakening the operators' share prices. Later in the year, the capital markets became much tougher for certain operators, particularly newcomers."

Unrealistic expectations

Maria Bernström believes that expectations both in the telecom sector and the IT sector as a whole have become unrealistic over the past year. Not everything is going to happen at once.

"Many people overestimated the pace of development over the short term and underestimated the potential for the long term. People were disappointed and telecom shares fell," observes Maria.

It became more expensive for operators to borrow money, and many have therefore had to reconsider their investment plans. This coincided with the slowdown in the US economy.

Several of Ericsson's competitors have also been severely affected:

- Lucent's stocks began to fall a year ago.
- Motorola was forced to issue profit warnings on several occasions last year.
- This year, Cisco surprised the market by not being able to promised increased growth.
- Nortel shocked the market just one month ago, resulting in a record fall of nearly 33 percent in one day.

Reasonable level

Analyst Stefan Olsson believes that valuations are now down to a reasonable level but that there is still much confusion in the market.

"The telecom sector is currently in a situation in which we analysts see no clear trends. This means that the situation is uncertain with people predicting doomsday scenarios to those who believe that the upturn has already started," says Stefan Olsson.

Maria Bernström, believes that expectations have been too high with respect to how quickly the mobile Internet will develop. "We are now in a more uncertain period in which it is necessary to clearly refocus on new market conditions and to be as flexible as possible.

"Ericsson as a company is on solid ground," emphasizes Maria Bernström.

"In recent years, Ericsson's market value has increased noticeably and to a greater extent than any of our competitors. The trend for Ericsson during 2000, was better in terms of market value, than the Nasdaq average.

Also reflects risks

According to the retail brokerage and investment firm Wells Fargo's Van Kasper, the Ericsson share was overvalued, an assessment that Maria Bernström will neither confirm nor deny.

According to her, the valuation not only reflects growth expectations, but also an assessment of risk and other factors.

"Overvaluation and estimated risk aside, the fact is that investors still regard the telecom sector as unstable. In this regard, however, it should be remembered that Ericsson is one of the oldest and best established companies in the industry," emphasizes Maria Bernström.

"Investors need only look at Ericsson's customer base for confirmation. Exposure and credit risks are high if the customer base includes a lot of newcomers, but Ericsson has a good balance between newcomers and established customers."

She believes that Ericsson's presence in some 140 countries means that the company is not as vulnerable, compared to its competitors, to risks in any one country.

"But we are naturally affected by the downturn in the US, which no supplier can escape," says Maria Bernström.

Many people overestimated the pace of development over the short term. People were disappointed and share prices fell.

Maria Bernström

Ericsson's Chief Financial Officer Sten Fornell believes that it is important that the company should now formulate plans that are well conceived and firmly anchored in the organization for enabling the company to adapt to the new situation.

"We are making an intensive effort right now. Naturally we are looking at total costs and will include measures to release capital in such areas as inventories and receivables to provide funds that will be needed for continued growth in a very dynamic market".

The changes in the market occurred rapidly and demand a review of total costs, according to Sten Fornell, Ericsson's Chief Financial Officer, shown here with Jan Wäreby, head of the Consumer Products Division.

Photo: Lars Åström

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Jakarta is a lush city with palms and banana trees lining its streets. The telecom market is also growing and last autumn, Ericsson managed to become the country's leading telecom provider.
Photo: Lars Åström

FACTS/**INDONESIA**

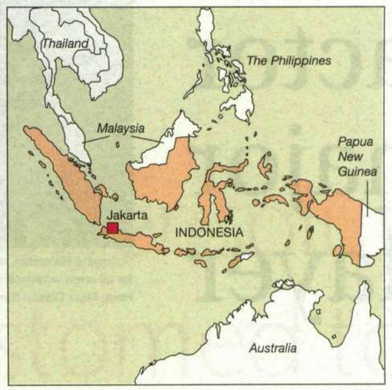
The Republic of Indonesia extends 5,000 kilometers across the world's largest archipelago, with over 14,000 islands, 6,000 of which are inhabited. Total area is greater than the European continent.

The climate is tropical, with a rainy season from November to May. The average daily temperature is + 27°C year round.

The country is the world's fourth most populous, with 210 million inhabitants stemming from approximately 300 ethnic groups, including five million Chinese. With over 500 languages spoken, Bahasa Indonesia, which is based on Malaysian, serves as the universal language. There is freedom of religion in the country, with 87 percent Islamic, 9 percent Christian and 2 percent Hindu.

Two-thirds of the population resides on the island of Java, home to the country's capital city, Jakarta, with its ten million inhabitants.

Some of the key industries include oil, gas, textiles, timber, coffee, coal, tin and copper. Tourism is the fourth largest source of revenue. The country's gross domestic product is approximately USD 70 billion.



Fertile ground for telecom market

"Put a plant in the ground and within a few weeks you'll have a tree," says Eric Timmer of Ericsson in Indonesia.

He is responsible for the Excelcomindo account, one of the country's many GSM operators. Indonesia is situated in one of the most fertile regions in the world. Telecom networks, especially wireless ones, are expanding just as fast as the trees grow.

➤ Ericsson's headquarters in Indonesia are housed on the top four floors of a high-rise building in southern Jakarta. The view is captivating. Greenery everywhere, palm trees and banana trees lining most of the streets. To the north, a beautiful skyline is visible, with buildings of nearly skyscraper proportions, all creatively designed by domestic Indonesian architects. Including the outlying areas, greater Jakarta has just over 20 million inhabitants.

Eric Timmer estimates the potential number of Indonesians who can afford a phone to be far in excess of 30 million. His client, Excelcomindo, is still the smallest of the national GSM operators, with 760,000 subscribers.


Eric Timmer

"We're currently experiencing strong pressure from Excelcomindo regarding expansion. We're delivering a steady stream of base stations – by next year the operator expects to have more than 1.1 million subscribers."

Over the past year, Ericsson rose through the ranks to become the country's largest telecom supplier.

There is a palpable feeling of optimism about the future at headquarters. Communications manager Dewi Widiyanti gives us a tour together with public relations manager Lucky Mirza.

This innovative duo have their hands full with everything from product launches, trade shows and press conferences, to internal support and sponsorship.

Strong brand

One project involves sponsoring telecom students at several universities. Another involves a large assistance program to provide support to poor families in one of Jakarta's suburbs. For that project, employees are contributing half the funds with Ericsson providing the rest.

"Ericsson has established a reputation as a good citizen, both among customers and the media, and has consequently become well-known to the general public. That is one of the reasons why we've established such a strong brand here," says the company's President, Mats Olsson.

"Indonesia is the last major Asian market for us to conquer," says Patrik Duffy, whose responsibilities include the important aftermarket. "The mobile sector is the fastest growing part of the entire economy. An important aspect of our job is to identify talent and develop 3G and the mobile Internet," he adds.

Ericsson is focusing heavily on Telkomsel, the largest mobile operator and currently the only one to operate a nationwide GSM 900 network. Franky Prionggo is involved in this.

"We're currently Telkomsel's fourth largest supplier, but we're working hard to be one of the two that will be selected for future projects. We've just submitted a bid. Our main competitor is Siemens, but the client thinks we offer excellent quality. Currently, 75 percent of all radio links delivered to Telkomsel are MINI-LINK from us."

Harry Nugraha is responsible for Indosat, an operator that controls over 80 percent of the international traffic. Now Indosat also has plans to become an operator with nationwide coverage, and is launching a major campaign for a new GSM 1800 network that includes GPRS, the first order of its kind that Ericsson has received in Indonesia.

"Ericsson is the sole supplier to Indosat, with responsibility for implementing a total solution. The contract is valued at USD 150 million, making it last year's biggest sale," says Harry Nugraha.

Mobile telephony a new area

The contract was signed on October 3. Just a few weeks later, the first material shipments arrived. Installation began immediately and the first official call was made on New Year's Eve 2000 to the Vice President of Indonesia, Megawati Soekarnoputri, who was on a pilgrimage to Saudi Arabia.

"We view Ericsson as a partner that can provide us with increased expertise," says Budi Prasetyo, Vice President at Indosat. "In just three months, Ericsson will be delivering over 500 base stations to us, while teaching us what we need to know about mobile telephony, which is a new area for us. Ericsson was able to keep its promise about the first call."

Everything should be completed by the end of April, with Indosat's GSM network going into commercial operation in August. By then, Ericsson will have supplied infrastructure that will be sufficient for 420,000 subscribers.

"The government has set a requirement that we provide coverage to 50 percent of the population within five years. Our own goal is three years," says Budi Prasetyo.

New operators

T. Anpan is responsible for the two new regional operators, Natrindo and Kodel. He also works in corporate communications.

"Several new regional mobile operators will be establishing themselves this year, including one that will be providing coverage for densely populated greater Jakarta. They want to get started immediately. By being so fast, we have a significant chance of securing most contracts," says T. Anpan.


T. Anpan

Anpan believes that corporate communications could take off in Indonesia with the new distributor, Astra Graphica. There are a few major MD110 installations among oil firms, banks and the operator Excelcomindo, for their nationwide internal networks.

It is T. Anpan's opinion that the emerging Call Center market could quickly expand. Several important customer projects even involve data networks using IP routers. Telkom, which used to be the country's sole supplier of telecom services (PTT), falls under Sam Saba's area of responsibility. This one customer alone accounts for between 25 and 30 percent of Ericsson in Indonesia's earnings.

"It's also important for us to become a supplier to the newly formed Telkom Mobile which, like Indosat, is currently building a new nationwide GSM 1800 network. The client has ranked us number one both technically and commercially. Now we're competing for phase two, which will be decided during the first quarter.

Ericsson also works with Telkom's multiservice network, and at the end of last year an ADSL contract was signed for the country's second largest city, Surabaya.

Doors opening

Another project that has been ongoing for several years involves 200,000 fiber-optic lines in Jakarta. For over 20 years, Ericsson was not permitted to sell AXE switches in Indonesia for political reasons. Since last year, this has no longer been the case.

"This provides us with an enormous opportunity and paves the way for the introduction of the Engine solution," says Sam Saba.

Indonesia is the last major Asian market for us to conquer. The mobile sector is the fastest growing part of the entire economy

Patrik Duffy

It was only recently that responsibility for customers was divided among a number of key individuals at Ericsson in Indonesia. Previously, responsibility for most GSM customers rested on a single man, Johan Lallerstedt, who is now poised to move on to new Ericsson assignments.

"Indonesia is a fantastic country that I will miss a great deal when I leave. I have not had a single boring day during my five years in the country, but have continuously encountered both challenges and rewards. Nowhere else have I seen such an enthusiasm for work as I have encountered here. Whenever important deals are in the works, the employees rise to the occasion with remarkable enthusiasm," says Johan Lallerstedt.

Thord Andersson
freelance journalist

From minor actor to major player

Following Ramadan, the month of fasting, is the feast of atonement known as Halal Bihalal, when forgiveness is asked for all one's wrongdoings over the past year. Ericsson invited people to celebrate Halal Bihalal at the end of January. Here, Mats Olsson thanked everyone for their hard work, which has propelled Ericsson to first place.

Photo: Lars Åström

"We're now the supplier to four of five GSM operators in the same market. That puts us in a unique position," says Mats Olsson, who has been head of PT Ericsson Indonesia since its inception in January 1996.

Having spent twelve years in five different Asian markets, he is one of Ericsson's most experienced managers in the Asia Pacific region.

➤ During 2000, Mats Olsson elevated his company to the number one position in the industry, with over USD 400 million in earnings. Back in the mid-1990s, the situation looked very different. Ericsson was a minor player in fifth place. By 1996, orders received totaled USD 240 million, a new record for Ericsson, which has conducted business in Indonesia since 1907. In 1996, the most important client was the new GSM 900 operator, Excelcomindo.

In 1997, invoiced sales reached USD 170 million, also a record. At that point, the prospects looked very bright for the future. The first mobile network had been put into operation and employees were motivated following their successes. Then the economic crisis in Southeast Asia began in Thailand in May 1997. Indonesia was the last country to feel the effects, but also the hardest hit. The value of its currency fell by almost 80 percent.

"We lost a lot of money in 1998," says Mats Olsson. "Everything came to a complete halt that year."

In May, political unrest and demonstrations shook Jakarta. More than 6,000 buildings were destroyed. Foreign companies evacuated contract employees. Ericsson temporarily relocated 140 employees to Singapore. However, the company never completely withdrew from the country, which is one of the major reasons why customers have such confidence in Ericsson today.

Fallout from this unrest resulted in about 40 percent of the 500 employees being laid off. Included among those were 75 percent of the contract employees.

A turnaround occurred during the second half of 1999. The country's first democratic election in the middle of that year put Abdurrahman Wahid into the presidency, with Megawati Soekarnoputri serving as Vice President. The democratization process had now picked up momentum and the business situation was looking increasingly bright.

Restructuring was completed in 2000, and in the same year a real breakthrough was achieved. The new management group is made up of equal numbers of Indonesians and contract employees from Ireland, Lebanon, Malaysia, Sri Lanka and Sweden.

Mats Olsson, an experienced manager, has succeeded in elevating his company from fifth to first place in the market.

"It's one of Ericsson's strongest management groups in Asia Pacific," says Mats Olsson.

"In similar fashion, we have many talented Indonesians working further down in the organization. Our strategy was simple and clear: Take on any business that's going! We received more than we could have imagined. We actually didn't lose a single major deal during the year 2000, nor will we this year."

Thord Andersson

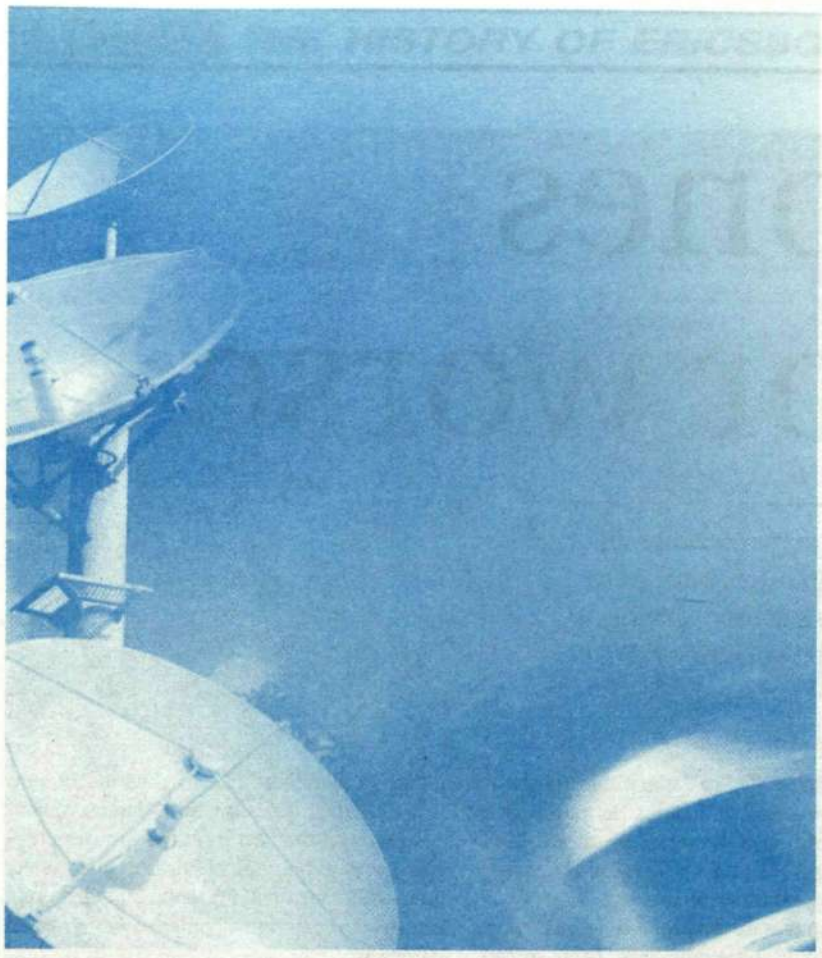
70 percent of Ericsson's sales of mobile phones in Indonesia are made at the Roxy department store in Jakarta.

FACTS/AN ENDLESS TELECOM MARKET

The need for telecommunications is enormous in Indonesia. Currently, there are only 6.5 million fixed lines and 3.6 million mobile subscriptions. That translates into a telephone density of just three percent, spread among a large number of operators that have appeared on the scene following widescale deregulation.

Both Telkom and Indostat (international traffic operators) are controlled by the government, which has 60 percent ownership. Otherwise, there are multiple ownership arrangements involving several of the world's major operators.

The operators have major ambitions. Some are even starting to aim for 3G. In Indonesia, where the need for basic telephony services is so great, the expansion of GSM combined with GPRS will remain a priority over the next few years. This year alone, some 1.5 million new GSM subscriptions are expected. This is in addition to significant expansion of the fixed network.



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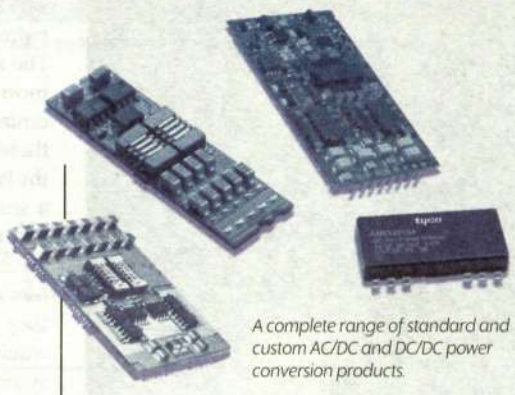

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Telephones for better for worse

From cattle fences and the Kreuger crash to the success of AXE and Engine. Ericsson's history is filled with drama and extremes. Ulf Olsson, one of Sweden's leading Ericsson experts, explains how a small mechanical workshop became one of the world's largest telecom companies.

➤ Ulf Olsson, professor of economic history at Gothenburg University, has been studying Ericsson for nearly 30 years. His fascination with the company has resulted in several books, including two of the three-volume set L M Ericsson 100 Years that was published in 1976.

"It's hard not to be impressed by a company that has remained at the forefront of technical development over 125 years. The fact that Ericsson is a Swedish company makes it even more interesting," explains Ulf Olsson, adding that he often compares Ericsson to a river that is constantly changing its course.

"During certain periods, the company has focused on one thing, and the river has flowed straight ahead in a narrow gorge. At other times, such as during the period from 1930 until World War II, the river has branched out into an extensive delta system," says Ulf Nilsson.

On several occasions, however, the river was close to running dry. One serious crisis arose in the early 1920s, when Ericsson was threatened by the first shift in technology.

"Ericsson was very late in changing from manual to automatic switching systems, which could have led to a catastrophe," relates Ulf Olsson.

Siemens had already launched the first automatic telephone switch in 1909. Competitors were quick to follow, but for some reason, Ericsson lagged behind.

"Ericsson's manual switching system had been a great success for the company, and Ericsson was simply blinded by the excellence of its own technology," says Ulf Olsson.

When Ericsson finally realized how superior automatic switching systems were, compared with manual switches, an intensive effort was launched to make up for lost time. Not until 1923 was Ericsson's 500-line switch launched. Thankfully, it proved to be at least as good as competing products, which saved Ericsson during that crisis.

Threatened by the Kreuger crash

Less than a decade later, Ericsson's business was once again threatened when a certain Ivar Kreuger emerged as one of the company's principal owners.

"The famous Kreuger crash, which led to Ivar Kreuger's suicide, is undoubtedly the single most dramatic event ever to effect Ericsson," notes Ulf Olsson.

At the time when he became one of Ericsson's principal owners, Ivar Kreuger was a well-known businessman in Sweden. In 1913, he established Swedish Match (Svenska Tändsticks AB), which controlled 75 percent of the world market for matches, earning him the title of "match king" in the contemporary press.

Ivar Kreuger had no particular fondness for Ericsson, however, but rather unscrupulously exploited the company's assets to finance new loans or to pay off old debts. The frenetic circle of borrowing became increasingly complicated, and in the spring of 1931, Ivar Kreuger decided to sell his majority shareholding in Ericsson to International Telephone and Telegraph Corporation (ITT), which in return paid Kreuger USD 11 million. This meant that ITT would become Ericsson's new majority owner. As it turned out, however, not only was this contrary to Swedish law, but Kreuger had also grossly overstated Ericsson's assets. When ITT's auditors discovered this, the company demanded that the agreement be canceled and the purchase price repaid. By this time, however, Kreuger had spent the money, and Ericsson was so deeply in debt that no one was longer willing to extend further credit. Ivar Kreuger himself fled to Paris, where, tormented by his financial difficulties, he took his life on March 12, 1932. Kreuger's death left both Ericsson and ITT in deep financial chaos that took many years to resolve.

"Ericsson was extremely close to bankruptcy and would probably have been forced to shut down operations if the Wallenberg family had not come to the rescue," relates Ulf Olsson.

"It's hard not to be impressed by a company that has remained at the forefront of technical development over 125 years"

Ulf Olsson

The Swedish businessman Ivar Kreuger was close to ruining Ericsson during the famous Kreuger crash in the early 1930s. This photo was taken in 1932, the same year that he committed suicide in Paris. Photo: Pressens bild

The Wallenbergs placed millions in new investments in Ericsson, and Marcus Wallenberg Jr., who the year after the Kreuger crash became vice chairman of Ericsson, succeeded, after skillful negotiations with ITT, in restoring Ericsson to a strong and independent Swedish company.

New successes

The years passed, and by 1950, Ericsson was facing the next shift in technology. This time it was the transition from the 500-switch to the crossbar switch.

"Ericsson handled this transition much more skillfully. Although the US and Britain were somewhat in the lead, Ericsson once more produced the best finished product," says Ulf Olsson.

The crossbar switching (KV) system was a sequentially driven, link-connected system with silent arm movements and fast switching. A famous slogan for the crossbar switch was "No racket, no time and no maintenance," which neatly summarized the crossbar switch's superiority over the selector switch. The KV system was launched at a time when most countries needed to expand and modernize their telephone networks, and it was therefore a great success around the world. In the late 1950s, the KV system was succeeded by a smaller and electromechanically more advanced code selector system.

Although crossbar switches and code selectors were tremendous successes in their time, they paled in comparison with what Ericsson would achieve 20 years later with the AXE system.

AXE greatest success

"I view AXE as Ericsson's greatest success. It was without a doubt AXE that made Ericsson a global company with offices and manufacturing plants all over the world," says Ulf Olsson.

AXE was a completely new switching system that was computer-controlled and employed digital switching technology. The first AXE station using a digital group switch was placed in operation in Turku, Finland in 1978. By 1982, 44 countries had chosen the AXE system. Eventually, AXE was also used in mobile networks, helping to make Ericsson the leader in mobile networks, with 40 percent of the global market by 1986.

With 3G, Ericsson is once again in the midst of a shift in technology. Ulf Olsson sees many parallels between the Mobile Internet and the atmosphere that prevailed and the discussions that took place when railways and electricity were on the verge of a breakthrough.

"Expectations for what the mobile Internet will be able to do for us are enormous. Although many expectations will undoubtedly be realized over time, just as with the railways and electricity, it will undoubtedly take a little longer than most people expect to see the true effects of 3G," concludes Ulf Olsson.

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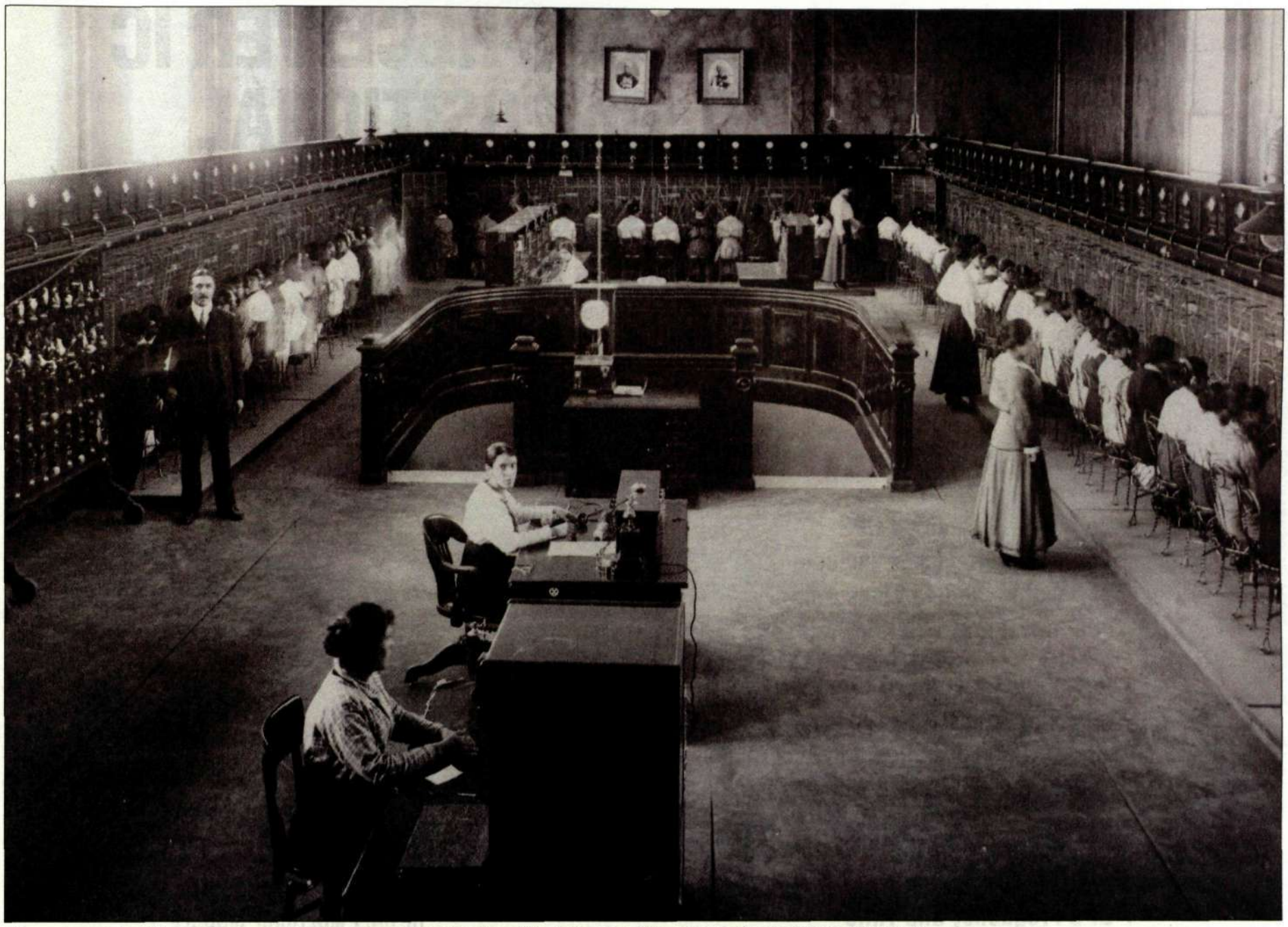

Ericsson's manual switch system was a major sales success around the turn of the last century. This photo was taken in Mexico City in 1912.

Both luck and talent behind successes

Ericsson came into being at the same time as the telephone and has remained at the pinnacle of the telecom industry for virtually all of its 125-year history. However, without talented employees, a willingness to cooperate and good fortune, the company would hardly be in the position it is today.

➤ Ulf Olsson suggests three main reasons behind Ericsson's success.

"Ericsson, like other large Swedish companies, has benefited from 'the Swedish model,' whose adoption led to the creation of the Swedish Welfare State," says Ulf Olsson.

The model was based on close collaboration between the government and Swedish industry. The government felt that it was of the utmost importance that Sweden have its own companies producing Swedish-made products. With the government as the single largest customer, companies such as Ericsson, Asea and Saab were able to quietly develop and expand.

"This also allowed the companies to retain large portions of their profits within the company. Instead of distributing large amounts of money to shareholders, they were able to reinvest in more research and development," says Ulf Olsson.

The model also resulted in a successful symbiosis between Ericsson and the former Swedish telecom, Televerket.

"Instead of distributing large amounts of money to shareholders, they were able to reinvest in more research and development"

Ulf Olsson

"These companies experienced huge successes together on the national level, partly through a jointly-owned development company known as Ellemtel. This cooperation was also one of the reasons why Ericsson succeeded so well in the international market," says Ulf Olsson.

Another important factor was that Ericsson had the good fortune to find financiers willing to take risks early on in its history.

Ulf Olsson is most impressed by the fact that Ericsson, from a country as small as Sweden, has been one of the telecom industry's biggest companies for such a long period of time.

Photo: Ecke Küller

"Both the Wallenberg family and in fact also Ivar Kreuger invested large sums of money in Ericsson when the company was in greatest need of capital," says Ulf Olsson.

Last, but certainly not least, the technical expertise within Ericsson has contributed to the company's success, according to Ulf Olsson.

"For virtually all of its history, Ericsson has been run by people who have had the ability to embrace new impulses from the outside world and adapt the company accordingly. The company has also been willing to proceed more cautiously in some strategic situations. Although Ericsson has not always been the first to market with new solutions, its products have frequently had the edge on the competition, once they were launched."

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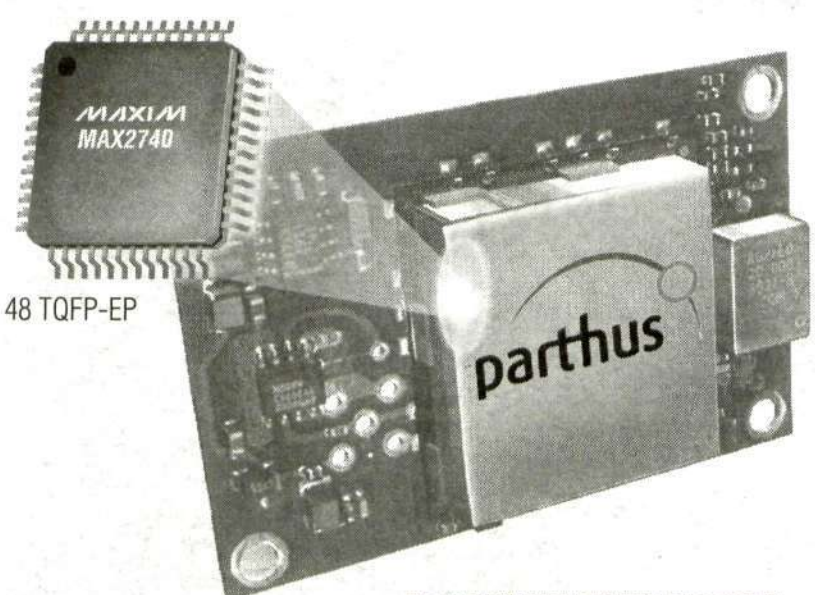

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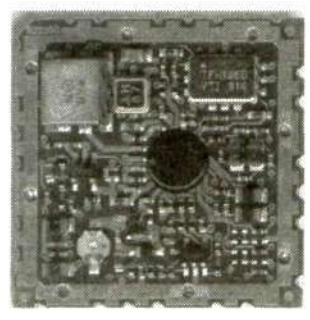

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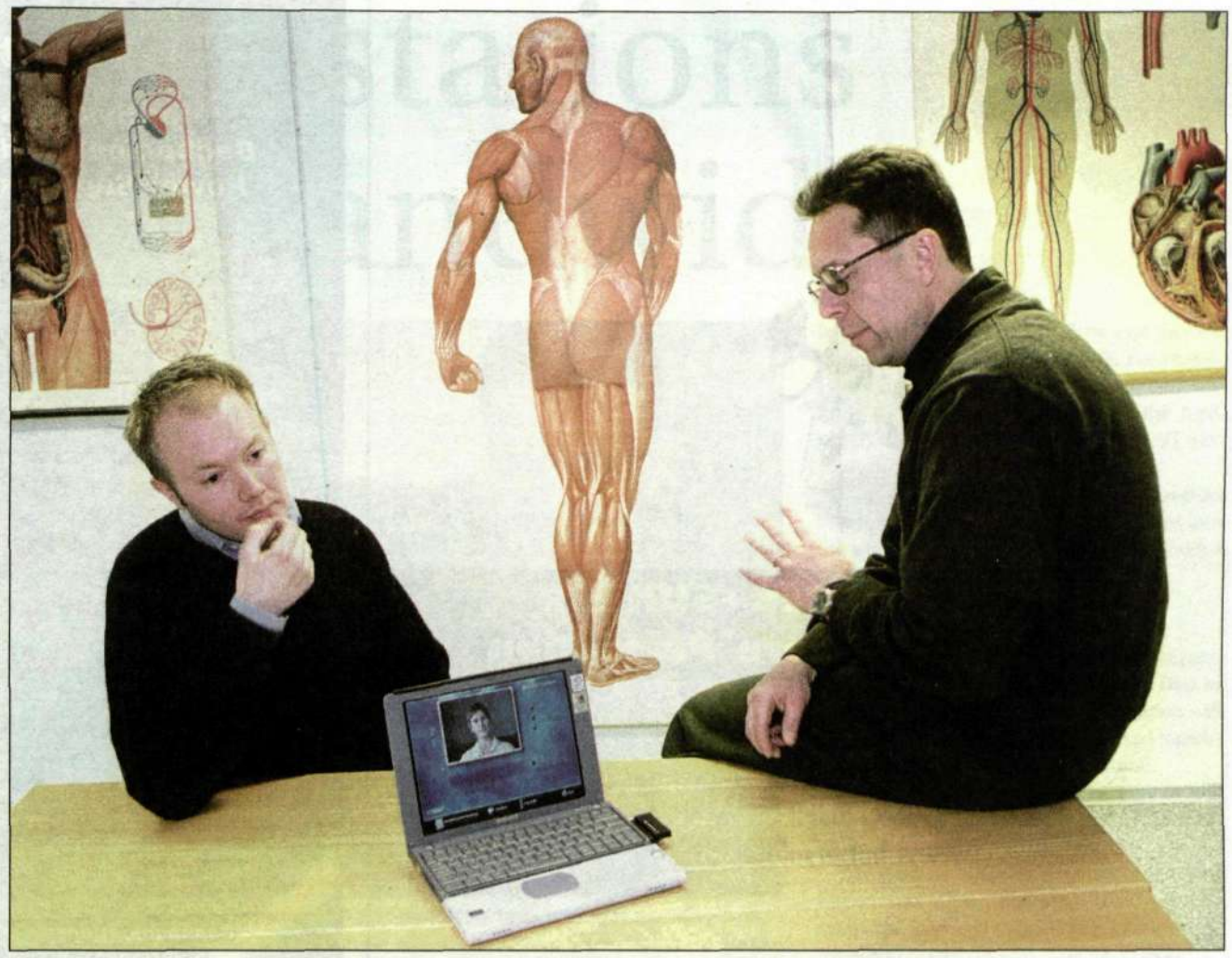

Virtual patients offer Alexander Hedman, a medical student, an opportunity to test both his medical and social skills. Uno Fors, a department head at the Karolinska Institute, emphasizes that the system must be viewed as a complement. Photo: Eduardo Valenzuela

In the near future, medical students will be able to ask questions and conduct examinations and tests on patients over the Internet, discussing their cases using real-time videoconferencing. Ericsson and the Karolinska Institute, Sweden's largest medical school, collaborating to put the finishing touches to a new patient simulation program.

Dry run for med students

➤ "Are you thinking?" inquires a somewhat irritated female patient, who gives us an urgent glance on the monitor, in order to demonstrate that she does not have time to sit there all day.

"If you don't devote your attention to her, she first inquires whether or not you are listening, sometimes resulting in her getting up and leaving. In that way, the program seems very lifelike," says Uno Fors, head of the Department of Humanities, Informatics and Social Sciences at the Karolinska Institute.

The woman on the display is one of twelve patients available in the new patient simulation program. The program is still being tested and evaluated, but there are plans to start using it by this spring on a small scale for physician training.

By spring 2002, it will be utilized by all medical school students who are in their fourth or sixth semesters at the universities of Stockholm and Uppsala, as well as Stanford in the US. Each of these three universities have received funding from Swedish Learninglab to develop the program, through the Wallenberg foundation.

Uno Fors continues to click through the program, demonstrating how one can pose queries, feel a person's tummy, look down their throat or into their stomach (gastroscopy), listen to their lungs and take x-rays.

"It's a very good way to practice patient interaction – posing questions, conducting examinations and coming up with diagnoses, even before their internships begin. It provides us with the freedom to test along the way, experimenting in a manner that would be difficult in other contexts," explains Alexander Hedman, who is in his seventh semester of medical training in Stockholm.

If you're inattentive, she might get up and leave

Once they make a diagnosis, students receive feedback about which questions they should have asked and which tests they forgot or were unnecessary.

The program also allows students to hook up to the Internet and conduct real-time discussions via videoconferencing with medical students in Uppsala and the US, regarding how a case should be solved.

The main concept behind the interactive program was created ten years ago.

The initiator, Rolf Bergin, who was head of the department at the time, foresaw the need for a better solution that would allow training on many different kinds of patient cases during instruction.

"The downside to medical training is that we either encounter cases that are too similar to one another – at an ear clinic you see mostly ear infections – or cases that are too complicated. The patient simulation program makes it possible to train on solving numerous kinds of cases. Besides, it's more fun than just sitting and reading books," says Alexander Hedman.

"However, the program must be viewed as a complement to clinical coursework, not a substitute," emphasizes Uno Fors.

Collaboration with Stanford University is providing a more global perspective on how to evaluate and treat patients. Uno Fors would like to see further developments in the program so that it could eventually also be used by practicing physicians.

"Already, there are systems in place that allow students and doctors to arrange meetings on the Internet, including what we refer to as telemedicine, but the system that Ericsson is helping us develop is more advanced and offers better graphics," says Uno Fors.

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Patient simulation showcases broadband

The patient simulation program provides a good way to demonstrate the kinds of opportunities that broadband has to offer. That was one motivation for collaboration between Ericsson's Multi-Service Networks Division and the Karolinska Institute. The simulation program was demonstrated at a Stockholm trade show on March 22.

➤ During the Council of Europe's special gathering in Stockholm on March 22–24, the Swedish Ministry for Foreign Affairs held a trade show in Älvsjö with the theme "Sweden and modern IT." Ericsson and the Karolinska Institute demonstrated the new patient simulation program there.

"We want to show our customers, especially wireline operators, the various kinds of services that are possible with faster network speeds. IT in the health care industry is a very timely and important field," says Petra Björkeson, project manager for the program at the Multi-Service Networks division.

Collaboration between Ericsson and the Karolinska Institute was launched last November. Uno Fors contacted Ericsson Microwave Systems in Mölndal to obtain assistance in improving the videoconferencing portion of its program. They reached an agreement for collaboration, with Multi-Service Networks viewing the program as a good opportunity to market Engine, which is a comprehensive term for various broadband solutions, partnerships with customers.

During the trade show, Ericsson is providing the necessary systems for the program to operate. Ten megabits is the minimum speed necessary to run the application. To achieve those speeds, either a local network (LAN) or a broadband solution across a wide area network (WAN) is required. A LAN connection at the trade show will provide 100 megabits of capacity.

In the future, Ericsson might be called upon to help Karolinska increase the speed of its broadband connection between the universities in Stockholm, Uppsala and Stanford in the US. For that, an Ethernet solution based on fiber-optic cable would be utilized.

The purpose of the display at the trade show – being held in conjunction with the Swedish Presidency of the EU – is to demonstrate to the general public, the media and governmental ministers from around Europe what Swedish companies and government agencies have developed within the IT field.

Included among the 30 or so exhibitors are the Swedish Handicap Institute, the National Swedish Tax Board and Swedish Customs.

Ulrika Nybäck

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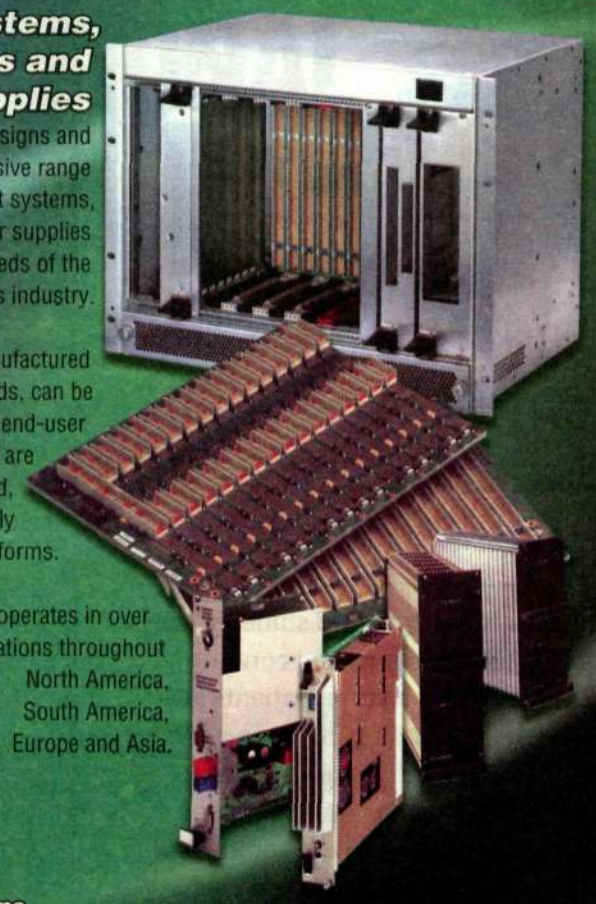

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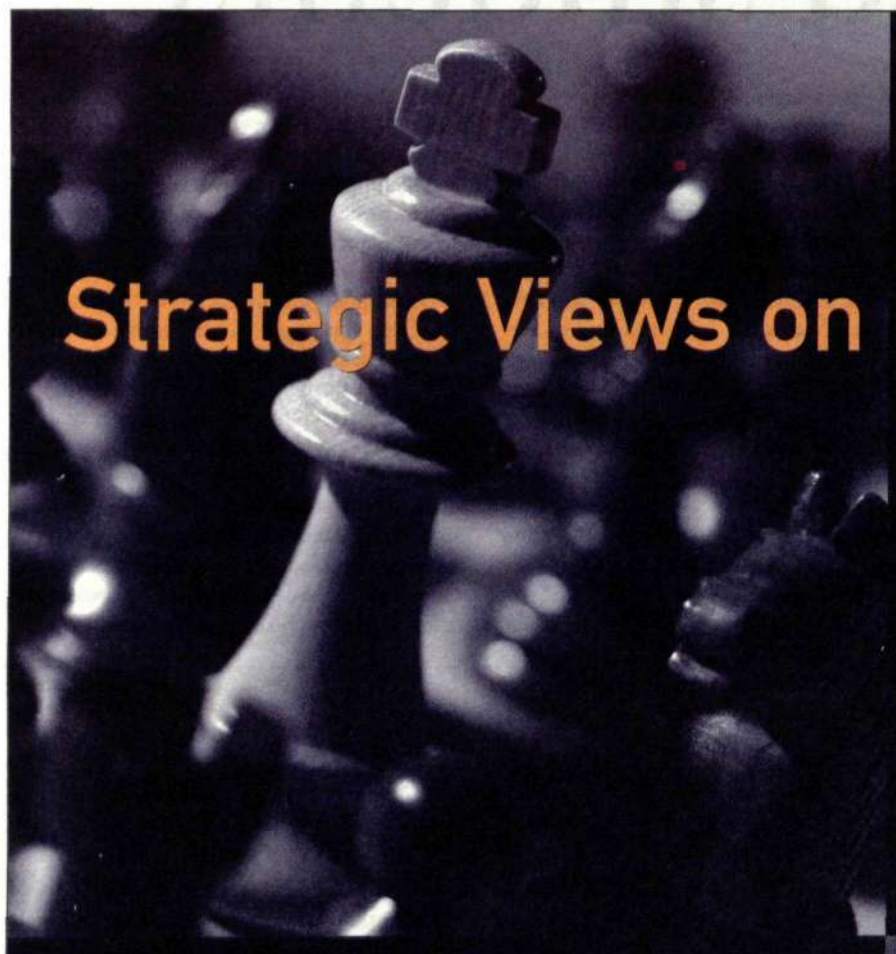

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Home base stations maximize bandwidth

Soon it will be possible to purchase a small radio base station, plug it into a home broadband outlet, and have access to a mobile network offering speeds of several hundred kilobits per second.

The name of the solution that Ericsson demonstrated at the CeBIT trade show is Mobile@Home. A product is expected to be on the market within a year.

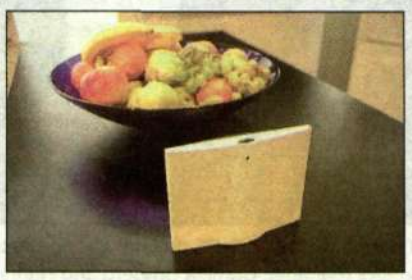
"It's possible to have up to three voice calls on the same home base station at the same time, plus data connections," say Claus Lindholt Hansen and Svante Nelsson, who worked on developing the new product. Photo: Lars Åström

➤ Most people spend a large portion of their time at home, but homes often have the poorest radio signal coverage, according to one of the men behind the creation of Mobile@Home, Svante Nelsson. This application allows users to continue using their mobile phones while at home, offering better service than would otherwise be available.

"It provides broadband and access to all the new 3G services such as SMS, MMS, WAP, calendar synchronization between Outlook and one's phone, e-mail, and mp3. And more than likely, this can be achieved at the same low price as for fixed telephony," adds Nelsson.

Switch station

An example is a GSM user who connects to the mobile network using ordinary radio base stations and BSC (the control unit for base stations). Once at home, however, the user is transferred to the small home base station (HBS). Calls or any other advanced GPRS services that people might choose, are linked to an HBSC (Home Base Station Controller) in the mobile network via a broadband connection: ADSL, fiber optics, cable TV, Ethernet or equivalent. For mobile switches, the HBSC works like any other control unit, even if it has to keep track of several thousand private small radio base stations. In order for the solution to work, mobile phone users must have a Bluetooth telephone, such as Ericsson's new R520. The base station can handle speeds of up to 700 kbps (up to several hundred kilobits in reality) with a powerful radio transmitter that has a range of 100 meters.



There are also several advantages with Mobile@Home. Mobile users need only have their mobile phone and their personal number in order to be reached anywhere and they are always connected through GPRS. For mobile phone operators, it means that other base stations will be relieved of some of the load, which will hasten the expansion of 3G networks.

Even "virtual operators," or other operators that lack 3G licenses, have a chance to get into the game as partners in various constellations and offer services.

Personal identity

Svante Nelsson and Claus Lindholt Hansen, head of development work at Ericsson Diax in Denmark, explain that every base station will have its own identity and will be linked together with the user's own mobile terminal.

In order for an outsider to be able to talk over a certain base station, they will be required to have access to this number.

The product includes both the home base station and HBSC. Ericsson's customers are operators who are considering offering end users both terminals and base stations. HBSC, which is located in the mobile network and is based on Ericsson's CPP access platform, will be able to control up to 60,000 HBS units.

"Mobile@Home is part of our Engine concept for multi service networks and a good example of convergence between fixed network and mobile services," says Svante Nelsson.

"Ericsson now has working prototypes of products and is negotiating with a couple of operators regarding field testing in early autumn."

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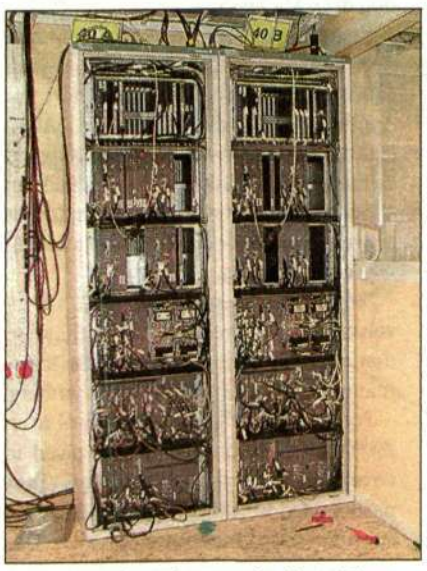
Replacing a popular cash cow

One of Ericsson's greatest successes to date, the RBS 200 radio base station for GSM, is now giving way to a new star, the RBS 2000. The last station was manufactured at the Visby plant, in Sweden, in March 2001.



A customer favorite – production of the RBS 200 is being replaced by the next generation, the RBS 2000.

➤ With investments focusing on new generations of base stations, the RBS 200 has had to make do with scarce development resources, but nevertheless becoming something of a cash cow in a league of its own

This might perhaps seems unfair – Ericsson could probably not point to any other product, save the AXE switches, that has brought so much money into the company.

Some 50,000 RBS 200 units are installed in more than 40 countries and will continue to faithfully serve their customers for many years to come.

"It's quite simply a generational issue," says Claes Ljung, project office manager for site solutions for radio base stations.

"Although customers continue to request our 200 station, they have to convert to the RBS 2000 since the signal processing capacity of the RBS 200 can't handle all of the new data services that are being implemented with 3G. It's time for a paradigm shift in digital mobile telephony; the market has reached a turning point."

The RBS 200 has, of course, continued to see developments over the course of its ten-year production run, but its processing capacity has now reached a limit. In order to facilitate work for Ericsson's operators, migration solutions are being offered for existing RBS 200 sites to create 3G capacity in combination with existing RBS 200 equipment. This shift is occurring as new construction methods for switches are being adopted, resulting in higher performance.

The RBS 200 was Ericsson's first series of completely digital base stations. Development actually began at RSA, which was then known as Radio Systems, before it was acquired by Ericsson and incorporated into ERA. The project manager was Jan-Erik Stjernvall and the first trials were conducted in 1989/1990 at Årsta, outside Stockholm, in collaboration with the Swedish operator Telia Mobile.

Work on developing prototypes began in 1990 with volume production starting in spring 1991 in Gävle. The first RBS 200 model was built for GSM 900 MHz, although other models have also been made, including the RBS 205 for GSM 1,800 (1983) and the RBS 204, which is an outdoor cabinet for the German and UK markets.

Other milestones were achieved in 1993, when Ericsson developed a Multicell solution that covered three cells instead of one and in 1994, when production was split into two units – one for cabinet assembly and one for site installation.

Production peaked in 1996, when approximately 700 cabinets a week were being manufactured. Already at that time, however, the successor – the RBS 2000 – was being planned, and production of the 200 stations was soon transferred to the Visby plant.

The RBS 2000 faces considerably greater challenges than its predecessor. It must be able to handle much more, and also be manufactured on a much larger scale.

The RBS 200 has been incredibly popular among customers, and has, according to Claes Ljung, come to symbolize quality Ericsson products. A successful signal processing upgrade for the RBS 200 was implemented providing favorable profitability, making the product family even more profitable.

Ericsson has ensured that maintenance of all RBS 200 equipment will continue for another ten years through Ericsson Services. A generic environmentally friendly recycling procedure has also been developed as part of the service offerings available from the Global Services Division.

Lars Cederquist

Bridge to 3G goes via R8 project

R8 is the new release of the GSM system that will enable a migration to GPRS. The BSS (Base Station System) R8 project – which has gone under the working name of Octopus – has been very extensive and important. As many as 600 employees worldwide have worked on the highly successful program.

The largest portion of the BSS R8 project was conducted by Ericsson Radio Systems in Linköping. Erik Niss, Marylyn Ganstedt, assistant project manager, Camilla Umberg and Henric Johansson have played significant parts. *Photo: Lars Åström*

➤ The BSS R8 project began almost four years ago, concluding in November 2000.

Kjell Carlsson

"It involved a large amount of development work with completely new technology for GPRS, including a new platform, new programming methods and new tools," says Kjell Carlsson, who served as the overall project manager. He is currently working at the WCDMA/PDC business unit.

Quality was an important goal for BSS R8, which was designed to be twice as good as its predecessor R7, which was itself of very good quality and had received praise from customers. In other words, the project posed a very difficult challenge.

"Everyone involved in quality-related issues at the design offices participated in the project from its inception. Market pressures to launch GPRS as quickly as possible were also significant, resulting in shortened timetables, making quality workmanship that much more difficult".

Altogether, between 500 and 600 development employees worked on the project. Design units from numerous countries participated, including Sweden, the UK, the US, India, Germany and Ireland.

BSS R8 for GSM systems consists of two parts, one being GPRS and the other GSM Classic. An important requirement was to get as many features or functions as possible within Classic, since it provides operators with the opportunity of greater earnings, which corresponds to sales value for Ericsson.

The development of R8 Classic began in earnest during autumn 1998. That portion of the project went very well.

"We were completely in control of the project, as compared with the GPRS portion, where we were not able to influence everything ourselves. For example, the standardization organization ETSI changed the GPRS specifications time and again during development".

"Another difficulty was the fact that the GPRS terminals were not ready in time. This, together with other factors, made the GPRS portion difficult to plan, resulting in delays."

Customers, meanwhile, were very adamant about getting the R8 Classic released, since it would enable GPRS testing to begin. By July, the first customer had put the new release into operation.

"Since then things have moved very quickly and with a high level of quality. Customer upgrades since the product was released by Ericsson have also been trouble free," says Kjell Carlsson. "It's no exaggeration to talk about a new record."

Octopus officially concluded with the launch of Classic. However, certain aspects of the GPRS project have continued in Linköping under the name Octoplus.

Gunilla Tamm
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FACTS/**THE R8 PROJECT**

The BSS R8 project actually comprised several smaller projects. They included the Base Station Controller (BSC), Base Transceiver Station (BTS) and the Operation Support System (OSS), which is a monitoring system.

Key parts of project done in Linköping

The largest portion of the BSS R8 project involved the Base Station Controller (BSC), for which Ericsson Radio Systems in Linköping assumed responsibility. An important part of that work has been and remains testing, which has been monitored by representatives of GSM operators in Linköping.

➤ In addition to testing, important aspects of the project have included improvements in the way customers upgrade their systems and new ways of collaborating in advance of deliveries.

"It has been a challenge to take a quality product and make something even better. Quality has been an integral part of the project since its inception," says Erik Niss, who was project manager for the BSC.

"That has resulted in close collaboration among the quality assurance people at Ericsson's various design offices."

Several customers have also been involved in testing through the CME User Group. The GSM operator user group deals with technical questions, among other things. The user group's testers have been in Linköping on several occasions to monitor testing. That has helped reassure them about product quality, enabling a faster rollout.

"We've also conducted tests using greater loads, in other words more traffic in the network, which has resulted in better system verification," says Erik Niss.

Speed important

In addition to quality, speed has also been a key aspect of the R8 project.

Henric Johansson, who is in charge of the project group that is working on implementation, explains that they have improved the method of customer upgrades. They are now performed using a method known as Remote Handling Change, allowing the work to be carried out from the operator's control center. In the past, technicians had to be sent out to every Base Station Controller (BSC) and complete the upgrade on-site

"Starting with R8, only the new method of upgrading will be used, resulting in considerable time savings. The 200 BSC's were upgraded in just four weeks, whereas using the old method, that would have taken several months," he says.

In time

"We began preparing deliveries ten months before development was finished," explains Camilla Umberg, who was project manager for the delivery portion of GSM Classic.

Preparations were made in conjunction with the ASO and SAFSC organizations at Ericsson. ASO is short for Applications Supply Office and SAFSC stands for Stand-Alone Field Support Center. Both units are involved in support and deliveries. Eight employees are responsible for customers in a specific geographic area.

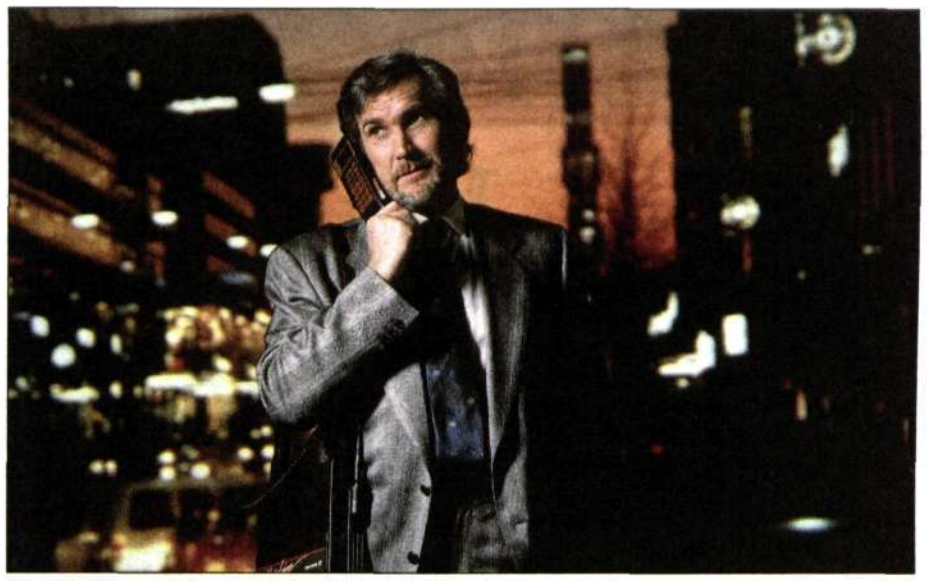
"In a GSM system, many nodes are involved. We've now coordinated those so that all the nodes report the same information to the ASO," says Camilla Umberg.

For a period of time, employees from the various ASOs were also involved in development work at Linköping. They participated in testing, which resulted in shorter testing times out at the ASOs. This also contributed to the rapid rollout of R8.

Gunilla Tamm

A revolutionary project

This article is the first of a series about Ericsson's role in the development of mobile telephony. We begin with a presentation of the revolutionary analog system NMT 450. In two forthcoming articles, we will describe the second-generation digital system and the third-generation (3G) to which the industry is now moving.



In 1986, Ericsson introduced its Hotline model, weighing only 700 grams – one tenth the weight of its precursors. Harry Hotline made important calls from major cities around the world.

➤ Mobile telephony is not just a development of the late 20th century. As early as 1956, Swedish PTT Televerket put a mobile telephone system into operation, and in the 1960s, Sweden had two different systems, one of which remained in service until the end of the decade, when it had 125 subscribers. With the technology available at that time, however, it was difficult to expand the area of coverage or increase subscriber density. Televerket realized that a radical solution to these problems would be needed. At a Nordic telecommunications conference in 1969, the operator won support for a development project for mobile telephony, and the conference participants agreed on directives for a joint Nordic working group. The group, which was called Nordic Mobile Telephony (NMT), presented its first report in 1970.

The report recommended a Nordic automatic mobile telephone system. It was estimated that it would take about ten years to complete the project, not because it involved a great volume of work, but because new technology in microelectronics needed to become available. The manual, operator-assisted mobile telephone networks, such as the MTD service launched in Sweden in 1971, were therefore viewed as an interim solution. This system grew to about 20,000 subscribers, however, and remained in operation until 1987.

The report also recommended that mobile terminals (which would be installed in cars and other vehicles) should be owned by the subscribers themselves. This was revolutionary, given the monopolistic traditions of the PTTs.

When the NMT group in 1977 finally invited suppliers to submit quotes for telephone switches and base stations for the new system, the two candidates were LM Ericsson's X division and Svenska Radioaktiebolaget (SRA), which is now ERA.

Wanted AXE

The NMT group wanted AXE as the switch. An AXE station had been installed in Södertälje, Sweden in 1977, and Ericsson's flagship product had already achieved significant success. Although the world was still largely analog, digital switching technology would greatly increase the value of mobile telephone switches, particularly with respect to call handover, searching and several other services. AXE was chosen.

SRA did not have a finished design to offer for base stations. The company was more interested in producing the mobile terminals. Initially, SRA's contribution was limited to control units that had been developed and manufactured for Magnetic, another Swedish company. As it turned out, Magnetic and Mitsubishi were the first suppliers of radio base stations for the Nordic countries.

The specification for the 1977 request for tender assumed that the NMT systems would be taken into operation on October 1, 1981, which was also the case. In many respects, NMT marked the start of a new era in mobile telephony. Just four years after the inauguration of NMT 450, Ericsson had built networks for the three standards established at that time: NMT, AMPS in the US and TACS in the UK. With NMT 900, a standard that was introduced in 1986, phones were introduced that could truly be called portable. The days of the large, heavy mobile terminal were over. Mobile phones had arrived.

Saudi Arabia first

The world's first automatic cellular mobile telephone system was taken into operation in September 1981 in Saudi Arabia. In June 1977, the Saudi Arabian Ministry of Communications had announced an international bidding competition regarding the expansion of the telephone network by nearly half a million subscriber lines and modernization of the existing network. Ericsson and Philips, which had formed a joint venture for the product, signed a contract on January 25, 1978. The following year, they received a second contract, and Ericsson succeeded in winning approval for its proposal to build a mobile telephone network in the country.

Two breakthrough years can be noted: 1978 for AXE and 1981 for mobile telephony. And in the Saudi Arabian project – which at that time was the largest in the history of telecommunications – Ericsson won over such giants as AT&T and ITT.

Bertil Edin
freelance journalist

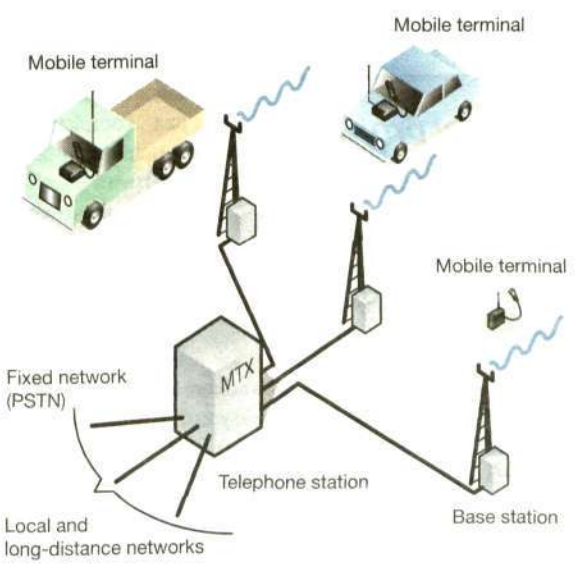
FACTS/**ANALOG MOBILE TELEPHONE SYSTEMS**

- **NMT:** There are two variants, NMT 450 and NMT 900. The numbers indicate the frequency bands used. NMT 900, which was introduced in 1986 when channel capacity in NMT 450 was exceeded, also offers roaming in the Nordic countries. NMT remains in use in the Nordic countries, eastern Europe, including Russia, Malaysia, Thailand and Morocco.
- **AMPS:** Advanced Mobile Phone System. This first AMPS network was taken into operation in 1984. The standard is used in the Americas, Australia and several countries in Asia.
- **TACS:** Total Access Communication System. A modified version of AMPS that uses a slightly higher frequency. These modifications were primarily made for the British market, where TACS was introduced in 1985. The system is used in large areas of the world.

FACTS/**NMT 450**

The NMT 450 mobile telephone system has three basic components:

- Telephone station equipment – a subsystem in the AXE 10 switching system connects base stations via ordinary telephone lines. The portion of the AXE station used for mobile telephone traffic is called MTX.
- Base stations are responsible for radio communication with mobile subscribers in their services area and convey all signals between the radio network and the equipment in the telephone stations. The signaling for calling and traffic channels is thus digital.
- Mobile terminals are normally mounted in a case that is the same size as a conventional car radio. There is a keypad on which the vehicle operator can easily enter numbers to make calls to other mobile subscribers or to the fixed (public) network.



A network with mobile subscribers and its connection to the public network via AXE 10.

Illustration: Claes-Göran Andersson

How the system works

➤ A network is built up of base stations. Their number and locations depend on the country's size and topography, as well as the number of subscribers to be served. Base stations connected to the same telephone station make up one or more traffic areas.

In order not to interfere with each other, adjacent base stations must use different frequencies. One channel in each station is used as a calling channel, while the others are used for traffic (voice connections).

- **Calling a mobile subscriber**

In the national numbering scheme, a mobile telephone system constitutes a number group, and the service can be accessed from anywhere in the country using the same area code. Each mobile subscriber has a unique number in the number group.

Based on the area code, calls are connected to the telephone station, which, after an analysis of the number, sends out a calling signal to all base stations in the appropriate traffic area.

When the mobile terminal detects the call, it automatically sends back an acknowledgement on the same channel. The switch has now located the base station through which the caller can be reached.

- **Calls from a mobile subscriber**

When a mobile subscriber places a call, the desired number is entered and a call is initiated by lifting the handset. When the mobile terminal finds an available channel and issues a calling signal, the number entered is automatically transferred to the telephone station, which, after analyzing the number, sets up the call.

- **Handover to another base station while a call is in progress**

When, during a call in progress, a mobile subscriber leaves a base station's coverage area and enters the coverage area for another base station, the call is handed over.

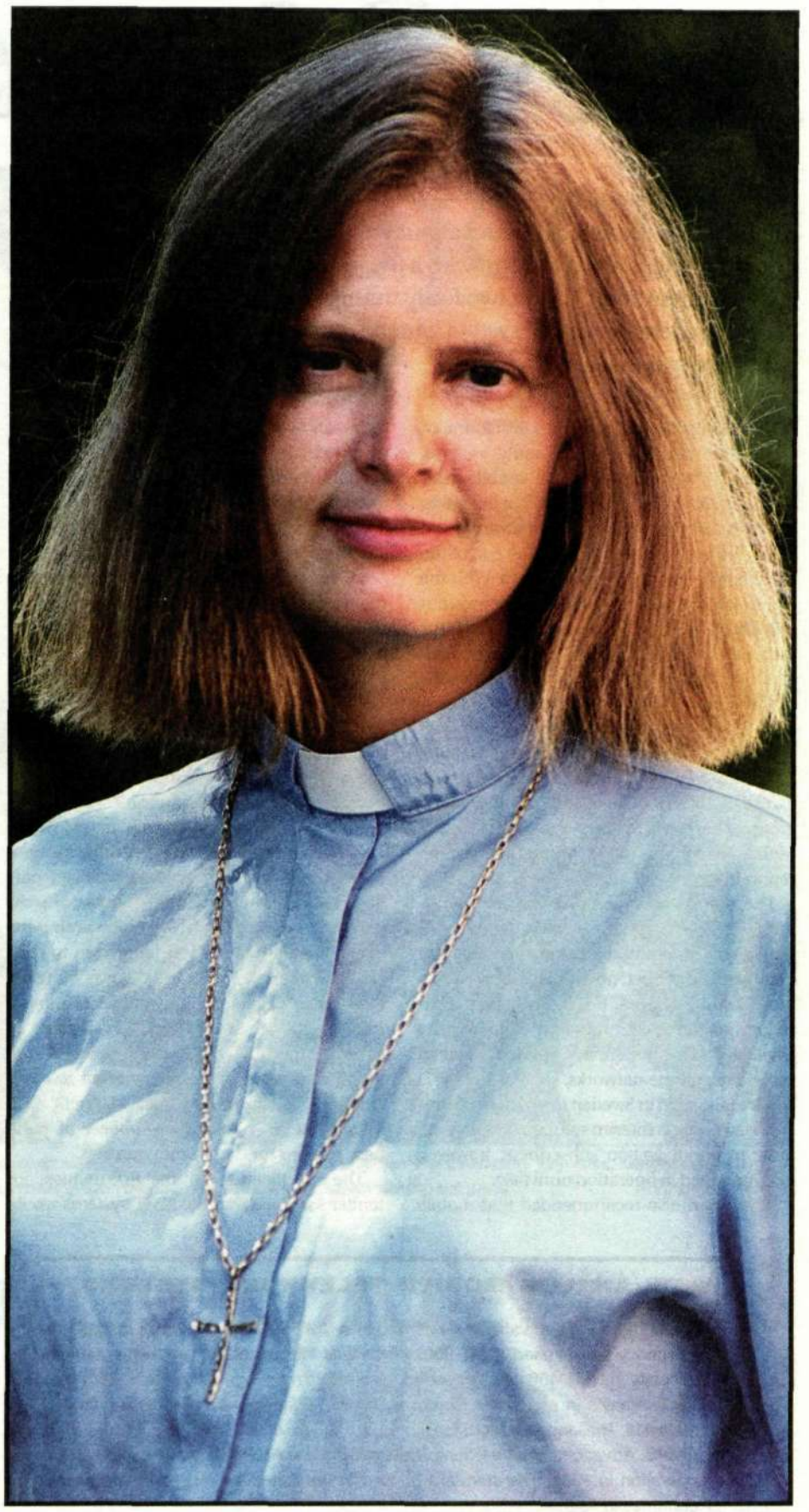
- **Handover to another telephone station**

Every mobile subscriber is registered in a certain telephone station, which is called the home MTX. When the subscriber roams to another traffic area belonging to another station, the calls are automatically transferred to the visited MTX.

At Work editor: Maria Paues, maria@pauesmedia.se, +46 8-665 73 99 CONTACT No. 6 2001

Someone who listens

The church pews stand empty. And yet, people still have a need to discuss life's great questions, especially during turbulent times. Louise Linder realized this and found a new way to work as a pastor – in the workplace. As a company pastor, she provides both executive coaching and employee support, as well as serving as a guardian of ethics during reorganizations.



When one's existence becomes unstable, it can be nice to have a third party to turn to. "One advantage that I have is that, with my confidentiality oath, I can talk with various parts of the organization," says workplace pastor Louise Linder. Photo: Lars Åström

➤ As the pace in the workplace continues to increase, the need to take a step back and ponder the big picture also increases. Questions such as why do we work, or what is important in a workplace for us to feel good. Ericsson employs company pastors to lend support to employees for these kinds of questions.

One of the company pastors is Louise Linder, who has been a pastor within the Church of Sweden for twelve years. Five years ago, she started up a pastor consultancy, where she works as a consultant for the business community.

"The churches are no longer full, so I decided to go out into the workplace where people spend most of their time. It is the task of the church, and my task as a pastor, to be available for people," says Louise Linder.

Personal development

Louise Linder has worked with Ericsson for several years. She has been associated with the personal development unit for some time – what was formerly known as Future Forum. She works both one-on-one, lending support to managers and employees, and through group discussions. She also conducts seminars on such issues as ethics.

Elisabeth Armgarth is head of the personal development unit. People who have been laid off or who want to change career paths come to see her.

"I hired Louise to be available for consultations for those who feel the need for such a service. Changing directions or jobs can bring up existential questions for many people. People begin wondering about the meaning of life. In such cases I do not, as an engineer and economist, have the necessary skills to discuss those issues," says Elisabeth Armgarth, who turns to Louise Linder herself to consult on issues she is thinking about.

"I can run different things by her, and she gives me advice, without betraying the confidentiality of anyone who has consulted her," says Elisabeth Armgarth.

I meet Louise Linder at her office in central Stockholm. From here, she is within walking distance to her other workplace, Engelbrekt Church.

Hard economic times have forced Ericsson to resort to cutbacks. Many employees are living with uncertainty about the future.

Louise Linder has worked under similar cutbacks before, and has served as a sounding board and support for both management groups and union organizations. She was involved when Infokom made personnel cutbacks in Sweden as part of the BN Change project, for example.

"I advised groups of union representatives and gave managerial support. One advantage is that I have taken an oath of confidentiality and am therefore able to talk with different parts of the organization. I do not report to anyone, which is considered a positive factor," says Louise Linder.

Respect is an important concept in this context, she says.

"Just because the manager thinks that it is uncomfortable to deal with cutbacks, that does not excuse poor behavior. A manager must hold layoff conversations with every employee; that is his or her obligation," says Louise Linder.

It is a tough role to play as an employer, to sit there with peoples' lives in one's hands, she says, even though you can see that the end result will be better. In such instances, she has been involved in discussions and provided guidance, both to individual managers and to groups.

"There is a benefit to be had by looking out for all employees when an organization is going through a tough process. Individual employees feel better, as does the entire organization; even those who remain, who might otherwise experience feelings of guilt."

Strict confidentiality oath

It is not, however, just during times of major reorganization that she visits workplaces. Other issues can include relationships, conflicts, problems with cooperating or cases of bullying. Or if someone feels as if he or she is not keeping up with developments.

Nor does it have to be limited to work-related problems. They can just as easily be problems in peoples' private lives, such as broken relationships or the death of a family member.

"Often, there is something that sets off a life crisis, that makes everything fall apart. It has been my experience that if there is someone available to listen, someone who is there and can share in the burden, that can do wonders."

The company profits from ensuring the well-being of all employees during a difficult process

The advantage of talking with a pastor, according to her, is that as pastors, they have taken an absolute oath of confidentiality – one that is even more strict than the one taken by people who work in health care.

Louise Linder's experience has been that it provides a little extra bit of security for those who turn to her.

"The oath of confidentiality plays an important role, not because the people I talk to have done something terrible, but because it feels more secure. People are afraid of having their case recorded in medical records and, for that reason, perhaps avoid turning to the company healthcare system with their worries. Even if the company healthcare system has a confidentiality oath.

"Nor do some people have any desire to talk with a psychologist or therapist. 'I'm not sick, just completely devastated,' they think."

There are, of course, those who are not believers and who could not conceive of turning to a pastor with their thoughts. And there are also those who adhere to religions other than Christianity. How do you deal with those people?

"They simply don't turn to me. It is incredibly important that there are many different resources available at a large company. Pastors are not the best at everything, but we can fulfill important needs."

Henrika Lavonius-Norén
freelance journalist

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Ericsson employees weather the storm

➤ What good is advanced technology when a hurricane is raging?

Recently, two Ericsson employees, Olivia Heter and Kimberly Knowles, together with three contract employees from the logistics firm M3, were forced to sit on the roof of the 3G truck in Richardson, Texas, in the US, to prevent the roof from blowing off.

Unaware of the situation, Per-Arne Sandström, Executive Vice President, North America, continued to show clients around the 3G demo. Richardson was the last stop for the 3G truck and its employees, who have been traveling around the US for a year, demonstrating to customers and employees what 3G technology can do.

Ericsson employees in Richardson, Texas, preventing the roof from blowing off.

Kids spend holiday at work

➤ It's not always easy to juggle schedules when children have time off from school and parents need to work.

At Ericsson in Woodbury, New York, they have come up with a solution called E-kids. Employees who have children between the ages of five and twelve can bring their children to work, where two teachers are available to take care of them.

Both the employees and the children appreciate the solution. Joseph Albanese, project manager at Ericsson in Woodbury, explains:

"I like taking my son Joseph to work, and he thinks it's fun to come with me. When he hasn't been here for a while, he starts asking when the next time will be."

Ulrika Nybäck
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Schoolchildren at Ericsson in Woodbury, New York. Photo: Colleen Greenan

Mobile phone rescues woman from washer

➤ Having a mobile phone on hand is sometimes a very good thing. No doubt the woman in Wales who was recently rescued from her rogue washing machine after placing a call on her phone, thought so.

Vibrations in the machine caused it to glide across the floor of the woman's kitchen, trapping her in a corner. Thankfully, her mobile phone was within arm's reach and she was able to call the fire brigade, which came to her assistance.

Fireman Keri Phillips said the woman was embarrassed but happy to be free.

The Daily Star newspaper first reported this somewhat unusual mobile phone story.

Rescuer in a pinch, or merely junk food?

Phones – a question of good taste

➤ A Kenyan businessman who misplaced his mobile phone decided to call his own number in an attempt to try and locate it.

Imagine his surprise when he heard ringing sounds coming from inside the stomach of the family dog.

"It was ringing inside him. Snoopy had swallowed it. I was shocked," said Kala Shan to the AFP news agency. In order to avoid the discomfort of a mobile phone in his stomach, Snoopy was forced to undergo surgery.

Afterwards, both dog and phone were found to be in good shape.

ERIC & SON

Oscar of interactive media

For the sixth year in a row, the Swedish Interactive Media Event (SIME) will be held in Stockholm, focusing on Internet usage. The SIME Awards contest names winners of the best applications developed in the Nordic region. The last day for submitting entries is April 23.

➤ For the first time, Ericsson is one of the main sponsors of the seminar, which was launched six years ago by the Internet company Spray.

Its purpose is to gather people from the industry each year to discuss the contents and visions surrounding the Internet, interactive TV and wireless applications.

A jury tests and evaluates solutions from a consumer perspective. Winners are named in each category.

"It's very good that we have the opportunity to profile ourselves in this context, and that our products are tested under realistic circumstances by independent testers," says Dag Gårdheim, market communications director at Ericsson in Sweden, who is in charge of sponsorship projects.

Last year, 320 contributions were received by the SIME Awards from various companies.

"Interest is high again this year," says Magnus Myrenberg of the Com-room consulting firm, which oversees SIME.

The competition covers six categories: Best Interactive TV production, Best Wireless Application, Best Internet Application, Best Customer Communication Solution, The People's Choice Award and the SIME Grand Price wich goes to the best overall application.

"So far, we've received traditional webpages, applications for games and entertainment and a few solutions for interactive TV", says Magnus Myrenberg.

"At this point, the SIME Awards are focused strictly on product development in the Nordic countries. In time, however, we would like to expand participation to make it an international competition," says Dag Gårdheim.

A jury will evaluate the contributions by criterias such as originality, design and strategic strength. Competition results will be announced during the event on June 6–7 at the Cirkus theater in Stockholm.

The seminars on the event will cover a number of topics, for example a debate on the importance of IT for a global movement such as the controversial and fast-growing Attac-movement.

Lena Widegren
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Applications can be submitted at:

www.sime.org

No. 6,
April 5,
2001

contact

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Room 811023,
SE-126 25 Stockholm

According to folklore, there is a monster living in Loch Ness in Scotland. The monster is known as Nessie and there are many tales about her. Many claim to have seen her and many expeditions have been launched to try to capture her, but in vain. The picture shows a model of Nessie that has been erected at Loch Ness. Photo: Lars Åström

UPCOMING

Voluntary organizations can once again start sending their entries for the ERICA Awards. The competition is based on the creation of new Internet and WAP services. Until June 5, entries can be sent to:

www.ericsson.com/erica

April 9: Publication of the second issue of Ericsson's customer magazine, On – The New World of communication. This issue contains articles about advertising via Mobile Internet and how new technology can be used in agriculture.

www.ericsson.com/on

April 20: Ericsson issues first quarter result.

NEW ASSIGNMENTS

Mark Maybell has been appointed President of Ericsson Venture Partners. Previously Mark Maybell worked for the international finacial services firm Merryl Lynch.

Antoine Nehme has peen appointed new head of Ericsson in Bosnia.

Mats H Olsson is new head of Ericsson in Malaysia.

Brian Barry has resigned as President and Chairman of Ericsson Canada Inc. He will be succeeded by **Mark Henderson.**

Sandeep Chennakeshu is appointed Chief Technology Officer and head of Research and Technology within Division Consumer Products.

Stefano Celsini, has been appointed President of Ericsson Iletisin in Turkey.

Stefan Johansson has been appointed President of Ericsson in Lebanon.

Nessie lures Dick to Scotland

For three weeks at the end of April and beginning of May, Dick Oskarsson from Ericsson's plant in Kumla will be taking a different type of holiday. He will be a diver involved in an expedition to try to capture Nessie, Scotland's legendary Loch Ness Monster.

Dick Oskarsson will take part in an expedition to Loch Ness in Scotland, where he will be diving in search of the monster, Nessie. Photo: Håkan Ekebacke

➤ Dick Oskarsson, consignee for incoming goods at the Kumla plant in central Sweden, has worked at Ericsson for four years. Diving has become one of his main leisure interests since his girlfriend persuaded him to try it out during a trip to Egypt a few years ago.

Since then he has dived in both Sweden and Mexico, in caverns, and accompanied by giant turtles.

"I read an article that GUST (Global Underwater Search Team) from Sweden were to investigate Loch Ness to locate and try to capture the monster. It sounded intriguing, so I contacted GUST. The result is that I'm now one of the four members of the expedition," Dick Oskarsson explains.

His job description in the expedition is diver, boatman and craftsman. He is not unfamiliar with the latter, having spent a lot of his spare time on handcrafts, including making key harps.

The equipment for the expedition includes sonars, ultrasound cameras that will produce an image of every sound that comes their way. They also produce three-dimensional images of the bottom of the loch.

If the expedition succeeds in locating a monster, an attempt will be made to capture it in a large, specially built fishnet. It will be Dick Oskarsson's task to lay out the net, which is seven meters long and five meters in diameter.

"Loch Ness is 190 meters deep, but the net must be placed in shallow water so that martens and seals can't get into it and drown," he explains.

"This was one of the conditions set by the Scottish Environmental Protection Agency for allowing the expedition to go ahead."

More than 90 representatives of various media will be on location to follow the diving operations.

"This will be one of the most exciting things I have been involved in," Dick Oskarsson concludes.

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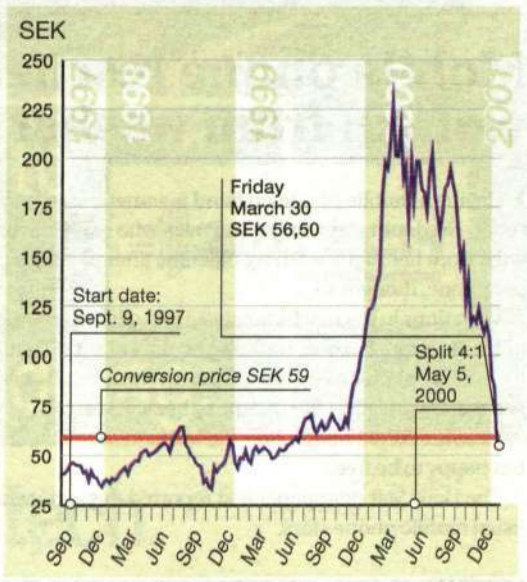
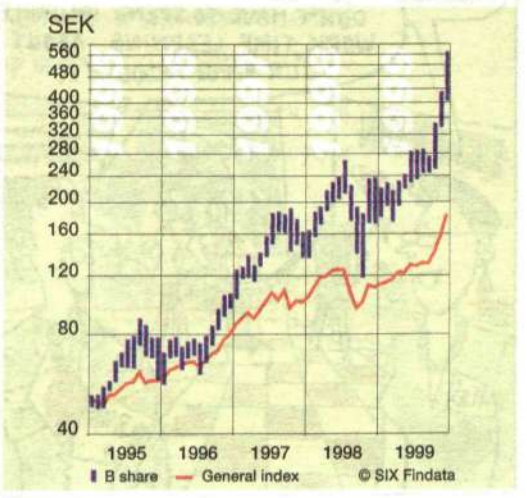
www.lochness.co.uk

THE ERICSSON B SHARE



An Extraordinary General Meeting of shareholders on September 9, 1997, approved a proposed convertible debenture program. The conversion period extends through May 30, 2003. For additional information, access the website: http://inside.ericsson.se/convertibles



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CONTACT NO. 6 2001 **UPDATED 23 MARCH**

ERICSSON AG, SWITZERLAND

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Have we aroused your interest? We look forward to receiving your written application.

Contact/Application: Ericsson AG, Human Resources, Sabine Graf, Lagerhausweg 10, 3018 Bern, Switzerland, sabine.graf@ericsson.com.

ERICSSON DEL PARAGUAY

Local Product Manager

● We are now looking for an experienced Product Manager who can support the KAM in driving the sales and marketing activities; provide product strategic information and system proposals to be offered to the assigned client.

You will provide knowledge in Ericsson solutions and products, including total responsibility for the offered solution and products, creation of technical marketing strategies, technical marketing support, dimensioning, feature content, interfaces and other questions that will be raised by our client.

You will also maintain the necessary interfaces towards the PUs and implementation projects in order to guarantee a smooth, high quality implementation of our solutions.

An important task is also keeping track of the future product releases and migration to the next generation systems.

The candidate should have a good technical knowledge of TDMA Cellular Systems with a successful track record. Knowledge of 3G Mobile Technology and Ericsson´s Datacom solutions is a merit. As for your personality, we expect you to have good communication and relation skills, drive for results, high level of personal initiative, good team working ability, dedication to customer success, ability to interpret customer requirements and market trends. Fluency in Spanish is essential.

Candidate should also have good English communication skills. To get more information or to express your interest in this posistion please contact us.

Contact: Johan Rosendahl, KAM, + 595 21 228820, + 595 981 558020, Asunción – Paraguay. **Application:** Gabriela Gunder, Human Resources, gabriela.gunder@epy.ericsson.se.

ERICSSON MAROC S.A.R.L.

JOB OPPORTUNITIES IN ERICSSON MOROCCO. In Morocco since 1984, Ericsson is today the leading supplier of telecom solutions, systems and equipment to both fixed and mobile operators.

We supplied the first mobile system to Maroc Telecom, and we are today expanding their GSM Systems for them in Southern Morocco. For Medi Telecom (Morocco's 2nd GSM Operator) we are the major supplier - responsible for designing and building a complete, nationwide GSM system.

Ericsson Maroc today employs some two hundred people and needs more. For further support of our teams, we are now recruiting

ND/NPI Engineers, ND/NPI Sub Unit

● Morocco is a fast growing market and we are supplying services to the 2 operators and are currently working with GSM and GPRS. For this, we are looking for very well experienced cell planners or NPI engineers for a long-term contract. you should possess qualifications to motivate and monitor the team members & good communication skills.

You should ensure the local competence build-up, which is very crucial for the success of EMO. The educational background should be at least a BA in technical fields. Good teamwork spirit and high managerial skills are your strongest points. Our office is located in Rabat.

Our major expectations on you will be: To fulfill your mission as stated above. To function as a mentor. To transfer the knowledge to the local employees. To be flexible and to adapt easily to changes as our company is growing and developing. And, as we are an international company with men and women from many parts of the world, it is important to have an open mind towards different cultures, and people in general.

Contact: Magnus Ericsson, ND/NPI Manager, +212 7 77 69 06, magnus.erikson@emo.ericsson.se or Bouchra Mounib, Human Resources Specialist, +212 7 77 69 06, bouchra.mounib@emo.ericsson.se. **Application:** Ericsson Maroc S.A.R.L., Attn: Kawtar Lahlou, 6 rue Todgha, Agdal-Rabat. Morocco, + 212 7 77 69 06, kawtar.lahlou@emo.ericsson.se.

ERICSSON DE PANAMA

Support Engineer (Expert) TDMA

● The key roles in this position will be, as part of the ELS support team, to provide Technical support on TDMA and GSM Mobile system elements / MSC, BSC, RBS, Jambala HLR, AP, OSS and Prepaid systems.

This includes System upgrades, AC-As, CSR/TR Investigations, outage investigations, software fault finding, writing emergency solutions, implementing new features and helping less experienced staff. You will also be part of the 24-hour emergency support team.

Requirements: University Degree or equivalent with a minimum 4 years working experience on AXE 10 application systems of which minimum 2 years on TDMA and/or GSM systems support. A good knowledge in UNIX is expected. Other requirements are good human skills, good English communication skills both spoken and written, Spanish (not essential but very useful) and the capability to transfer the knowledge to the local staff.

The initial contract period will be for 1 year and the position is available immediately.

Contact/Application: Don Chandrasiri, ELS Manager, +507 206 5152, Fax: +507 265 5194, don.chandrasiri@ericsson.com.

ERICSSON LTD, OPTICAL NETWORKS PRODUCT UNIT, HORSHAM, UK

Today, there are three places you want to be; Mobile, IP and Optics.....And Optical Networks are right in the centre of them all. Today's hottest technologies all converge on the Optical Networks that will enable next generation mobile, data, and broadband to the home services.

The optical network market is currently undergoing massive market growth as well as constant changes with new technologies and fierce competition. It is our goal and mission in Product Unit Optical Networks to provide Ericsson with competitive products and solutions for Ericsson mobile, fixed and datacomm applications. We do that by own developed products as well as by strategic partnerships.

We are looking for enthusiastic people to be part of our hardworking team, who wants to be at the forefront and drive the development in this changing and challenging world of Optical Networks. Our office in Horsham is located conveniently between London and Brighton, within excellent opportunities for recreation and family life in West Sussex.

Solution Engineer & Product Manager

● As Solutions Engineer, you will be working within a team of engineers specialising in Solutions for Transport Network Systems. The role requires close cooperation with many people from Marketing, Projects and Product Management as well as third party suppliers.

Customer contact is also part of the role, involvement being at a number of points prior to the tender stage, discussing technical solutions with customers and presenting the solution.

As Product Manager your main responsibilities will be to maintain and define the evolution of our competitive product portfolio, based on the input and feedback from customers and the market.

Thus you will need to have 'one leg' in development, defining product evolution roadmaps and main requirements, and the other leg supporting our business managers and solutions teams with promoting the products towards customers.

Some overseas travel will be required for these roles. If you feel that these roles are for you, and you have some experience in transmission solutions, optical technology, SDH and/or DWDM design or similar roles within Ericsson, don't hesitate to contact us!

Contact: Solutions Engineer contact: Esteban Chaparro, +44-(0)1403-277418, esteban.chaparro@etl.ericsson.se, Product Manager contact: Tor Hammarstrom, +44-(0)1403-277424, Tor.Hammarstrom@etl.ericsson.se. **Application:** quote ref.no 590: myfuture@etl.ericsson.se.

ERICSSON TAIWAN LTD.

Senior Manager, 3G Pricing & Commercial Management

● You will manage, co-ordinate and handle 3G pricing and commercial competence build-up for the whole of Ericsson Taiwan. You will work in a cross-functional environment, being overall responsible for co-ordination of 3G pricing and terms and conditions for all Ericsson's 3G bids in Taiwan.

We are looking for a candidate with previous experience in GSM, GPRS and WCDMA pricing of both infrastructure, services and applications.

The applicants shall also be familiar with TPCM and ERA's overall pricing tools and policies. The position is a specialist role.

Contact: Eva Fredriksson + 886 27461748, eva.fredriksson@ert.ericsson.se.

Business Manager Services

● To manage and coordinate the business development activities of the Services. towards major customer in order to achieve the Services Business sales and orders objectives.

Develop and manage the business relationship with the key decision makers in customer organisation relevant to the services business. Manage the relationship towards the internal Services Supply Units and towards Customer Services in the DGS and DIA organisations. Participate in the development of the Services business strategies and plans for the next 3 to 5 years. To provide value-added services solution toward operator customers.

To develop and execute the entire sales projects, including market planning. Transfer knowledge and competence to local staff.

University graduated or above, majors in Telecom., EE, CS or related fields. MBA is preferred. Min. 3-year sales experience in IT, Datacom, Telecom. or related field.

Contact: Ravi Kumar Makani-Chandra, Senior manager - Customer services +886 931 162521, ravi.kumar.makani-chandra@ert.ericsson.se.

TELEFONAKTIEBOLAGET LM ERICSSON TECHNICAL OFFICE U.A.E

The business for Ericsson in the UAE (TKU) is growing and we are at the moment looking for another Radio Network Design Engineer. It is a local employment in Dubai, the United Arab Emirates with a start date as soon as possible.

Radio Network Design Engineer

● Your work tasks will include: Network Design and Network performance improvement for an existing GSM 900 network.Site survey/ Site selectionInitial network Design/ Nominal Cell PlanFrequency planningNetwork optimizationNetwork Statistics monitoring.

The requirements we are looking for is: Minimum 2 years experience in the related field, preferably with Ericsson.Knowledge of the tools and methods required for Cell PlanningHands on experience of using TEMS tools (Tems Cell Planner, TEMS Drive test tools)

We assume your education and competence is: Graduate from a technical university or similar within the field of telecommunications, alternatively Bachelor of Science with a long experience from radio networks.Fluent in English.Ability to work in a multi-cultural environment.

Contact: Mr. Nitin Bansal, Radio Network Design Manager, nitin.bansal@tku.ericsson.se or Mr. Thomas Ahberg, Human Resources thomas.ahberg@tku.ericsson.se.

TELEFONAKTIEBOLAGET LM ERICSSON, SAUDI ARABIA BRANCH

Telefonaktiebolaget LM Ericsson has been involved in various projects in the Kingdom of Saudi Arabia since early 1970ies. The first digital switch as well as the first mobile system (NMT) was delivered to Saudi Arabia.

This exciting history is now repeated in the leading role as the main preferred partner to STC (Saudi Telecom Company). Ericsson is managing the supply, commissioning and implementation of state-of-the-art infrastructure for the GSM system expansion. This covers demanding deliveries of Switching, Hardware, sophisticated Software, Radio base stations, Minilink/microwave equipment and Training facilities and other highly complex and challenging projects through its Technical Office (TKS).

GSM Trainers in Saudi Arabia

● In our new training centre in Riyadh we are providing approx 40 000 studentdays per year. Our core staff need to be increased with two very strong and experienced trainers to meet our customers expanding need of primarily GSM but in some extent Data Com.training For this we need at least two new trainers: General GSM/Data Com.trainer with competence in 3G/IN area. GSM/OSS trainer preferably with OSS administration skills . Apply before: 2001-04-13. Form of employment: Full time.

Contact: Per-Arne Lundberg, per-arne.lundberg@tks.ericsson.se.

ERICSSON NIGERIA

We have interesting challenges for you in Nigeria. We are currently building two GSM networks, and need support engineers who will also assist in integration and acceptance tests.

The main responsibilities for the positions will be to investigate and trouble shoot activities in all areas at the highest technical level and to address customers' expectations/needs. In addition, you will be expected to provide technical competence for resolving complex problems in the radio networks, and provide technical advice and assistance to engineers and managers. Curiosity, interest and an ability to learn features/functions are important. You also need to participate periodically in the 24h emergency support.

BSS/SS Support Engineers CME20

● The main responsibilities for the BSS Support Engineer positions will be to investigate and trouble shoot activities in the BSS area at the highest technical level and to address customers' expectations/needs. The minimum of 4 years working experience on AXE 10 applications systems, of which at least 2 years experience should be on CME20/CMS40 systems, preferably verification and/or support/supply. A minimum of 2 years working experience with RBSs is a must.

Candidates with excellent trouble shooting skills and experience on other mobile application systems/product lines will also be considered for this position. Experience with loading correction packages and upgrades are a must, and good knowledge of ASA/PLEX is desired.

Candidates need to have excellent human, inter personal and multicultural skills. The candidate must have a good command of English, both spoken and written. The main responsibilities for the SS Support Engineer positions will be to investigate and trouble shoot activities in the SS area (MSC/VLR/HLR/AUC/

Comverse SMS & VMS/IN) at the highest technical level and to address customers' expectations/ needs. In addition, you will be expected to provide technical competence for resolving complex problems in the switching networks, and provide technical advice and assistance to engineers and managers. Curiosity, interest and an ability to learn features/functions are important. You also need to participate periodically in the 24h emergency support. Responsibilities will also include TR/CSR handling.

PPS Support Engineers CME20

● The main responsibilities for these positions will be to investigate and trouble shoot activities in the PPS area at the highest technical level and to address customers' expectations/ needs. (PPS will be critical to the success of Ericsson and these networks). In addition, you will be expected to provide technical competence for resolving complex problems in the Pre-Paid systems, and provide technical advice and assistance to engineers and managers. Curiosity, interest and an ability to learn features/functions are important. You also need to participate periodically in the 24h emergency support. Responsibilities will also include TR/CSR handling.

A minimum of 4 years working experience on AXE 10 Pre-Paid and/or IN platforms applications. Good experience of SEMA PPAS, IVR, SMS/SCE(SMAS), Comverse SMS & VMS, Unix and Sun systems, is required. Experience with loading correction packages and upgrades are a must. Candidates need to have excellent human, inter personal and multicultural skills. The candidate must have a good command of English, both spoken and written.

APZ/IO Support Engineers CME20

● The main responsibilities for this position will be to investigate and trouble shoot activities in the APZ/IOG area at the highest technical level and to address customers' expectations/ needs. An excellent competence with CEF is required, and the candidate must be able and willing to transfer his/her knowledge to colleagues. Experience with IOG20 is required, with a good ability to integrate it to X25/TCP/IP and other data networks. You also need to participate periodically in the 24h emergency support. Responsibilities will also include TR/CSR handling.

A minimum of 4 years working experience on AXE 10 applications systems is required. Experience with loading correction packages and upgrades are a must, and good knowledge of ASA/PLEX is desired. Candidates need to have excellent human, inter personal and multicultural skills. The candidate must have a good command of English, both spoken and written.

Data Transcript Engineer CME20

● The data transcript engineer is responsible for the creation and adaptation of the exchange dependent data (MML) files for AXE systems. They will be responsible for creating procedural documentation and ensuring they are adhered to. They will continuously strive to improve and develop new and existing process. They will actively seek to highlight and develop improvements in data transcript tools. The engineers will be responsible for working as part of a team and with its key customers.

At least three years experience of Data transcript in AXE 10 environment preferably CME 20 or other proven testing/switching/support experience. Computer literate. Desirable; Higher technical qualification in telecom, radio or software related subject. Working knowledge of Ericsson procedures and experience in data transcript tools development.

Contact: Karl Toriola, Support Manager, Karl.Toriola@lmn.ericsson.se or Göte Hedblom, Director, Administration/Human Resources and IT, Gote.hedblom@era.ericsson.se, LM Ericsson (Nigeria) Ltd. +234-1-2690249,-50,-51.

ERICSSON RESEARCH CANADA (LMC)

The Montreal based PU-TDMA is looking for SALES SUPPORT MANAGERS. LMC's trade mark: drive the next generation of the mobile Internet, be bold, thrive on innovation, learn, celebrate your successes...

Working in Montreal is where the American culture meets with the Europeen one, where you can enjoy the beauty of four seasons, live near downtown but close to the country side. You can enjoy this life style while sharing and growing your competencies as a Sales Support Manager.

Sales Support Managers

● In this role you will have to provide KAM teams for Ericsson's TDMA Customers in the world with sales support for a specific part of the TDMA product offering, through; presentations to Customer and KAM team to show value, benefits, functionality with the offering. Meetings with the Customer's technical specialist to convince them about the technical viability and benefits of the offering. Support the KAM team through the sales-cycle. Provide response to Request for Information & Proposals. Continuously stay updated with the Customer prospects and leads in the market and together with PU Key Account Liaisons & KAMs agree on appropriate customers, strategy and timing for marketing and sales efforts. You should also bring back feedback on the offering from the market to the Product Unit.

You must be fluent in English, speaking and writing (ability to speak Spanish, French, Portuguese is valuable), have an University degree in either Engineering or Commerce (Master is an asset). At least two years of technical telecommunications experience in the fields of O&M, RF, Switching Systems or Packed Data is needed. Additional experience from sales of high-tech products and/or services is beneficial. You are self motivated and you have good social and communication skills. You can travel at least 25% of the time.

Contact: peter.patomella@lmc.ericsson.se. **Application:** isabelle.tardif@lmc.ericsson.se

ERICSSON RESEARCH CANADA

An avant-garde group, the Service Creation Point/Wireless Intelligent Network Services (SCP/WIN) function test group is responsible for ensuring the integrity and quality of the Java-based SCP and the WIN service application software in the Jambala Telorb environment.

It is progressive because we have successfully automated a significant part of the testing, thus eliminating the tedious parts of performing regression testing and writing test records.

The testing occurs at both the traffic level and the O&M GUI provisioning level. The former is performed via automation through proprietary test programs as well as through 3rd party products in a simulated environment. Our efforts will now start focusing on automating the GUI part in a way to be able to perform integration testing using as much of the automation as possible. After testing these components separately, they are integrated and tested on real hardware with other software before handing it over for system testing.

Integration & Certification Engineer

● Responsibilities: Designing and executing function test cases. Integrating software components together on the platform. Enhancing the proprietary test tool with new capabilities. Troubleshooting the application software. Automating as much as possible. Evaluating and incorporating 3rd party products in the testing process.

The following skills are required or will be developed to perform this job: Java development. Jambala/Telorb experience. Familiar with some of the Rational tools (ClearCase, ROSE, ClearDDTS, TestSuite). IS-41 messages. Troubleshooting. Test Architecture & Design. CORBA scripting. Skills developed in this area will provide some of the skills required to move into other competence areas with greater ease: System Design, Design, System Test, FOA, Maintenance. Come join us as we lead the rest of the organisation to the future of testing. Besides, where else can you get paid to break things!

An avant-garde group, the Jambala Application Platform system design group is responsible for ensuring the integrity and quality of the Jambala platform architecture, and for conducting research activities that will enhance platform capabilities for the future.

System Designer

● The System Designer is a key contributor and focal point of open platform technologies GLOBALLY that will enable Ericsson to be the industry leader for the next generation of infocom/telecom networks. In co-operation with global design units, core units, customers, and research organisations, the system designer conducts applied research activities (prestudies, prototypes, technical analysis) and provides direction related to the present and next generation wireless networks, open systems, methods and tools. Requirements gathering, platform direction, configuration management, technical investigations, prototyping, presentations, standardisation, characteristics and performance will be key ingredients in maintaining close links to projects, development activities, design organisations, partners and customers in the systems designer everyday activities.

Requirements: At least a Bachelor's Degree, preferably in Engineering, Computer Science or a similar field. At least 5-7 years of experience working in the telecom/computer industry. Business-oriented mindset. Strong communication and presentations skills. Ability to work under stress.

It would be an asset if the candidate also had some of the following qualifications: Distributed applications experience for large-scale systems. Load balancing and load sharing design experience. Datacom Technologies. C++/Java background. UML terminology and process. Internet/Intranet (Web Technology). Large scale Provisioning systems. OO design technology experience. Database Technology. Packet Switching. Transport networks knowledge. Modelling Simulation. Ability to initiate/lead system architectures, re-engineering strategies and software reuse. Able to specify what characteristics are to be verified for optimal use of the system. Self-driven, confident and can lead a team of highly specialised engineers and designers. Telecom background.

Contact: Charles Gelibet, CharlesGelibet@-lmc.ericsson.se, +1 514 345-7865

OAM Designer

● All development of new and existing applications such as HLRs, Acs, SCP services, etc., will be hosted on the Jambala Platform. The platform consists of 3 major components: the traffic handling is performed by a set of scalable distributed Intel-processors operating with the TelORB operating system; the OAM functionality is performed by a set of Sparc processors connected to the traffic processors; and the SS-7 stack is a Sparc-hosted gateway that allows IS-41 or GSM messages to be processed.

You will be responsible for analysing requirements, designing, implementing, and Function-testing functionality that is required in the Operations, Administration, and Maintenance portion of the Jambala platform. The OAM mandate is to provide the interface and infrastructure for the customer care system. The OAM development involves both TelORB and UNIX environments. The OAM is very much developed with 3rd party products as integral parts of the total OAM package.

Responsibilities: Analyse assigned requirements for impact and implementation. Design the required functionality (use cases, object model, data model). Code the design using the Java Sun JDK environment. Function-test the implementation. Support system testers for the designed functionality. Provide occasional on-call support (as 3rd line support). Work with the version control tool (Clearcase) to ensure check-in/check-out of implementations. Support technical meetings with other departments and customers. Troubleshooting support. Documentation.

Requirements: Minimum degree in Electrical Engineering, Computer Engineering, Telecommunication Engineering or Computer Science. Telecommunications industry experience. Java in an object-oriented approach. Assets: TCP/IP development. CORBA. Object database design. Distributed processing. Unix operating system development. Rational Rose, Clearcase. Enterprise networking. Exposure as an operator or OAM user.

Contact: Anthony Tighe-Lafleur, Anthony.Tighe-Lafleur@lmc.ericsson.se, +1 514 345 7900 x7323.

Product Line Security Engineer

● Responsibilities: Assist in the development and maintenance of internal security policies, standards and procedures. Assist in the development of a standard host-based security model for the JAMBALA platform. Identify all applicable security vulnerabilities and track security advisories. Test and install patches and fixes that address known security vulnerabilities in vendor software. Harden and minimise services provided by JAMBALA systems. Develop configuration management and security baseline configurations focusing on security configuration. Evaluate, implement, configure and customise third-party security tools. Conduct penetration testing, generating reports and metrics. Develop intrusion handling and disaster recovery strategies. Disseminate vulnerability information to various groups. Participate in the change-management process. Conduct system audits using security-auditing tools. Co-ordinate and scope external audits. Communicate with other JAMBALA and Ericsson groups to establish standard configurations.

Requirements: B.Sc. in Software Engineering with at least three years of experience in Open Systems administration (or equivalent). Knowledge of UNIX operation, administration, troubleshooting, and performance monitoring. Knowledge of UNIX scripting (i.e.: sh, csh, sed, awk, perl). Knowledge of 3PP (i.e.: web servers, DBMS) installation, integration, configuration. Knowledge of TCP/IP network management, naming services, configuration, troubleshooting, and session monitoring. Knowledge of Security software, standards, protocols, and hardening strategies (i.e.: SSH, SSL, Tripwire, TCP Wrapper, tcpdump, TITAN, snort, RADIUS, PGP, IPSec).

Experience with developing standard platform configurations. Experience with Solaris, Linux and TelORB operating systems. Experience with user-level logging, kernel-level auditing, intrusion detection, vulnerability testing, and forensics. Experience with SS7 networking and with telephony standards (i.e.: GSM/MAP, TDMA/ANSI-41). Experience with embedded/private networks, web servers, Object-Oriented programming, CORBA, cryptography. Experience with SNMP and commercial network management systems. Experience with firewalls, routers, proxies, and DMZ's would be considered an asset. Strong problem-solving and team-working skills. Ability to travel.

Contact: Algis Kibirkstis, Algis.Kibirkstis@lmc.ericsson.se, +1 514 345-7900 x5657.

ERICSSON BELGIUM, REGIONAL OFFICE WESTERN EUROPE

The function is responsible for: delivering defined Solution & Pre-Sales services towards our business partners and their customers where applicable, enabling sales processes to conclude by solution generation and presentation, drive adoption of new technology, by incorporating these technologies into solutions, wherever possible initiate and generate new sales leads and opportunities.

Solution Design & Pre-Sales Specialist (m/f)

● Job package: On request of the channel- and/or Sales Manager: answer RFQ's and RFI's, including technical and functional description, give presentations about proven and possible solutions, visit channels and customers of the channels, via the intranet: access to a "solution-library', where information about offered solutions can be found.

Candidate profile: Preferably a University degree in Engineering complemented by Business Marketing studies, or equivalent min. 3 years of studies. Multi-language capability is a big plus, French, Spanish and Dutch. English is a written and spoken must. Behave/People science and/or advanced consulting skills. Solid Ericsson product and solution knowledge or portions there off: Infrastructure (voice and/or data), Mobile Internet and Business Applications. Established technology background as a technical specialist, with strong component of communication orientations, i.e. access, transport, general IT application environment. Proven advanced Project Management skills with technology product content are preferred. Proven advanced Consulting skills both in fulfilment and sales positions are preferred.

We provide: An international but informal environment where communication always has a slight edge over technology. Where quality is second nature and initiative and personal development are essential. A challenging, future oriented and expansive job. Training and an interesting package of benefits.

Contact/Application: Nicolas.Georges@ebr.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

Ericsson's Product Unit Wideband Radio Networks is looking for Configuration Managers (CM) for our development and maintenance projects within the area of Radio Base Stations (RBS).

Configuration Managers

Ref.no FR/H 1890

● Job description: You will be working in projects where you have an important role w.r.t. status accounting and steering CM work according to our processes and methods. You will a.o. be working with document structuring, processes, version control, CCB handling and co-ordination of CM work with CM's in other development units both in Sweden and abroad. Our work also includes tool support and release of the RBS in PRIM.

Profile: We are looking for persons with a university degree or similar education, preferably with experience in the CM area. Being able to speak and write in English is a requirement. You must be goal oriented, analytical and feel at home in a flexible organization. Familiarity with both Unix and PC environment is a must. Knowledge of ClearCase and ClearDDTS or ClearQuest is regarded as beneficial.

Contact: Peter van der Linden, +46 8 585 32610, peter.vanderlinden@era.ericsson.se.

Technical Customer Support

Ref.no FR/H1671

● We are responsible for the establishment of the 3:rd line support at PU-WRN and the 2:nd line support at ASOs and SAFSCs. The work is done in close co-operation with the different design departments and the Market Units. You will be defining the processes and responsibilities for the different parts of the global support organisation.

Help Desk Administration

Ref.no FR/H1672

● We are acting as the PU-WRN interface between the Market Units and our design departments. Currently we are setting up the flow for Customer Service Requests (CSR) and we are installing the GS3 System. You will be handling the CSRs we receive, send them to the right design department, keep track of progress and assemble statistics.

Trouble Report Administration

Ref.no FR/H1673

● We are responsible for the PU-WRN Modification Handling Office (MHO). We will receive Trouble Reports (TR) in the MHS system from the Market Units. Within the PU we use ClearDDTS as modification handling system.You will be handling the TRs we receive, send them to the right design department, keep track of progress and assemble statistics.

Software Supply

Ref.no FR/H1675

● We will be delivering the software via FTP servers to production and market after it has been tested and released by design. You will be assembling software by using ClearCase, SQL commands, FTP tools and IP tools.

Configuration Handling

Ref.no FR/H1676

● We are participating in setting up the flow for how a WCDMA system should be configured. Our main focus is on how the configuration is done from a Market Unit perspective. The work includes the complete flow from HW-near parameter definitions to Radio Network parameters. It is done in co-operation with Design, Implementation and Market Units. You will work with defining the processes, develop tools and do the SW Supply part of the configuration for each release.

Software Upgrade

Ref.no FR/H1677

● We are participating in the definition of how the upgrade of a WCDMA system should be done in a live network. Design is responsible for the upgrade on the first market and we are focusing on the rollout on the other markets. You will define the working procedures, test and participate in upgrades.

Contact: Kristina Adebo, +46 8 757 28 46, kristina.adebo@era.ericsson.se, Peter Hagren, +46 8 757 05 69, peter.hagren@era.ericsson.se, Peter von Bahr, +46 8 757 36 36, peter.von.bahr@era.ericsson.se

Product Unit Wideband Radio Networks develops the systems of the future for broadband mobile communication based on WCDMA and ATM technology and as part of the project our unit is responsible for integration and verification of the radio base station (RBS).

Our section is responsible for TCM (Test Configuration Management) which entails total responsibility for planning, preparing, building up and maintaining the test environment for RBS Integration and Verification (I&V). This involves constant monitoring and chasing up of daily deliveries of both HW and SW in various revisions from a series of design centres all around the world.

Test Configuration Manager RBS I&V

Ref.no FR/H1844

● In the role of Test Configuration Manager you will work closely with e.g. the various design centres, object managers for integration and function verification, and systems managers, as well as the overall Project Manager for RBS. Applicants should have a technical background and experience of managerial positions. You will be communicative and have the ability to co-operate. We work in an environment subject to constant changes, which is why flexibility and a feeling for orderliness are extremely important properties. You must be proficient in spoken and written English.

Contact: Anna Sterner, +46 8 757 31 09, anna.sterner@era.ericsson.se.

You are interested in learning how a WCDMA system works? You liketo specify how to verify our system? You like to develop scripts to automatically run the test cases? You regard it as a challenge to perform complex trouble shooting? Then you should join our I&V team! You will work with the integration of our ASIC and DSP design and the verification of our signal processing functions.

Integration and Verification Engineers

Ref.no FR/H1809

● We are looking for experienced engineers as well as for new examined engineers. Commonfor all three tasks is that your should have good English skills dueto our various international contacts. You should be a team worker aswell as a driving person who likes to take initiatives. You are aresponsible and honest persons who respects his / her colleagues.

Contact: KI/ERA/FRU/UGC, Kurt Barckhan, +46 8 764 19 54, kurt.barckhan@era.ericsson.se.

Tender Manager

Ref.no FR/H1747

● As a Tender Manager you will manage and co-ordinate WCDMA tenders at PU WRN. You will be the driving force to secure that we deliver competitive and high quality tenders. You will have many interfaces within our own organisation as well as within the UMTS M&S team and other PUs. Later on you will support Market Units in contract negotiations.

As a member of the Product Marketing team you will also perform at conferences, customer workshops and exhibitions. The position requires that you have experience from tender work, preferably within the GSM/TDMA area. You should be a team-oriented person with good leadership qualities. You have good communication and presentation skills and you are able to combine commercial and technical knowledge with a good business understanding. We believe that you hold a university degree in business administration and/or engineering.

Contact: Staffan Kvillerud, +46 8 585 336 01, *staffan.kvillerud@era.ericsson.se.*

Integration- and Verification Engineer, WCDMA-Base band

Ref.no FR/H1810

● We are looking for you who wants to work with integration and verification of advanced digital signal processing functions located in one of the most advanced subsystem in the WCDMA Radio Base Station. The implementation is made up by DSP:s, ASIC:s and FPGA:s. You should have a university degree, preferable a M.Sc., with experience from previous integration and verification work. Experience from other mobile systems is a merit.

Moreover you should be an analytic team player able to work focused under high pressure. You will be working with writing test specifications, performing test, develop new test equipment and troubleshooting. Part of the design is done in design centres around Europe. You will therefore have tight cooperation with them.

Do you want to develop 3rd generation digital signal processing algorithms for the base station? Interested in, for example, RAKE receiver, Viterbi/Turbo decoding and fast power control? Then we can offer the job you are seeking. You will be working in a team responsible for development of the base band algorithms in the Radio Base Station. The algorithms must meets the tuff sensitivity requirements the WCDMA standard sets and at the same time be implentable in an effective way.

Algorithm Development, WCDMA Baseband

Ref.no FR/H1811

● You should have a M. Sc. degree or similar and have experience from algorithms development, preferable from other mobile systems. You should be analytic and ready to take responsibility and initiative for your own work. It's a merit if you have some knowledge of CDMA and also have some experience from digital signal processing implementation.

We are using tools like COSSAP, MATLAB and ClearCase. The work is carried out in close cooperation with our design centers around Europe.

Contact: Mats Tulldahl, +46 8 404 37 81, mats.tulldahl@ericsson.com.

We now have a vacant CM position for the subproject that is developingparts of the traffic functions in the RNC node. Our subproject isdeveloping new systems and products for Ericsson's broadband mobiletelephony systems, third generation UMTS.

Configuration Manager, RNC-WCDMA

Ref.no FR/H1928

● Main tasks: Co-ordinateand steer CM activities within the project. Support and advise theproject leader in CM matters. Develop and maintain CM plan for theprojects. Release the products. Improve the used CM procedures.

You will work with document structuring, base line control, CCB handlingand co-ordination of CM work with CMs in other development units bothin Sweden and abroad. As our CM person you have to be independent, keep good order, be a positive person. Good co-operating and communicating ability is highly valued. It is an advantage if you have experience of product handling.

Contact: KI/ERA/FRY/BHC, Nariman Rahimi, +46 8 757 32 30, nariman.rahimi@era.ericsson.se.

Design Tool Support WCDMA

Ref.no FR/H1946

● We are searching for an applicant willing to work with the installation of HW design tools in our UNIX and ClearCase environment, which is integrated across 4 countries.

Besides UNIX and ClearCase knowledge, the preferred candidate will also have good English communication.

Contact: KI/ERA/FRU/LKC, Paul Wied, +46 8 40 47 988, paul.weid@era.ericsson.se.

Electronic Design WCDMA

Ref.no FR/H1943

● We are looking for a digital HW-designer with a couple of year's experience of advanced digital boards. You will work in a team that designs boards with (for example) DSP:s, FPGA:s ASIC:s and up to 14-layer-PCB:s.

Contact: KI/ERA/FRU/LDC, Richard Wiedenkeller, +46 8 40 47569, richard.wiedenkeller@-era.ericsson.se.

System Egineer WCDMA

Ref.no FR/H1924

● We are searching for an applicant with extensive experience of systematisation of HW and low level SW architectures in radio bases. The preferred applicant will have a M.Sc. degree. We work in projects, often international.

SW Dsigner WCDMA

Ref.no FR/H1926

● We are searching for an applicant with experience in SW design. Experience in low level SW design on Motorola PPC and/or Ti:s DSP:s is preferred. We use OSE RTOS and develop in C, C++ (OTD/Rose RT) and assembler for the WCDMA radio bases. The preferred applicant should have a M.Sc. degree. We work in projects, often international.

Integration & Verification Engineer WCDMA

Ref.no FR/H1927

● We are searching for an applicant willing to work in integration and verification of HW and low level SW in radio bases. The preferred applicant should have proven experience in the integration and verification field. We work in projects, often international.

Object Leader – WCDMA

Ref. no: FR/H1925

● We are searching for an applicant with experience in project/object management of SW and/or HW design teams. The preferred applicant will have high drive and be able to cope with many simultaneous tasks. Experience in SW design or HW design is preferred. The preferred applicant should have a M.Sc. degree. The applicant will participate and work in large projects, often international. Good communication skills in Swedish and English are a must.

Contact: KI/ERA/FRU/LTC, Daniel Bardvall, +46 8 585 31718, Daniel.Bardvall@era.ericsson.se.

HW-Reliability Engineer WCDMA

Ref.no FR/H1944

● We are searching for an applicant willing to work with HW-reliability, in order to make sure already at design that the boards will work in the field. You should have experience within areas like FMEA, stress testing, reliability, producability and yield.

Contact: Richard Wiedenkeller, +46 8 40 47569, richard.wiedenkeller@era.ericsson.se.

Recently Ericsson started to receive orders from major telecommunication operators for 3rd generation mobile systems based on WCDMA. We are now looking for a project assistant to some of our projects. This position means that you will support one or more Project Managers with tasks, such as updating project library and web-site, assist with resource planning and forecasts, participate and take minutes from project meetings etc.

Project Assistant Radio Base Integration & Verification

Ref.no FR/H1923

● We are looking for an organised person with great sense of responsibility. Being in such a central position within our development organisation, there is every chance to grow within the job and the organisation for the right person. Communication skills in English are essential.

Contact: Sören Norberg, +46 8 40 42653, Soren.norberg@era.ericsson.se.

Join us and you can tell your friends that you played an important part in the development of the 3G radio network infrastructure as a Section Manager at the Radio Network Handling product development department.

Section Manager RNC SW Design

Ref.no FR/H1916

● You will be responsible for the development of products central in the radio network handling in the WCDMA radio network. You will be lucky to manage a section with competent co-workers using the latest software development technology. You shall have the will and ability to initiate tasks and obtains results, communicate with others, see openings and connections and have good people management skills. You will get a kick out of managing the development of your section's operation and get the gratitude from your co-workers when you manage their competence development. You shall have worked as manager, project manager and /or team leader. Our office is in Kista and we are a part of the Product Unit Wideband Radio Networks.

Contact: KI/ERA/FRY/BC, Magnus Eklöf, +46-8-404 4136. Magnus.Eklof@era.ericsson.se.

Network Operability of 3G Networks

Ref.no FR/H 1921

● We are now looking for you who want to work with design of a Radio Access Network from an operator and overall perspective. Hence, you will be acting to achieve that the ongoing and future design of the Radio Access Network leads to functionality and maximal network operability.

The main focus is a user-perspective for all parts of the network, in order to form an well-integrated system that all user categories will perceive as optimal.

You can have a background from a number of different areas but you should possess experience, knowledge and skills from the following areas: System design / O&M design. Installation, network operation and maintenance of mobile systems. Good interpersonal, communication, influence and leadership skills.

Contact: KI/ERA/FRT/UC, Ulf Lönn, +46 8 585 31120, ulf.lonn@era.ericsson.se.

Ericsson's Product Unit Wideband Radio Networks is looking for (Source) System Handlers (SH) for our development and maintenance projects within the area of Radio Base Stations (RBS).

System Handler

Ref.no FR/H 1891

● Job description: You will be working in projects where you have an important role working with product structures, product packages and sales objects. You will be actively driving discussions how to structure our products with other development groups both in Sweden and abroad. This work is done on the early stages of the projects. Together with Product Management you are setting up our product packages and sales objects. You will have contacts in both TTM and TTC e.g. where information in SAP is concerned.

Profile: We are looking for persons with a university degree or similar education. Several years of experience with product structuring are required. You are fluent in English, both spoken and written. You must be goal oriented, analytical and feel at home in a flexible organization. Knowledge of SAP is not required but regarded as beneficial.

Contact: Peter van der Linden, +46 8 585 32610, peter.vanderlinden@era.ericsson.se.

Our PU-WRN product unit develops new systems and products for Ericsson's future broadband cellular telephony systems, based on WCDMA. We use the latest, most efficient methods and tools in our design environment.

We are expanding rapidly and our Design Support division for Methods and Tools (M&T) needs extra additions soon as possible. We are looking for someone to assist in the installation, operation and some user support for the hardware design tools we use in our radio base station (RBS) development unit.

Application Support for HW Tools

Ref.no FR/H1763

● Tasks include supporting our EDA managers with installation and operation of our UNIX-based tools for hardware design.Previous experience with computer networks, UNIX and Shellscripting knowledge is required. Some experience of PERL, CGI-scripting, TCL, and Clearcase is desirable. The job requires daily contact with other design centers at Ericsson and with several tool suppliers, so good English skills are a must. Stress tolerance, independence and initiative are also critical.

Contact: KI/ERA/FRU/LKC, Paul Wied, +46 8 404 79 88, paul.wied@era.ericsson.se.

CORBA Design Java

Ref.no FR/H1852

● Our section is designing 3 subsystems within an operating support node in Ericsson's WCDMA radio network. We use Corba for internal distribution and as an external interface, which is why we are looking for somebody with solid Corba skills. Knowledge of Java, operating support systems and mobile telephony is also an advantage.

Java Expert

Ref.no FR/H1857

● Can you be our mentor and "heavyweight designer" in Java? We are a section comprising 25 Java designers, and we need an experienced Java expert to lean on, as a sounding board, co-designer and inspector.

If you have several years' experience of Java design and are interested in taking up an informal managerial role in a design section, tasked with developing an operating support node for Ericsson's WCDMA radio network, you should definitely apply for this job!

OO & Java Methodology and Tools

Ref.no FR/H1858

● Are you interested in object-oriented methodology and tools? We are looking for somebody to work with our development process and tools in order to develop and test Java software.

We use Rational Rose, Soda, JUnit and Framemaker, connected to Ericsson's traditional product structure.

You will probably have several years' experience of object-oriented design work in the field of software. In addition, experience of Ericsson's traditional development processes, Java and Corba, is an advantage.

Good proficiency in English is a requirement, as we often work in this language.

Contact: Elisabeth Axbrink, +46 8 508 794 66, Elisabeth.axbrink@era.ericsson.se, Majid Zolfaghari, +46 8 764 1021, Majid.zolfaghari@era.ericsson.se.

GUI Design in Java

Ref.no FR/H1863

● As a co-worker in the WCDMA Radio Network Management department, you will be involved in developing Java software for a new operating support node, whose task is to control and monitor newly developed WCDMA base stations and radio network control nodes.

You will be working with a distributed system based on Corba, object-orientation, object-oriented databases, web technology and commercial computer platforms such as NT and Solaris.

We have some 50 employees working in Ireland and in Kista. In Kista we conduct system management, design and testing, while in Ireland we conduct system management and design. We co-operate closely, and so occasional trips to Ireland may be necessary.

Naturally, much of our work is conducted in English. Skill development is a natural part of our work. We train ourselves by attending selected courses, supplemented with mentors and by participating in all phases of the development work, including investigation, design and testing.

We are looking for somebody to participate in the design of the operating support system's user interface. The job involves both investigation and design work.

You will probably have a few years' experience of developing user interfaces, and you will possess an understanding of usability, dominant style guides, on-line documentation, web technology and standards for graphic user interfaces. Experience of operating support systems is obviously an advantage.

Software Design in Java

Ref.no FR/H1864

● You will have a few years' experience of programming in an object-oriented programming language, ideally Java. You will be interested in object-oriented analysis and design with Rational Rose and with Corba as the distribution mechanism.

You will ideally have experience of radio networks, operating support systems and graphic user interfaces.

Tools Manager and Testing Environment Manager - Java Design with Rose, JBuilder, ClearCase

Ref.no FR/H1865

● This job is based on keeping our design and testing environments working, as well as handling all external contacts in order to achieve this.

We have UNIX and NT both as a development environment and a target environment.

The work requires experience of design work, test work, UNIX and NT. You may have worked within an IS/IT support organisation and want to take the opportunity to take a step closer todesign work.

All of the above jobs will be based in Kista.

Contact: Majid Zolfaghari, +46 08-764 10 21, majid.zolfaghari@era.ericsson.se. **Applications** to all the above, include ref no: Ericsson Radio Systems AB, KI/ERA/FR/HRA, Anna Silenstam, 164 80 STOCKHOLM, ansokan.PU-WRN@era.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

Join us in the ongoing race towards 3G – Mobile internet! We at product unit Wide Band Radio Networks are currently up at full speed in developing the radio access network products for Ericsson's first commercial UMTS system.

The system is based on WCDMA radio technology and ATM transmission. We are receiving a lot of attention from customers worldwide.

We are looking for an experienced person to join our team of Strategic Product Managers for Radio Base Stations. We have a full range of Radio Base Station products including macro, main-remote, micro and outdoor versions.

Strategic Product Management - WCDMA Radio Base Stations

Ref.no FR/H1797

● As a Strategic Product Manager you will be responsible for creating a competitive product portfolio. The work includes defining product strategies and product requirements, profitability analysis, writing product information, product presentations and technical sales support for our product marketing unit and customers.

We assume that you are a person who is open-minded, independent, creative with good analytical skills and commercial orientation combined with the ability to understand technical capabilities and limitations. You should have a university degree and some years of experience with radio base stations, preferably within systems or product management.

We are looking for an experienced person to join our team of Strategic Product Managers for Site Solutions. We have a full range of Site Solutions products including antenna, transmission, and power systems.

Strategic Product Management - WCDMA Site Solutions

Ref.no FR/H1798

● As a Strategic Product Manager you will be responsible for creating a competitive product. The work includes defining product strategies and product requirements, profitability analysis, writing product information, product presentations and technical sales support for our product marketing unit and customers.

We assume that you are a person who is open-minded, independent, creative with good analytical skills and commercial orientation combined with the ability to understand technical capabilities and limitations. You should have a university degree and some years of experience with site solutions.

Product Package Handling - Wide Band Radio Networks

Ref.no FR/H1799

● We are looking for an experienced person to help us with our Product Handling. This means that you should be interested in supporting our Product Managers in the areas of product packaging, product catalogue (PCAT), sales- and product structures. We assume that you have some year experience in these areas. We are especially interested if you have previously worked with PCAT.

Contact: Håkan Engdahl, +46 8 757 21 36, hakan.engdahl@era.ericsson.se.

At Product unit Wideband Radio Networks, we are developing the radio network for third generation mobile telephony systems, based on WCDMA and ATM technology. Our primary task is the development of software for RNC, which demands the very latest in the choice of new technology. We are working with modern software technology such as C++, UML, RosRT and Object Time. We maintain close co-operation with design centres in Sweden and abroad.

Team Leader, SW Design, RNC – WCDMA

Ref.no FR/H1828

● We are looking for a team leader with a university degree in engineering, who have a few years experience of software development for integrated systems and who want to be involved in the development of third generation mobile telephony systems.

Your work duties will primarily consist of planning and running the team's work, co-ordinating with other teams and units, as well as following up and producing status reports.

Contact: Nariman Rahimi +46 8 757 32 30, nariman.rahimi@era.ericsson.se.

What we are offering: A position as a Systems Manager within one of Ericsson's most important projects – developing new systems and products for Ericsson's broadband mobile telephony systems, third generation, UMTS.

The systems are based on broadband CDMA (WCDMA) radio technology and ATM Transmission.

Systems Manager, Operating Support System

Ref.no FR/H1849

● What you will be working with: Product Unit Wideband Radio Networks is situated in Kista, and within the WCDMA Radio Network Management sector we develop operating support systems whose task is to control and monitor WCDMA base stations and radio network control nodes, as well as tools for design / planning / optimising radio and transport networks (ATM and IP). As a systems manager, you will be part of a group that is responsible for the overall systemisation of these systems.

You will be involved in e.g. requirement definition, standardisation, software architecture, properties, function systemisation and/or user interfaces. You will be in close contact with our design centres situated at various locations around the world.What you should be able to do:

You will have several years' experience of operations and maintenance systems for telecom systems, including knowledge of applicable standards (TMN, SNMP, etc.), and ideally experience of operations centres or network planning with an operator.

Alternatively, you will have several years' experience in software development and systemisation of large, distributed systems.

Experience of the technologies we use (Java, CORBA, XML, HTML, IP, UML, RDBMS, LDAP, etc.) is naturally an advantage. You must be proficient in both Swedish and English.

We are developing the operating support system for the next generation mobile telephony systems. This is an entirely new system, built with modern technologies such as Java, CORBA, XML, HTML, IP, UML, etc., and it should execute on UNIX and NT computers.

We are now looking for a systems design project manager for the Radio Network Management System Design unit.

Our group is responsible for the overall systemisation of the operating support system. The group works with requirement definition, architecture, properties, function systemisation, etc.

Systems Design Project Manager

Ref.no FR/H1850

● You will be the Project Manager for this group, and will be responsible for planning, following up and reporting, as well as dealing with demands and modifications.

A system project manager works both with project management and system design, so a few years' experience of project management and system design would be a suitable background for this job. Experience of operating support systems and the technologies we use is naturally an advantage.

What we are offering: A position as a Systems Manager within one of Ericsson's most important projects – developing new systems and products for Ericsson's broadband mobile telephony systems, third generation, UMTS.

The systems are based on broadband CDMA (WCDMA) radio technology and ATM Transmission.

Systems Manager, Planning Tools

Ref.no FR/H1860

● What you will be working with: Product Unit Wideband Radio Networks is situated in Kista, and within the WCDMA Radio Network Management sector we develop tools for design/planning/performance evaluation/optimising radio networks (WCDMA) and transport networks (ATM/IP).

As a systems manager, you will be part of a group that is responsible for the overall systemisation of these tools. You will be involved in e.g. requirement definition, software architecture, properties, function systemisation and/or user interfaces. You will be in close contact with our design centres situated at various locations around the world.

What you should be able to do: You will have several years' experience within software development and systemisation, ideally focusing on the technologies we use (Java, relational databases, Windows NT, GIS, etc.). Knowledge of planning tools for radio or transport networks is naturally a great advantage.

You must also be very proficient in both Swedish and English, as well as being able to co-operate with people from different cultures.

What we are offering: A position as a Systems Manager focusing on IP security within one of Ericsson's most important projects – developing new systems and products for Ericsson's broadband mobile telephony systems, third generation, UMTS.

The systems are based on broadband CDMA (WCDMA) radio technology and ATM Transmission.

IP Security Expert

Ref.no FR/H1861

● What you will be working with: Product Unit Wideband Radio Networks is situated in Kista, and within the WCDMA Radio Network Management sector we develop operating support systems whose task is to control and monitor WCDMA base stations and radio network control nodes.

We are also responsible for systemising the IP network that is used for communications between operating support systems and the traffic nodes (base stations etc.). You will be involved in the systemisation of this IP network, focusing on security aspects. What you should be able to do: You will have several years' experience of setting up secure IP networks. You should possess knowledge in such fields as Firewalls, IPsec, DNS, DHCP, etc. You must also be proficient in both Swedish and English.

Contact: +4687641429, ulf.larsson@era.ericsson.se.

We now have started a project with experienced personnel to build and integrate SW from several different Design Centres within the RNC node. The team will also load the SW on our target environment.

The team today consists of one project manager, one configuration manager and three SW designers. We'll need one more experienced C++ or pearl script designer to join them.

Script Designer

Ref.no FR/H1845

● Our subproject is part of one of Ericsson's most important ventures – developing new systems and products for Ericsson's broadband mobile telephony systems, third generation UMTS. The development of broadband radio is a prerequisite for e.g. a wireless Internet to work effectively.

We have a number of experimental systems in operation around the world, and we are now in the process of developing our commercial systems. We will start supplying the systems to operators all around the world in less than a year. We are working with leading-edge technology such as ObjecTime, CC, OSE, C++, the RUP process and TTCN.

Our work at the design centre is conducted in design teams of 3-6 people, and each team has a team leader. We currently have five software design teams and one daily build team. If you like working in teams and enjoy a flexible environment, where there is plenty of room to use your own initiative, you will like working with us at the RNC Node Design sector in Kista. You will also be involved in developing the next generation mobile telephone systems from scratch!

Contact: KI/ERA/FRY/BGC, Håkan Toll, +46 08-404 47 91, hakan.toll@era.ericsson.se.

Team Leader I&V

Ref.no FR/H1654

● As a team leader for I&V, you will be in charge of operational activities for a team's assignment. The strategy is to achieve the goal by guiding the operation through active participation, where your own

Team Leader Support

Ref.no FR/H1655

● As a team leader for Support, you will be responsible for building up and running our customer support. Our customers are telephone operators the world over. What are you coming to? We work in a modern software lab using the latest technology under the motto "Building confidence in software by trying to destroy it". One goal is that the test environment must never be a limiting factor, while another is to carry out a social activity every quarter.

Another goal is to have a good mix of colleagues; at the moment there is a slight imbalance in the distribution of the sexes, so we would be happy to see more female applicants.

Contact: Per Larsson, +46 08-757 30 07,per.larsson@era.ericsson.se.

If you would like to be a part in tomorrows Transmission Network design in an environment where the pace is high we might have the job for you. Here are fewer rules than opportunities. So if you are open-minded, flexible, like to travel and take responsibility, then this could definitely be the place for you! We are part of the organisation for UMTS Radio Network infrastructure.

The development is presently going on at high speed and we are part of this unique moment! We see how the products emerge and we have the possibility to affect the final products from the perspective of our competence area.

Our group's objective is to ensure that our customers, the mobile network operators, receive excellent performing 3G networks. Act as a Competence Center in Transmission Network Design by designing their network infrastructure based on ATM and IP technologies, as well as, supporting other Ericsson departments in their work towards other customers. We also use our experience in order to continuously improve our products and services. The work is performed both from our office in Kista, as well as from any other location around the globe.

Access Transport Network Design 3G

Ref.no FR/H1883

● The main task of the job is: Specify and develop Transmission Services. Design and dimension Transmission Network and Services. Competence development to our internal and external customers. Network Design performance responsibility.

We need more brilliant people; we look for newly graduates from University, as well as experienced people.

Contact: Anders Eltvik, +46 8 404 5298, anders.eltvik@era.ericsson.se.

Product Unit Wideband Radio Networks (PU-WRN) develops systems and products constituting the backbone of Ericsson's wideband cellular telecommunication applications. The next few years we are facing an extreme ramp-up in the delivery of commercial products.

Hardware Flow Coordinator

Ref.no FR/H1813

● A crucial part of the ramp-up is the coordination of the hardware flow. Our department is responsible for the coordination of hardware prototypes in the design projects. Our goal is to launch the product on the market on time. Your contribution in this is to manage the interference that may occur between adjacent projects, when production resources are scarce. Part of the work will be to structure working methods and processes that can be applied generally in the development projects. We think that you have at least a bachelor degree in a subject area related to logistics and/or corresponding experience from previous work.

For the right person we offer a dynamic job that will mean a great possibility to experience one of the true crucial hot spots in the development and launch of the third generation products. Within Ericsson English is the common language, therefore we assume that you speak English fluently. Previous experience of Ericsson company culture may be valuable, but is not a demand.

Contact: Johan Sundqvist, +46 8 585 31948,Johan.sundqvist@era.ericsson.se.

At Ericsson's Product Unit Wideband Radio Networks, PU-WRN, we are developing new systems and products for the third generation of mobile telephony systems, UMTS. This new world standard is based on WCDMA radio technology and ATM transmission. The development of the first system is ongoing and projects for coming releases are starting. This is one of Ericssons largest development efforts during all times! Are you interested to join us?

Systems Management, Requirement Management

Ref.no FR/H1781

● We are running a systems project to develop a new Requirement Management (RM) process and method to support us in achieving a coordinated and traceable requirement flow. We have decided to use DOORS as the RM tool. As you know, requirement management is very central to product development, which makes this an important project. The fact that we are now turning into a multi-project product development organization makes this RM project even more prioritized.

To succeed with this task we now need to enlarge the project with a person with experience from requirement management handling. Would you like to participate in that work? You will be working within the following main areas: Participate in the development of our new RM process and method. Establish and run a RM handling group on system level. Actively work with and drive enhancements on the RM process, methods and tools. Drive the use of the RM process, method and tool. Support and advise projects and line in RM matters.

Contact: Vanda Tilver, +46 8 757 14 03, vanda.tilver@era.ericsson.se, Ulf Lönn, +46 8 585 311 20ulf.lonn@era.ericsson.se.

We are offering a number of positions in the field of performance verification/test environment development for one of Ericsson's most important projects - the first commercial radio base station for the third generation mobile telephone system. Within the Performance & Product Approval unit, we are responsible for system verification of the base station's radio performance properties, as well as EMC, climate, mechanics and product safety.

Radio Performance Verification/Test Environment Developer - WCDMA RBS

Ref.no FR/H1773

● We now need to expand the section with more skilled employees in the fields of radio verification and test environment development! You will be involved in verification, following up results, developing advanced test systems, etc. Work is also carried out in co-operation with our development units in Sweden and Europe.

You will ideally be a graduate engineer or have many years' experience of verification or design of digital radio products. Knowledge of LabView is an advantage. Good proficiency in English and Swedish is essential. You will be flexible, innovative and find it easy to co-operate.

We are offering a number of positions in the field of performance verification/product certification for one of Ericsson's most important projects - the first commercial radio base station for the third generation mobile telephone system. Within the Performance & Product Approval unit, we are responsible for system verification of the base station's radio performance properties, as well as EMC, climate, mechanics and product safety. There are currently 14 of us working here, but we need more!

Performance Verification/ Product Certification - WCDMA RBS

Ref.no FR/H1774

● You will be involved in verification, following up results, developing test environments, etc. The work will provide an in-depth knowledge of the radio base station and a broad understanding of mobile systems. The right person can count on having autonomy and a great deal of personal responsibility. Work is also carried out in co-operation with our development units in Sweden and Europe. The required skills areas are: EMC. Climate. Mechanics.

You will ideally be a graduate engineer or have many years of relevant experience. Good proficiency in English and Swedish is essential. You will be flexible, innovative and find it easy to co-operate.

Contact: Jan Rimming, + 46 8 757 2251, jan.rimming@era.ericsson.se.

We are looking for one experienced system engineer eager to work with leading edge technology. Our UTRAN products are built, on one hand on the state of the art radio technology Wideband CDMA, and on the other ATM transmission and Internet Protocol (IP). At the system department, we are responsible for the UTRAN architecture, i.e. we specify and design the Ericsson UMTS Terrestrial Radio Access Network (UTRAN). We are located in Kista, near Stockholm, Sweden.

WCDMA System Engineer for UTRAN Architecture

Ref.no FR/H1910

● Your tasks will vary from general investigations to technical analysis and specification of UTRAN system requirements. You have to be prepared to assist our standardization teams in 3GPP. Your areas will span over all UTRAN traffic interfaces Iu, Iur, Iub. You should also be ready to assist Ericsson UTRAN product management and product marketing to respond to our customers demands.

You have a university degree and have worked with system development or system management. You have a strong background in mobile telephony and have several years of experience with similar work within GSM/GPRS, PDC or D-AMPS. Standardization experience is definitely a plus. In addition, you should have a team spirit, be analytical, you have the ability to perform multiple tasks, you are ready to take initiatives and possibly a technical leading role. English is a requirement as well as the ability to work in a truly multi-cultural environment.

Contact: KI/ERA/FRT/TFC, Alain G. Maupin, +46 8 404 4379, Alain.Maupin@era.ericsson.se.

At the Product Unit for Wideband Radio Networks we are now developing products for the commercial releases of our WCDMA Radio Access Network. At the unit for System Design & Radio Network Product Development we need to strengthen our organization with a project assistant.

Project Assistant WCDMA System Development

Ref.no FR/H1931

● This position means that you will support project managers with tasks such as updating project library and web-site, assist with resource planning and financial forecast, participate and take minutes from project meetings etc. The project assistant co-operates with all of the members in the project, as well as the financial department and line management. We are looking for an organized person with great sense of responsibility. The applicant should have previous experience from the Ericsson organization, or bring some key competence to the organization such as technical or economic education and experience. Communication skills in English are essential.

Contact: KI/ERA/FRT/P, Stefan Svennebring, +46 8 757 3690, stefan.svennebring@era.ericsson.se.

We are working with something really exciting. We are developing new software in Java for Ericsson's third generation mobile system. It is stressful, there's a lot to do, a lot of new things to learn and dizzying future prospects. We work together, many different skills, different nationalities, in different countries. Together we will succeed. We are professionals when it comes to completing really large, complex new development projects.

Manager, Java SW Design

Ref.no FR/H 1948

● We want you to take responsibility for the development of one of our major software packages in Java, using Corba as the distribution mechanism. You will probably have previous managerial experience and personal experience of software design. As a manager here, you will be a generalist and get involved both with the people here as well as with technology and timetables. English is spoken on a daily basis, both over the telephone and in meetings. You will be working in Kista, although there may be trips to Ireland.

Contact: KI/ERA/FRD/UC, Martin Rolf, +46 08-585 31 418 martin.rolf@era.ericsson.se

Software Design in Java

Ref.no FR/H 1950

● As a Java designer, you will be working at the leading-edge of technology as regards software design, but you will also have the opportunity to gain an overview of the function and structure of the new radio network.

You will probably have a few years' experience of programming in an object-oriented programming language, ideally Java. You will be interested in object-oriented analysis, design and methodology. Experience of operating support systems and radio networks is an advantage but not essential.

Contact: KI/ERA/FRD/U, Elisabeth Axbrink, +46 8-50879466, elisabeth.axbrink@era.ericsson.se, KI/ERA/FRD/U, Majid Zolfaghari, +46 08-764 10 21, majid.zolfaghari@era.ericsson.se

GUI Design in Java

Ref.no FR/H 1951

● We are looking for somebody to shape and design user interfaces in Java. You will probably have a few years' experience of GUI design. Knowledge of usability, dominant style guides, on-line documentation, web technology and standards for graphic user interfaces is an advantage.

Contact: Elisabeth Axbrink, +46 8 50879466, elisabeth.axbrink@era.ericsson.se

Trouble Shooter

Ref.no FR/H 1952

● Are you a trouble shooter who wants to help get the various components of complex software systems to work together? We need your help with advanced integration work comprising fault-tracing, analyses and problem-solving. You will probably have a few years' experience of integration and design work. Experience of radio networks and operating support systems is also an advantage.

Contact: Majid Zolfaghari, +46 8 764 10 21, majid.zolfaghari@era.ericsson.se

Candidates interested in the above positions will probably be graduates specialising in computers, electronics or radio, and be proficient in both spoken and written English. We are looking for people both with a few years' work experience and recent graduates. We need people who want to focus on technology and people who, in the longer term, want to move into a managerial position.

Teamleader for WCDMA Base station, System Design

Ref.no FR/H1820

● We are looking for an experienced project manager. Your duties will primarily comprise planning and running a subproject or team, co-ordinating with other teams and units, as well as following up and producing status reports. Expertise in the field of systems work is of interest to us, ideally from other mobile telephone systems.

To be suitable for the position, you should have a good overall view and a desire to influence and motivate other people. Fluency in English is a prerequisite, as the work takes place in international groups.

Project Manager for WCDMA Base Station, System Design

Ref.no FR/H1819

● We are looking for an experienced project manager. You will be responsible for RBS System project within the complete RBS node development project. You will plan, organise and co-ordinate the technical analysis work, and the system design work and follow-up the work into verification for new generations of base stations.

The focus will be on the entire node, i.e. driving forward and keeping together a good base station system. Previous experience of project management and systems work, design or verification, ideally from other mobile telephony systems, is an advantage.

To be suitable for the position, you should have a good overall view and a desire to influence and motivate other people. Fluency in English is a prerequisite, as the work takes place in international groups.

Contact: KI/ERA/FRG/TC, Göran Svensson, +46 8 75 73054, Goran.S.Svensson@era.ericsson.se.

ERICSSON RADIO SYSTEMS, KISTA

We are working with something really exciting. We are developing new software in Java for Ericsson's third generation mobile system. It is stressful, there's a lot to do, a lot of new things to learn and dizzying future prospects.

We work together, many different skills, different nationalities, in different countries. Together we will succeed. We are professionals when it comes to completing really large, complex new development projects.

Project Manager, SW

Ref.no FR/H 1949

● Time, time and time again, you will be involved in such matters as deliveries, technical dependence, the smartest working methods, the best plans and the best team of workers. Our project managers are extremely important. Our software projects encompass between 30 and 40 people who, in turn, are part of overall projects involving thousands of people. We work with 'incremental development' in order to manage the extremely complex systems we are builidng. You will probably have personal experience of software development and management.

English is spoken on a daily basis, both over the telephone and in meetings. You will be working in Kista, although there may be trips to Ireland.

Contact: KI/ERA/FRD/UC, Martin Rolf, +46 08-585 31 418 martin.rolf@era.ericsson.se

Project Manager WCDMA

Ref.no FR/H1945

● We are searching for project managers for our next R&D projects. You will lead the development of RBS platform solutions for WCDMA products together with your project team. We expect suitable education (B.Sc. or M.Sc.), experience from leading HW/SW development projects or subprojects, active attitude and initiativeness, teamwork skills and ability to learn new matters. Good communication skills in Swedish and English are required since you will participate in large international projects.

Contact: KI/ERA/FRU/LC, Leif G Jansson, +46 8 75 71835, leif.g.jansson@era.ericsson.se

Product Unit Wideband Radio Networks is developing, and supplying new systems, and products for Ericsson 3rd generation (3G) Universal Mobile Telecommunications System (UMTS). The system is based on Wideband Code Division Multiple Access (WCDMA) radio technology, and ATM/IP transmission. The Product Unit is located in Kista, Stockholm.

Project Manager for TTC Implementation – WCDMA

Ref.no FR/H1954

● Securing the supply chain is one of the challenges when introducing a new product. The product unit has an organization, which is responsible for securing the supply of its products. The launch of WCDMA RAN products has started. The rollout at the Market Units is handled through the Market Introduction project that is carried through by the PU together with the Market Units.

An important part of this project is to secure the supply chain towards the Market Unit. Our concept is based on well-known TTC principles, and additions to support 3G. During this year we will implement SAP R/3, as our ordering system. You will be the one responsible for securing that an efficient supply flow for our products is up and running, and thereby coordinate the activities needed for this. You will present the concept for the Market Units and work together with them to map gaps to current flow, plan and fulfil the implementation.

We think you have project management-, negotiation- and presentation skills. You should be able getting people committed and getting things done. You are analytical and goal oriented, and you should be able to structure and document plans and results. We also think that you have a university degree within relevant area. If you have the right supply competence and feel that you want a challenge, this job is something for you.

We see the importance of having the right requirements put on the product and the organizations involved in the supply chain, this to get an efficient supply chain. Our department is responsible for defining requirements and to communicate these to product management, design organizations, production and Market Units. We are securing that the products of tomorrow will meet the TTC Global guiding principles and that Ericsson will have products supplied in an efficient supply chain. An important area to improve is the handling of software and licenses.

Project Manager for Supply Chain Management – WCDMA

Ref.no FR/H1955

● We think you have a broad experience from working with TTC (Time To Customer) or in supply related

areas within TTM (Time To Market). Maybe you have a background within product management, design or production.

As a person, you should be analytical, goal oriented and communicative. Your experience is important for us. This will be useful when identifying and driving supply related requirements for products. Your communicative skills will be used in the contacts with, Market Units, Customers, product management, design and production. You should have a university degree within relevant area. We expect you to be able doing some travelling. Take this challenging opportunity to bring your experience from supply into this new product.

Contact: KI/ERA/FRN/FXC, Ragnar Dellcrantz, +46-8-757 0380, ragnar.dellcrantz@era.ericsson.se. KI/ERA/FRN/FC, Marcus Fahlström, +46-8 585 32274, marcus.fahlstrom@era.ericsson.se

We at product unit Wideband Radio Networks are currently up at full speed in developing the first commercial products for Ericsson's 3rd generation UMTS Radio Access Network (UTRAN).

Strategic Product Management - WCDMA Radio Access Network

Ref.no FR/H1957

● We are looking for experienced persons to join our team of Strategic Product Managers for O&M and RANOS. You will be a key player part of a small unit. As a Strategic Product Manager you will be participating in creating a competitive RAN product portfolio in the ongoing race towards 3G and Mobile Internet.

The work includes defining the products, which includes tasks such as product strategies, profitability analyses, market communication and project ordering. We assume that you are open-minded, independent, creative with good analytical skills and commercial orientation combined with the ability to understand technical capabilities and limitations.

You should have a university degree and some years of experience, preferably within system or product management. Experience from other mobile systems such as GSM and PDC is a merit. Experience and knowledge from operators are an advantage.

Contact: KI/ERA/FRX/DCAnders Mårtensson, +46-8-508 791 69, anders.g.martensson@era.ericsson.se

The Ericsson Wideband Radio Networks product unit in Kista is developing products for the 3G radio network system - WCDMA. The unit 'Product Solutions' within 'RNC Product Development' is responsible for the product handling of the Radio Network Controller node products. We now need to expand our staff of Product Handlers.

Product Handler

Ref.no FR/H1941

● The job: Involves structuring and maintenance of the source system products, as well as handling the delivery products, such as definition of product packages and sales objects. You will have frequent contacts with the Design units, Supply units and Product management and be their speaking partner in Product Handling issues in the TTM and TTC flow. Who you are:

You have a good experience in the Ericsson way of product and document handling and the tools used in this process, e.g. PRIM/GASK. You have good skills in English, both spoken and written. We believe that you are a result oriented and open minded person who likes having many personal contacts within the organisation.

Contact: KI/ERA/FRY/X, Bengt Gestner, +46 8 757 0967, Bengt.gestner@era.ericsson.se.

We are looking for an experienced secretary to the Communications Department. The Communications Department is handling the WCDMA Demo Center, Events, Information and Market Introduction.

We can offer you an interesting job within a stimulating and creative international environment. The position is full-time, and includes customary secretarial tasks.

SECRETARY to the Communications Manager

Ref.no FR/H1806

● To be successful in this job you need to meet the following criteria: Have a long secretarial experience (at least five years, preferably from a Market Unit). Have a good knowledge about Ericsson and our internal routines. Be able to manage the Microsoft Office Package. Have a good ability to communicate in Swedish and English. Be familiar with international contacts, and like to cooperate in an international environment. Be a service-minded and well organized person. Have high integrity and be a positive team player.

Contact: Bengt Skörelid, +46 8 757 01 98, bengt.skorelid@era.ericsson.se.

Product Configuration Management

Ref.no FR/H1674

● We need to structure and keep track of the software and documentation we deliver. You will define the product handling, co-ordinate documentation and cater for product quality and traceability.

Contact: Kristina Adebo, +46 8 757 28 46, kristina.adebo@era.ericsson.se, Peter Hagren, +46 8 757 05 69, peter.hagren@era.ericsson.se, Peter von Bahr, +46 8 757 36 36, peter.von.bahr@era.ericsson.se. **Applications** to all the above, include ref no: Ericsson Radio Systems AB, KI/ERA/FR/HRA, Anna Silenstam, 164 80 STOCKHOLM, ansokan.PU-WRN@era.ericsson.se.

ERICSSON RADIO SYSTEMS AB, UPPSALA

Get involved in Ericsson's mobile broadband venture with a post in Uppsala!

At Ericsson Radio Systems in Uppsala, we will be conducting software projects with a growing number of Java programmers. The project will design, test and supply major software packages written in Java, using Corba as the distribution mechanism. The software packages are included in third generation mobile telephony systems, based on WCDMA, Wideband Code Division Multiple Access, which will be the next world standard for broadband mobile telephony.

We employ incremental development in order to rationalise the development process and to conduct the project work in a structured way, in order to coordinate operations and meet the project's timetables. Good proficiency is English is required, as this is the Group language.

System Architect

Ref.no FR/H1868

● You will have many years' experience of developing real-time systems with object-oriented architecture.You will also have worked as a system architect with distributed management systems, control systems or communication systems, and as a result will have been responsible for definition of the overall structures in a large or medium-sized system. Previous experience of working with radio base stations is naturally an advantage. It is important for you to generate an overall perspective of the system, as well as having the ability to get the group to understand the overall structure of the system you are developing.

System Designer

Ref.no FR/H1869

● You will have several years' experience of SW development for technical applications in an object-oriented system. You will be working with everything from system design to implementation, which means you will be responsible for a subsystem and also be in charge of a small group. As we work with Java as our programming language and Corba for distribution mechanisms, knowledge of these is also an advantage. If you do not have experience of these, you will be offered training. You should have experience of graphic user interfaces.

Configuration Manager

Ref.no FR/H1872

● The role of configuration manager entails responsibility e.g. for defining and introducing product structures, dealing with releases and modifications during ongoing development projects. The work also includes the rationalisation of procedures and working methods, as well as evaluating tools. You will like orderliness, and you will have experience of working with one or more configuration management systems. Experience of Ericsson's product management is valuable, but knowledge of ClearCase is also an advantage.

Expert Java

Ref.no FR/H1877

● Can you be our mentor and "heavyweight designer" in Java? We need an experienced Java expert to lean on, as a sounding board, co-designer and inspector. If you have a few years' experience of Java design and are interested in taking up an informal managerial role you should definitely apply for this job!

The job is based in Uppsala, but trips to Kista will be necessary.

Contact: Lennart Johansson, +46 8 764 1328, Lennart.h.johansson@era.ericsson.se. **Applications** to all the above, include ref no: Ericsson Radio Systems AB, KI/ERA/FR/HRA, Anna Silenstam, 164 80 STOCKHOLM, ansokan.PU-WRN@era.ericsson.se.

ERICSSON EUROLAB DEUTSCHLAND GMBH, GERMANY

Research and Development. Implementation Design – Soft Ware. All positions require independent, self-driven individuals who are excited about being part of a new venture within Ericsson Business Innovation. All positions offer the opportunity to work very independently in a small team and to quickly take on a high degree of responsibility. Furthermore, the positions offer the opportunity to work in close contact to the customer and to work in a truly international setup.All positions are based in Aachen, Germany. A certain amount of international travel (up to 20%) will be required.

Embedded Software Designer

● Tasks: software architecture and security architecture design, software implementation and verification on microcontroller (80C51) and other embedded platforms.

Required competence: degree in Electrical Engineering, Computer Science or similar field, preferably some years of professional experience in embedded software development, but outstanding graduates will also be considered, strong communication and team working skills, C programming experience, C++/Java experience is a plus, circuit design experience is a plus.

Software Designers

● Tasks: software architecture design and UML modeling, GUI design, software implementation and verification in Java, system integration.

Required competence: degree in Computer Science, Electrical Engineering or similar field, preferably some years of professional experience in software development, but outstanding graduates will also be considered, strong communication and team working skills, Java and/or C++ programming experience, UML experience is a plus, GUI design experience is a plus.

Project Manager

● Tasks: coordination of software design projects, system architecture design, coordination with customers, partners and suppliers, marketing support.

Required competence: degree in Computer Science, Electrical Engineering or related field, at least five years of experience in software design or project management, outstanding communication skills and strong customer focus, Java or C++ experience, UML experience, database design experience is a strong plus, broad technical background and experience, especially in communications and software engineering.

Contact: Axel Busboom +46 2407 575 7813 or Karl Bohman +46 (0)70 267 28 30. **Application:** axel.busboom@ericsson.com

ERICSSON EUROLAB DEUTSCHLAND GMBH, UNIT HILDESHEIM

The Department EED/E/P of Ericsson Eurolab Deutschland GmbH, Unit Hildesheim has within PU PPDC - a node PU to CNM -the responsibility to develop a packet switching system for the Japanese PDC mobile network. This includes provisioning of the specific PPDC applications based on the WPP platform as well as the corresponding O&M functions (NOC).

The local Fenix project controls activities of system integration and the end to end test, performed in a complete PDC network environment. We have organised our projects in feature teams and are designing our products in an incremental way. Parts of the integration activities will be performed in Japan. In order to strengthen our packet switching system competence we are looking for

System Designer

● Your tasks will be: Executing quick studies and investigations on node and network level. Outlining future product features regarding their feasibility and costs. Following up GPRS and UMTS development, new trends and new technologies in the area of software development. Supporting our customers, the design projects and the product management with technical expertise.

As a suitable candidate you have: At least 3 years working experience in one of the following fields: PPDC, GPRS, Mobile IP or UMTS. Good competence in IP-network concepts, internet protocols (RFCs) and mobile networks. Experience with distributed computing and real-time programming.

Senior Software Designer

● Your tasks will be: Development of Management and Control SW in distributed Realtime. Environment in all phases of the SW development process. Take product, subsystem or block responsibility and further develop the architecture of our products. Technical leading of teams. Follow up new trends and new technologies in the area of software development.

Do you have as a our ideal candidate: Experience in software development with C or C++ and with VxWorks/Tornado, Unix. Already participated in pre- and feasibility studies, design-, implementation- and verification-phases of software development projects. Knowledge and practical experience with software development/design methods and related tools, preferable (E)RUP (UML).

Senior Verification Engineer

● Your tasks will be :Responsibility for tests (acceptance, performance, function etc.) which means defining test strategy and planning for test, verification of subsystems within the PPDC product as well as supporting system integration and system verification. Defining test-cases and performing test preparation and test execution. Technical leading of small teams. Following up new trends and technologies in the area of software verification in order to improve the efficiency of verification concepts.

As a suitable candidate you have: Several years of experience in software verification as well as with test methods and related tools preferably with focus on datacom or mobile networks.Experience in Shell programming, PERL, Tcl/Tk, UNIX, Networking (routing, addressing, sub-nets).

Configuration Manager - PPDC Design

● Your tasks will be :Configuration and Change Control of our incremental design as one of the key success factors of software development. Supporting the definition of the product structure. Setting up and maintaining ClearCase environments. Support the designers in the definition of product structures and in the production and delivery of software packages.

You are very welcome if you have: Experience in configuration control handling for software development. Good knowledge in Unix, makefiles and script programming (CGI, Perl). Senior Technical Writer.

Tasks: Responsibility for the Customer Product Information (CPI) for the PPDC System, i.e. definition and maintenance of the required set of documents and their content and of the process to develop CPI in accordance with the Ericsson standards. Leading of a small team (3-5) of technical writers. Keep close co-operation with development teams and system management. Co-ordinate development of customer documentation for wireless packet platform (WPP) and GPRS with PPDC. Either providing relevant information for development of customer training or taking over the responsibility for this and performing the training.

As our expert in this area you have: At least 3 years working experience in technical writing with focus on mobile networks. Preferably experience within one of the following fields: PPDC, GPRS, Mobile IP, UMTS. Excellent skills in English language, written and verbally.

Contact: Ericsson Eurolab Deutschland GmbH, Unit Hildesheim, Human Resources, Wolfgang Matz, Daimlerring 9, 31135 Hildesheim, Germany, +49-05121-707 462, ecareer@eed.ericsson.se.

ERICSSON EUROLAB (EED), GERMANY

EED in Herzogenrath/Aachen, Germany, in the heart of western Europe, is a young and growing company with an open working atmosphere and highly motivated colleagues.

As part of the Core Network Mobile System operations, EED has the overall responsibility for the MSC/VLR product and the Integration, Verification, Supply & Support of UMTS Core network Mobile Systems. With that responsibility, EED will play a key role in introducing and supporting the 3rd generation mobile systems, UMTS, on the world market.

The GPRS Verification and Maintenance department in CNIC is responsible for the General Packet Radio System (GPRS). We verify the packet switching system on network level with real nodes from end to end. With roughly 80 persons we representa strong datacom unit within Ericsson's verification community. To meet our challengeswe plan to enhance the team with motivated persons contributing their datacom background.Therefore we are looking for:

Quality Coordinator (GPRS)

● You take an active role to supervise and drive the activities in our Network Verification and GSN Product Line Maintenance projects from quality point of view.

In previous quality assurance activities you have already demonstrated a good quality understanding combined with technical competence.

Dealing with datacom systems on non-AXE platforms is familiar to you and considered as your personal challenge.

BSS Trouble Shooter

● For this position we are looking for a skilled trouble-shooter with at least 4 years Ericsson experience.

You will be working in the GPRS End-2-end network verification and maintenance activities.

As an ideal candidate you have gained in depth expertise in the following areas: excellent system expertise of the BSS system (BSC and BTS), vast experience in locating and solving problem areas, basic understanding of mobile data communication (preferably GPRS).

Verification Engineer Datacom

● For this position we are looking for a skilled technical person with at least 2 years Ericsson experience. You will be working in the GPRS End-2-end network verification and maintenance activities. Your main tasks will to plan, implement and support network verification activities with an emphasis on data communication.

As an ideal candidate you have a good previous experience in either MSC or BSC verification activities, good knowledge of general data communication, experience with test and debugging of software in a Unix environment. Previous experience in TCP/IP, Ethernet, ATM, Frame Relay, DNS, RADIUS, BGP etc. are a definite merit. Based on your personal skills, you can communicate efficiently with internal and external customers.

You interest is to fast comprehend new technical areas, improve your competence in the area of mobile data communication and contribute efficiently to your teams success. We offer challenging work tasks on GSM network level, where you will expand your knowledge in mobile data communication, with a strong focus towards UMTS.

TCM GSN

● The Systemhouse Mobile Data Network (MDN) is responsible for the Network Verification of the data traffic in the GPRS network. This task includes handling of all nodes in the network, definition of reference networks, the configuration of all parts of the networks and the verification of the network.

We are looking for a TCM GSN. The TCM group is responsible to maintain the complete GPRS network. This includes MSC, BSC, GSN, different backbones like ATM or FrameRelay, the mobiles etc. The Planning of different network configuration and interface function to the units responsible for the single nodes is included in the task.

As a GSN responsible, your task is to set up and configure the GSN and to support the network verification test activities. You have a solide background in UNIX (eg. as a system administrator), and good experience data communication. You should be team oriented, have the ability to work under pressure and be supportive.

Tool Engineer GPRS

● For this position we are looking for a skilled engineer with at least 2 years Ericsson experience in verification or tools. You will help the GPRS Verification and Maintenance team with tools development and support. Your main tasks will include: adaptation, extension and trouble shooting verification tools, helping verification engineers with using these verification tools and driving tools improvements both at Ericsson and external suppliers.

As an ideal candidate you have gained expertise in the verification of mobile telecom systems, supporting or developing tools for verification activities and already gained first experience in co-ordination or project management tasks. Based on your personal skills, you enjoy communicating with internal customers. You are able to comprehend new technical areas quickly and speak and write English fluently.

You are ready to transfer your knowledge to young, motivated colleagues. We offer challenging work tasks on GSM network level, where you will expand your knowledge in mobile data communication, with a strong focus towards UMTS.

Contact: EED/S/GC, Thomas Busch, +49.2407.575-178, Thomas.Busch@eed.ericsson.se;HR, Markus Helfrich, +49.2407.575-89447, Markus.Helfrich@eed.ericsson.se

The Core Networks Integration and Verification Department (EED/S/T) is mainly responsible for integration, system test and industrialization of the UMTS core network.

Additionally we verify new functionality in the GSM MSC on node level. We can therefore offer positions at the very front edge of technology in the field of mobile telecommunications. EED/S/T are looking for candidates to fill the positions of:

GSM SS/UMTS System and Network Testers

● These Testers are mainly responsible for test design and test execution needed to integrate and industrialize mobile telecom/datacom networks of the third generation.

This involves node testing on AXE10, CELLO or JAMBALA platforms; network testing in a network containing C7, ATM and IP interfaces; trouble shooting, configuring and tuning the whole UMTS network. The test execution is mainly performed in target environment.

As a suitable candidate you have experience in software testing or design, preferably in the area of AXE10 based GSM systems; knowledge of Intelligent Network (platform, services or CAMEL) or charging or C7 Signalling is a significant plus. In the UMTS world testers will need more and more datacom knowledge. So people with experience in TCP/IP or ATM networks UNIX, Windows NT or other platforms; C/C++, Java or other higher programming languages are most welcome. In addition we expect good communication skills, openess, respect, initiative and reliability to work as an effective member in our project teams.

GSM/UMTS System Verification Engineer for Background Traffic and Load

● Our Load Team has the responsibility for Background and Traffic activities (BAT) for the Industrialization projects (R9/UMTS CN1.0/2.0). We are looking for a new team member as a BAT Test Engineer.In this position you are responsible for the way in which the BAT activities are planned, designed and carried out in accordance with our directives and customer requirements. The aim is to have the solutions that our customers need.

Your main activities are: Extract load requirements out of feature documents, Strong participation in planning, implementing and supporting LOAD activities (internal or external), writing of scripts and preparation of traffic mixes for Load generators (MGTS.i2000, I3000), Basic Trouble Shooting when testing scripts and mixes in target environment and user support.

As a suitable candidate you are an Ericsson employee with good AXE-10 experience (2-3 years) and have good test and trouble shooting capabilities. You will need sound knowledge of Load Generators (MGTSi2000/i3000), Data Transcript as well as a knowledge of AUTOSIS and PERL. Experience with testing in a target environment is a clear advantage. A good overview of the UMTS Core Network topology, knowledge about ATM, IGEN, and ALL2/5 is a definite plus.

On your personal side you are open, flexible, and professional, you have a track record of good team working, support orientation and are able to work under time pressure.

Sub-Project Manager UCN 2.0 Integration and Verification Sub-Project

● For our UMTS Core Network Integration and Verification Project UCN 2.0 we are looking for an experienced Sub-Project Manager.Within your team of one Assistant Project Manager and several Test Activity Leaders you will be responsible for prestudy, feasibility study and execution of the UCN 2.0 I&V activities at EED.

You will also develop and implement new strategies for testing of networks and co-ordinate your activities with other international verification centers. The main challenge of this project will be the architectural split of the MSC into MSC Server and Cello Media Gateway.

As the ideal candidate you have at least three years of experience in leading of AXE 10 projects preferably in the area of test, verification or supply. Good knowledge of Ericsson's processes, PROPS, project planning, budgeting and management methods is necessary. Goal orientation, flexibility, initiative and creativity are elements of your daily way of working. Very good communication, co-operation and leadership skills and the ability to work under pressure are important personal qualities. Travelling is a natural part of the job.

Competence Manager

● We are looking for an enthusiastic, pragmatic, goal and people oriented manager and colleague, who will be responsible for 15 to 20 people. You must have excellent leadership, communication and (self-) management skills. You will take care of finding the optimal match between operations and business needs versus our people's competencies, wishes, ambitions and capabilities on the other side.

Some main tasks and activities: Resource planning, project resource contracts, participation in assignment board and S/T management team, performance and development talks, recruitment, salary review & setting, team coaching, career development and planning, keep a thorough overview and understanding of all operations within S/T, understand impacts from future technologies for strategic competence planning etc.

You are part of the S/T management team and together with your colleagues CM's you also drive the further development of our organization, we use P-CMM to enhance our people management practices.

The ideal candidate has a SW Testing and Telecommunications background, combined with previous management experience (line, project). You should have the combination of strong operational orientation and a strong interest in human beings.

You will gain strong experience in line and people management at an intense pace and you will be able to take responsibility in further developing S/T. Also you will get a good understanding (and influence) on our department operations and our way into 3G technology.

Contact: Andreas Demmig, +49.2407575366, eedade@eed.ericsson.se; HR, Markus Helfrich, +49 2407.57589447, Markus.Helfrich@eed.ericsson.se

Transit Platform and System Evolution (TPSE)

● TPSE (Transit Platform and System Evolution) as part of the Core Unit Switching Products is responsible for the Evolution of the established switching platforms for 2G and 3G Mobile and Wireline Core Network Servers.

Our Products are serving more than 40% of the world-wide mobile traffic supporting GSM, UMTS, TDMA, CDMA, PDC, NMT and TACS subscribers.

System Trouble Shooters, 3G Systems

● The Verification Department in TPSE Operations at EED is looking for a system troubleshooter. We serve the Product Units for UMTS, GSM, PDC, TDMA, NMT and all Fixed Local and Transgate systems.

Your main authorities and tasks are to perform analysis of complex system faults and find a solution for these faults, on site support at different TPSE development sites and support project management in technical issues.

As a suitable candidate you have excellent knowledge in AXE and detailed knowledge in at least one mobile application, you are flexible, show initiative and have good communication & cooperation skills. The ability to work under pressure is also an important personal quality. Experiences from System Verification, Trouble shooting and/or Customer support are a clear advantage.

System Test Engineers, 3G Systems

Proj.No 66/399

● Your main authorities and tasks are to define the prerequisites to perform verification of the test object on TPSE level, in both target and simulated environment, to perform test execution and reporting of the results, to do trouble shooting and to support the different applications in their INDUS and FOA activities.

As a suitable candidate you have good knowledge of mobile telephone systems, you are flexible, show initiative and have good communication & cooperation skills. The ability to work under pressure is also an important personal quality. Furthermore, fluency in written and spoken English is required. Experience from System Verification/Test is a clear advantage.

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The EED/S/P "Core Networks Verification System Management" Department is responsible for the design of reference solutions for GPRS/UMTS networks (focussing on IP/Datacom aspects) and the verification of these solutions as well as for system management support of the verification, market introduction and support phases of the CN product life cycle. System management tasks include I&V project pre- and feasibility studies, network verification strategy definition, network and node characteristics work and STP planning.

We're looking for system and network designers with strong IP/Datacom or UMTS/GPRS/GSM background who are interested in seeing how concepts are turned into real systems. In addition to that we're looking for expereinced testers with IP/Datacom transmission network background.

Group Manager – GPRS/UMTS Network Design, Core Network Integration Center

● With the introduction of new IP/Datacom based transmission technologies in mobile networks, the design of "real" networks becomes an increasingly complex task. During the introduction of GPRS/UMTS in their networks our customers need increased support wrt. network design related issues.

In 2000 we initiated the very successful concept of defining, building and testing so called "reference solutions for GPRS networks" that serve as "Ericsson recommended solutions" for operators where we have the main system integrator role. We're now extending this activity for UMTS.

In order to secure a sustained development of this rapidly growing activity we are looking for an enthusiastic, pragmatic, goal and people oriented manager, for the newly created network design group.

Tasks will be: Full accountability for the execution of network design oriented activities in close co-operation with our packet core network verification group, System studies on Mobile Core Network Transport and IP infrastructure, Market and MU support on network design related issues, Network design support for FOA and Network verification activities, Shaping and developing of our GPRS/UMTS network design and activities as well as the group, Recruitment, coaching, competence development, performance evaluation and motivation of your team, Establishment and development of contact network, interfaces and relations, Processes, methods and tools for UMTS/GPRS network design. In order to do a good job in this position, we expect following

Qualifications: Strong technical leadership skills, good communication and (self-) management skills, 'Network oriented' and 'international', 'cooperator' as well as 'driver/initiator', strong technical background in IP/Datacom and mobile networks (GPRS/UMTS), team leading or Project/Line Management experience.

You should have a stable, balanced personality with strong interest in people management. Your main interfaces will be GPRS/UMTS System and Product Management, various PU system managers and the EED/S/P Management Team.

Network Designers GPRS/UMTS & IP-Backbone and Datacom / Network Testers IP-BB and Datacom

● The following working areas belong to your responsibilities: Implementation and verification of IP & datacom infrastructure for mobile Internet services within GSM/GPRS and UMTS networks,

Design of test network configurations and test objects for the system characteristics verification, and the test realization. Integration of network configurations in our lab, and the availability of the test network will be in your hands as well.

You will analyze and compare the properties of the newest router and datacom products from all suppliers, to be able to create optimal product mixtures for our system solutions. You will support our customers with the definition of type acceptance test cases.

Key requirements: Experiences with testing and integration of IP & datacom networks as well as LAN/WAN components. Preferable you gained your experiences from working at the operator/ISP side, system supplier or network service provider.

We further expect a solid knowledge of WAN/LAN network technologies (like Frame Relay, SDH/PDH, ATM, Ethernet and VLAN), knowledge of IP routing protocols (like OSPF and BGP-4) and knowledge of TCP/IP service nodes (like DNS, NTP and RADIUS). You should also bring in your practical experiences with routers from Cisco, Bay Networks, Ascend, Nortel or Ericsson.

Your personal skills enable you to work in teams and communicate efficiently with your internal customers. You are able to comprehend new technical areas quickly. you transfer your knowledge to young, motivated colleagues.

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The section EED/S/L is responsible for the Product Line Maintenance (PLM) and takes central maintenance responsibility for the Worldwide CME20/GSM Switching System, it is considered as the primary competence center for CME20/GSM Switching System and will take central maintenance responsibility for the new UMTS MSC Server in April 2001.

Within EED/S/L, the 'Core Network Help Desk' migrates to provide 3rd line technical support for the Supply & Support organization of Ericsson's Core Network in 2G and 3G Mobile Systems.

The Help Desk is regarded as primary competence center for GSM Switching System support. The responsibility area of Core Network support contains the MSC/VLR node, the GPRS nodes GGSN and SGSN-x, the MGW node, CN-OSS node as well as the respective ATM and TCP/IP backbone networks.

Experienced Troubleshooters UMTS

● You will be actively involved in the Product Introduction of UMTS / GSM Core networks and FOA activities worldwide, like on-site support. You will handle emergency situation on Core Network Products towards UMTS / GSM customers and the UMTS / GSM support organization, like hot TR Troubleshooting and customer escalations.As member of the 'Key Competence Center' for Core Network Products you will give technical consultancy towards the customer and the support organization.

Routine work like technical studies, testing activities and work on ISP and QoS activities will conclude the big variety of the job. You should have good testing or Trouble-shooting background in one of the areas GSM on AXE 10 platform, GPRS nodes, ATM switching and protocol or TCP/IP protocols.

You should have a determination to tackle problems and be able meet new challenges. Willingness and ability to travel to customer sites is expected. An open minded and flexible attitude and the ability to work well in a team environment are important personal qualities. You should also show good written and verbal communications skills.

IN Expert and Trouble Shooter needed for GSM IN Support

● For the IN platform (SCP/SCF) support an IN expert is needed. You will be actively involved in the Product Introduction of UMTS /GSM release and FOA activities worldwide, like on-site support, with a clear focus on IN functionality. You will handle emergency situation on IN Products towards UMTS / GSM customers and the GSM / UMTS support organization, like hot TR Troubleshooting and customer escalations.

Additionally you will develop and improve the IN regression test for AC-A packages and support INDUS activities in respect of IN. Implementation of new commercial services and align them with the existing DT model is also a primary task. You actively build-up and maintain a good relationship to the respective Design Maintenance Organization. Of course you will get the opportunity to learn new products (MGw based on Cello platform, SCP based on Jambala platform).

You should have good testing or Trouble-shooting background in one of the areas GSM on the AXE 10 platform with focus on IN functionality. You should have a determination to tackle problems and be able meet new challenges. Willingness and ability to travel to customer sites is expected. An open minded and flexible attitude and the ability to work well in a team environment are important personal qualities. You should also show good written and verbal communications skills.

Experienced AC-Tester for Global Support of the NO.1 AXE Application

● The product line maintenance section takes central responsibility for the world wide CME20 switching system. It is considered as the primary competence center for CME20 SS. Requirements: testing/verification, PLEX and ASA experience, test system knowledge, IN and tool experience is an advantage, to be flexible and able to work under pressure, to be self-motivated, to work easily on your own and within a team and to achieve goals and customer requirements.

You should have at least 3 years of testing experience in AXE mobile switching. Your main task is to test the correction in all the releases R7, R8, R8s, PRA, HWM, use test system to trace the problem in test channel and transfer your knowledge to less experience people in the group. Travelling at short notice as an integral part of the job.

Experts in Remote Function Change 3rd Generation, UMTS

● Remote are the mandatory methodes for upgrading and updating of AXE based nodes. All future UMTS nodes have the same requirement on remote update and upgrade facilities.CN Maintenance and Support in EED has set up a team that is responsible for the Subroutines and Main Script developement, verification, maintenance, TR Handling and Data Base Maintenance of Subroutines, WWW, Documentation, Process and Competence development, On Site Support for Remote Upgrades and coordination of activities with BSS, CMS88 and Wireline.

To cope with these new tasks we need you and your expertise. We need Remote Scripting experts that know about AXE from FSC and customer point of view and that know about Function Change and package loading. We offer the possibility to prepare the future UMTS nodes in respect to their upgrade and update handling in the field. If you see your future in improving the Remote Idea in Ericsson, then come to the Core Network Upgrading and Remote team.

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The Core Networks Configuration Management Department is a key element of the Core Networks Integration Center. The department is responsible for software and test configuration management and test support for MSC and UMTS Core Network development, verification and maintenance projects and for supporting test activities. CM / TCM assistance is also provided to TPSE and GPRS NV and PLM projects.

Quality Engineer - CN Configuration Manager

● As Quality Engineer for all TCM projects you will have a key role in securing the success of the MSC and UMTS CN products. You will be responsible to track and report our quality status within each project, to investigate quality-related problems and seek solutions for them.

Your role in the line and project organizations is crucial to drive improvements in the department's configuration management (CM), test configuration management (TCM) and support processes. You will oversee the department's process development activities for their relevant content, accuracy and conformance to Ericsson Configuration Management Framework (CMF) principles and the needs of our project orderers.

You will work closely with the CM Academy and the UMTS Core Network project management teams to ensure our CM processes provide controlled, well-defined and efficient execution of all phases throughout the development, verification and support projects. Your responsibility within the line organization will be to ensure the department's management system conforms to Ericsson and ISO standards and is an up-to-date reference of the processes employed in our organization.

A background in design, test or configuration management as well as a good understanding of CMM (Capability Maturity Model), software configuration management principles and techniques (CM Framework), ISO 9001 standards and TQM philosophy and techniques is desired. Process engineering experience would be ideal.

TCM Coordinator for TPSE (CAPC) - UMTS CN 2.0

● Your main tasks will be the planning, alignment and follow up of TCM activities in the TPSE function test (FT) and design projects and ensure correct deliveries of TPSE features to applications.

Essentially, this boils down to ensure the delivery and support to the FT and verification projects. You will work closely with design, function test, verification, Dump production, AS handling, customer product information, correction handling and STE support. Travel might be necessary as the design of TPSE is spread across Europe and you will need to assure the deliveries to the leading TCM organization from all TPSE LDC's.

You will need to closely monitor and report status of TCM activities. Innovative and proactive solution seeking skills are essential. Improvement of methods and quality relating to TCM and support processes used in the projects are also in your charter.

A good candidate is an Ericsson employee with AXE or packet competence in the area of design, testing, CM or TCM. A good understanding of Design, TCM, Function Test, and support processes is desirable. ClearCase and/or Ericsson ClearCase knowledge is a strong plus.

You will need strong organization, planning, coordination, and communication skills. You will have to be flexible and have the ability to work under time pressure.

Project Manager R9/UMTS CN 2.0 Project.

● Your main tasks will be the planning, alignment, execution, and control of local TCM activities in the MSC/VLR function test (FT) project and coordination of core network (CN) TCM for the core network verification activities.

Essentially, this boils down to ensuring the delivery and support of the test environment to the FT and verification projects. You will work closely with design, function test, verification, test bed integration, AS handling, customer product information, correction handling and STE support.

Travel will be necessary as the development of the core network is spread across Europe and you will need to assure the deliveries to CN Verification from all CN Nodes.

You will need to closely monitor and report status of TCM activities. Innovative and proactive solution seeking skills are essential. Improvement of methods and quality relating to TCM and support processes used in the projects are also in your charter.

A good candidate is an Ericsson employee with AXE or packet competence in the area of design, testing, CM or TCM. A good understanding of TCM, verification, and support processes is desirable. ClearCase and/or Ericsson ClearCase knowledge is a strong plus.

You will need strong organization, planning, coordination, and communication skills. You will have to be flexible and have the ability to work under time pressure.

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The Verification Environment Provisioning Department (EED/S/K) is located within the Core Network Integration Center.

The department provides and deploys solutions, including Methods&Tools supporting Integration and Verification activities for UMTS, GPRS and GSM Networks, this includes SW Design, SW Engineering, Configuration Management and Test Methods&Tools Coordination.

Protocol analyzers, traffic mix/load, node simulation, automatic testing, end-to-end testing and interaction with 3rd party providers are part of our activities. To support our further activities we are looking for the following positions:

Software Designers

● Your main task will include Software&Methods Development for the above mentioned activities. E.g. the tools could control mobile phones and air interface simulation, and offers a uniform and generic interface for automatic execution of mobile phone/switching systems tests. Software development is currently done in Erlang, C++, Java and TTCN.

Suitable candidates have a degree in computer science or electrical engineering and have good experience in C/C++ programming.

You should also be familiar with UNIX, realtime/embedded systems as well as with networking and protocol software. Former experience with TTCN and /or Erlang programming is beneficial.

Software Engineers

● We would like to strengthen our core competence in traffic handling and network architecture with external expertise.

We are offering plenty of opportunities to learn and progress in a challenging and changing design development environment. You would be part of a fast moving team developing a new system, which migrates towards a successful future proof development product. A key product for Ericsson for it's market positioning. For this reason we are looking for a number of experienced software design engineers who want to play a leading role in the evolution of Ericsson´s AXE systems.

You should have experience in a design development area be familiar with complete telecom systems, have scripting experience (TTCN, Catapult, Tektronix, Tekelec ... knowledge is a major plus).

To be successful you need to have very good communication skills, quality oriented, innovative and be a strong team player.

Project Manager, UMTS 3.0 Project

● The Methods & Tools Project Manager has the overall responsibility to collect the UMTS testing and network activities requirements, plan and secure their development and ensure the successful deployment/execution of Methods & Tools supporting these activities.

He/She has also the responsibility to accept the assignments, maintain a proper follow-up of the executed hours (time, cost and quality), report progress and ensure fulfillment of the project goals. . This activity is seen as a key role in introducing the 3rd generation mobile systems and all related nodes under Core Network Mobile Systems (CNM).

As Project Manager your primary task will be to set up and coordinate the above mentioned activities combined with the UMTS 3.0 requirements when it comes to Methods & Tools..

You will be working closely together with the project management teams for UMTS 1.5/2.0 and later UMTS 4.0, which will be running in parallel, both on GPRS and GSM.

For this position we are looking for a skilled Project Manager with a minimum of two years of experience from project work within an international organization. Experience ofMethods & Tools and mobile systems would be an advantage.

We offer a possibility to join a dynamic, truly international organization, and work in the forefront of the mobile systems development, facing a tremendous resonance from the competition and thus a real challenge ahead.

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Telefonaktiebolaget LM Ericsson has been involved in various projects in the Kingdom of Saudi Arabia since early 1970'ies.

The first digital switch as well as the first mobile system (NMT) was delivered to Saudi Arabia.

This exciting history is now repeated in the leading role as the main preferred partner to STC (Saudi Telecom Company).

Ericsson is managing the supply, commissioning and implementation of state-of-the-art infrastructure for the GSM system expansion.

This covers demanding deliveries of Switching, Hardware, sophisticated Software, Radio base stations, Minilink/microwave equipment and Training facilities and other highly complex and challenging projects through its Technical Office (TKS).

BS Field Technician Saudi Arabia

● Work Areas: Responsible for guided corrective maintenance. At replacement of HW at BS by following defined procedures.

Tasks to be performed are ordered via Work Order from NO & MC. Perform corrective and preventive maintenance on several equipment, such as RBS 2202, 2301, (GSM System), Mini-Link E and Microwave radios from different vendors as P-COM, Harris and Nera. Tower climbing might also be part of the tasks

Education and training: Basic technical education and experience from Ericsson GSM radio system, not less than two years. And have the following training courses: GSM System Survey. RBS 200 O&M or RBS 2000 O&M. MMIS User Training. Mini Link E, O&M.

Required knowledge: Minimum 1 year experience of RBS 2202 and OMT. Mini-link E and ITS softwareMSM, (or equivalent). Instruments like Site Master and Tems Pocket. Computing skills as Win 95/98, MSOffice.

Desirable knowledge/skills: Harris Microstar microwave radio family. Nera NL Microwave radios family. NERA.NL tel-link microwave radios family. P-COM Tel-Link Microwave family. Worked previously as a BS field Technician at NO & M project.

Other: Cultural awareness. Good knowledge in English. Technical education within Telecommunication. Valid Driving license. Arabic Speaker.

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DIVISION GLOBAL SERVICES

NO & M – Personnel for Nigeria. Division Global Services is fast becoming recognized as the face of service excellence for the new millennium.

As one of six divisions of Ericsson, our role is to deliver exceptional customer service as an integral part of the Ericsson offering.

We are now looking to expand in order to face the very exciting challenges ahead – and you could be a key element in our success.

To find out more about this new force in service solutions please visit our website at: http://globalservices.ericsson.se

The Project Office at TM&PS helps different functions within Ericsson by providing resources for various projects within the EMEA-region. We are now looking for personnel, ready to work on long or short time contracts in a different and exotic part of the world, working with the NO&M project to build up the GSM network in Nigeria.

The project is planned to last two years and is to be started in May-June-2001. We are initially looking for people ready to man the following positions:

System Engineers,

MSC/HLR/VLR/SSF

System Engineers,

AUC/EIR/SMS/VMS

System Engineers,

BSS

System Engineers,

IN/PPS/SCP

System Engineers,

DXX/SDH/Minilinks/Transmission

System Administrator,

OSS/MMIS/SMAS/Netman/RGW

Surveillance Engineers

Field Technicians

● In addition to training, education and skills, it is also essential that you have: Cultural awareness. Good knowledge in English. Technical education within Telecommunication. Valid Driving license.

You must also be prepared to take on the role as instructor and trainer for the local employees that will eventually take part in the project.

If you feel that you are ready for this challenge, please come back to us! (Please note that latest application date is 2001-03-12.)

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