3G gaming attracts young

It is hoped that mobile phone gaming will attract new subscribers to 3G networks. Ericsson is collaborating with the It's Alive gaming company as well as betting services such as Swedish Svenska Spel, ATG and the UK's Ladbrokes, in order to develop new mobile services. **12–13**

New shelter solutions

A new shelter solution for the delivery of base stations will be unveiled this spring. Operators who select the base station shelter will be able to put their equipment into operation at the installation site more quickly and less expensively. **15**

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■ **NO. 3 · FEBRUARY 22 2001**

The expansion of broadband fiber-optic networks alongside India's roads is the most visible sign of the country's developing digital infrastructure. Photo: Lars Åström

Broadband colors India

The view is the same along many roads in India – newly excavated ditches and piles of colorful cables. It is hoped that the expansion of the country's digital infrastructure, which was recently affected by a major earthquake, will provide the country with well-deserved prosperity. Infrastructure is essential in order for India to grow into Asia's second-largest market after China. **Spotlight on India, 16–18**

Success for Engine

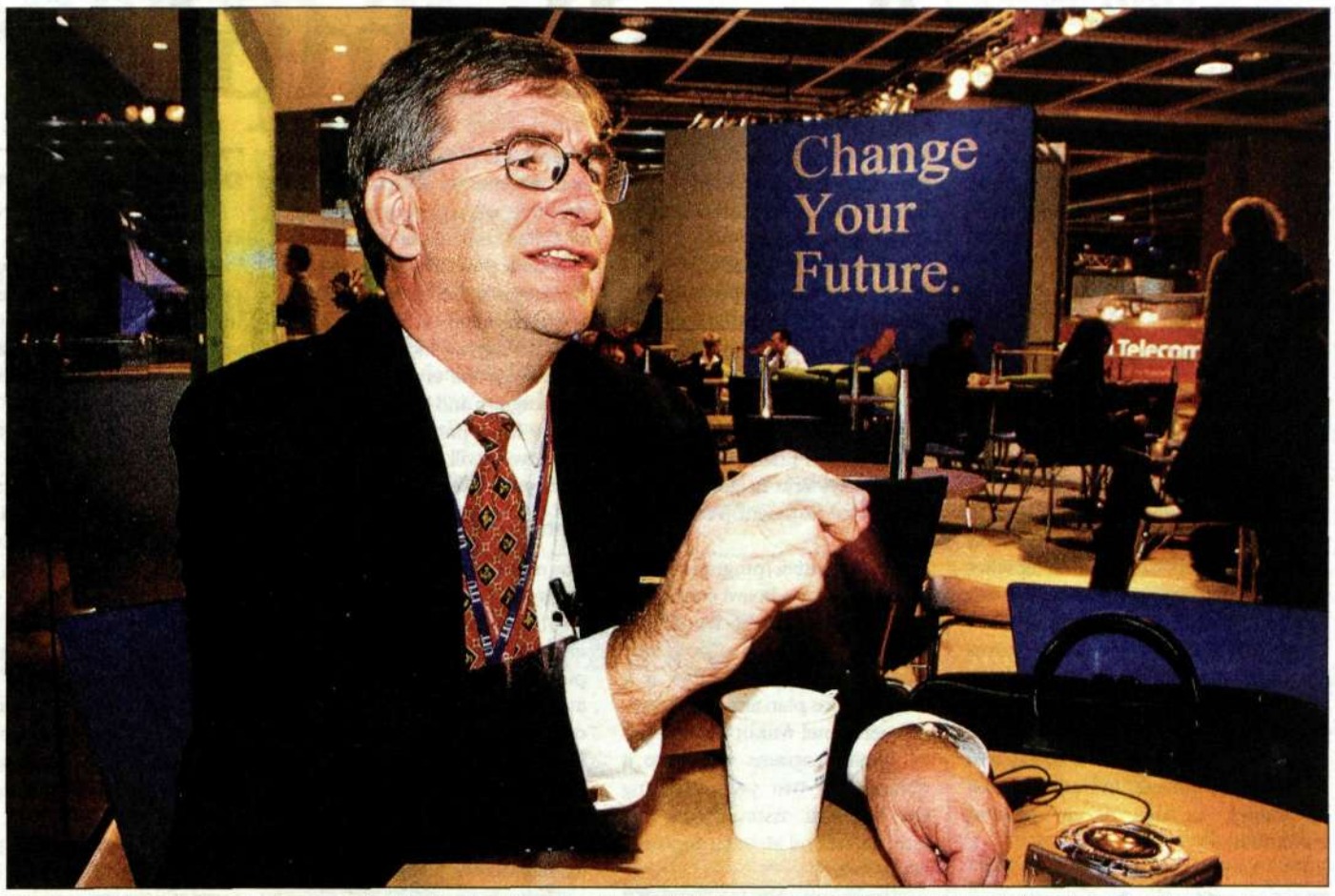
Ericsson has achieved a breakthrough in the American market with Engine solution. WorldCom is to use Engine to combine telephone and data networks. The transaction is the biggest so far for the Multi-Service Networks Division, headed by Einar Lindquist. **News, 6**

Employee shareholding

The Board of Directors has agreed to implement a global incentive program consisting of a stock purchase plan and a stock options plan. For each Ericsson share purchased and retained for a certain period, the buyer will receive one share free of charge from the company. **4**

China market keeps growing

Jan Malm took over as head of Ericsson in China in December 2000. China, which is experiencing a rate of growth of more than three million new mobile phone subscribers each month, is the fastest growing mobile telephony market in the world, second only to the US in size.



"We have an excellent marketing organization, but it will require close collaboration among all the divisions and business units in order to ensure our success," says the new head of Ericsson in China, Jan Malm.
Photo: Lars Åström

➤ This is not the first time that Jan Malm has held a senior position in China. He was previously in charge of the all-important mobile systems unit. Commanding almost 40 percent of the market for mobile systems in China, Ericsson is by far the largest supplier there. Its market share is equal to that of Motorola and Nokia combined.

When Contact met up with Jan Malm, he had just assumed his new position as head of Ericsson in China.

"It's an exciting feeling, and of course a huge challenge. You have to pick up all the reins, but I think I'm starting to do that."

Growth rate increasing

Our conversation turns to the fascinating rate of growth in China. Jan Malm says that not only does it involve a huge increase every month, but that the rate of growth is also increasing. Of course, this places high demands on both the operators and on Ericsson as a supplier. Many of the large networks in China are already operating at the limits of what technology and products can handle.

China has prioritized its telecommunications infrastructure and has had the foresight to construct its networks using new technology and providing a common offering of services throughout the country.

"People are hungering for new technology. Supporting their ambition of being able to offer new services simultaneously throughout the country places great demands on our product management, since Ericsson alone has 450 mobile switches and 600 control units for base stations. Moreover, we're catching up with developments within GSM technology when it comes to processor capacity, signaling and so forth."

Jan Malm has the advantage of having worked within the most successful divisions at Ericsson. But heading one of the most important local companies also involves responsibility for activities that are not at the same phase of development as mobile systems.

One such area is terminals, where the company has lost market share, primarily to Nokia and Motorola. According to Jan Malm, Ericsson still holds a market share of between 10 and 15 percent in China. A reorganization has been implemented, broadening distribution to reach new groups of subscribers, primarily ordinary wage earners. With a host of new, simpler telephones in the product catalog for these lower segments, Jan Malm believes there will be a turnaround. Fixed systems are another problematic area in China, but there has now been a turnaround in this situation.

It's not feasible for China to import all of its telecom equipment

"When it comes to the expansion of narrowband telephone lines, we have lost market share and have had a difficult time competing on the basis of cost. Fixed telephony is dominated by local suppliers who account for more than two-thirds of the market," says Jan Malm.

International switches

"It has forced a repositioning towards more specialized switches, such as switches for international traffic. Various forms of broadband solutions are also growing as a result. This has created positive developments. After being in decline for several years, we grew last year by 50 percent and expect to see between 30–50 percent growth this year," according to Jan Malm.

MINI-LINK is another area that experienced a breakthrough last year, with market shares higher than Ericsson's global average. In order to strengthen that position, a joint venture company has been formed in China for local production of MINI-LINK. This corresponds with one of the ambitions expressed by Chinese authorities – namely, that foreign companies locate their production facilities in China.

Trade balance burden

"It's not feasible for China to import all of its telecom equipment, since this has a negative effect on the country's balance of trade. Furthermore, China's industrial infrastructure within the electronics and telecom sectors has grown rapidly, making it strategically advantageous for us to locate production in the country."

Jan Malm explains that there is a very competitive subcontractor industry in China, suggesting that Ericsson could radically lower its production costs if it were to take advantage of that.

There is considerable interest in China in the new generation of mobile networks. A rollout of GPRS has already started and interest in 3G is considerable. Discussions are taking place as to which method to use for issuing licenses, and it remains unclear whether or not it will be a beauty contest.

Overall, Jan Malm does not foresee any slowdowns during the next five years. The only remaining question is when China will become Ericsson's largest market.

"We usually say that it is only a matter of time. The potential in China is simply enormous."

Mats Lundström
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FACTS/CHINA 2000

Population: 1,278 million
Mobile phone subscribers: 85 million
Mobile phone penetration: 4.7 percent
Operators: China Mobile and China Unicom. Both are state-owned, but they are partly listed in Hong Kong and New York. Vodafone owns a two percent share in China Mobile.

Source: Ericsson, People's Daily and the Chinese Ministry for the Information Industry.

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DID YOU KNOW THAT...

...production of the MINI-LINK radio link system has increased by 90 percent over the past two years.

In just the past year alone, more than 100,000 units were manufactured, a 50 percent increase. Altogether, production is well on its way towards half a million units.

Jan Ahrenbring leaves DCP

»» Jan Ahrenbring, head of Market Communications in Division Consumer Products (DCP), has decided to leave this position. The Market Communications function will be transferred to Philip Vanhoutte, head of Strategic Marketing and Market Communication within DCP, with immediate effect. Philip Vanhoutte was marketing and sales manager at MCI Worldcom, before he joined Ericsson only three months ago.

Wireless broadband for Norway's ElTele

»» ElTele, the Norwegian operator, has selected Ericsson's MINI-LINK BAS solution for the build-out of wireless broadband for companies in Oslo and other major cities in Norway.

"Our experience shows that Ericsson offers the market's best solution for wireless broadband," says Per Morten Torvildsen, President of ElTele.

MINI-LINK BAS transmits radio waves from point to multipoint on the final link to the customer. It is an inexpensive and effective alternative to fiber-optic cables.

ElTele offers broadband services and telephony to private and state-owned companies, as well as government authorities.

Two 3G orders from Portugal

»» Portugal's largest mobile phone operator, TMN, has selected Ericsson as its primary supplier for the UMTS radio access network. According to the agreement with TMN, Ericsson will supply the bulk of the radio access network, including services, for northern Portugal.

Ericsson has been a supplier for TMN's GSM network in northern Portugal since 1997. In addition to TMN, which is part of the Portugal Telecom Group, the Portuguese GSM operator Optimus has decided to buy UMTS equipment from Ericsson.

The latter order includes a core network and radio access network for southern Portugal. Ericsson has supplied GSM equipment to Optimus ever since the operator launched its network in 1998.

Rogers AT&T buys 3G system

»» The Canadian operator Rogers AT&T has selected Ericsson as the sole supplier for its 3G system. The contract, which is the largest that Ericsson has received in Canada to date, covers three years.

Ericsson will supply equipment for a complete GSM/GPRS system. Ericsson will migrate Roger AT&T Wireless' network to Edge and UMTS for high-speed mobile Internet applications.

"We will be able to offer subscribers all over Canada next-generation products and services," says Bob Berner, vice president and technical director at Rogers AT&T Wireless.

"With this contract, we are beginning an interesting new phase in our long-standing relationship with Rogers AT&T Wireless," says Vu Nguyen at Ericsson Canada, account manager for the Rogers AT&T Group.

In 1984, when Rogers AT&T Wireless became the first Canadian operator to take its mobile network into operation, it was an analog AMPS system. Nine years ago, most parts of the system were digitized.

New stock programs for all employees

The Ericsson Board of Directors has proposed to introduce a new global incentive program that will involve all employees.

The proposal will be presented to the Annual General Meeting at the end of March.

"The primary message to employees is: if you're willing to invest in the company, Ericsson will invest in you" says Britt Reigo, Ericsson's senior vice president, People and Culture.

The incentive program being proposed by the Board consists of two parts. One is a stock purchase plan to be offered to all company employees, while the other is a stock options plan aimed at 12,000 key personnel within the company. Both programs will have a duration of two years, starting later this year, assuming that the Annual General Meeting approves the proposal.


Britt Reigo

"The most important reason for the incentive program is that we want employees to become part-owners to a larger extent, thereby stimulating their interest in the company and its development," says Britt Reigo.

In brief, the stock purchase plan is based on employees being offered the opportunity to save part of their salary in order to purchase Ericsson shares. For each share purchased and retained for a certain period, the buyer will receive one share free of charge from the company.

A stock purchase plan similar to the one now being proposed was tested previously at Ericsson in the UK, with great success. Some 75 percent of the employees joined the program and Britt Reigo hopes that a large portion of Ericsson's employees will also join this new stock purchase plan.

Options as a reward

The other element of the incentive program, the stock options plan, will involve 12,000 key employees and will be distributed among employees whose contributions are assessed as being crucial to the company's future development. Earlier options programs have involved 8,000 Ericsson employees, primarily in the US, but this time the options are being distributed throughout the company.


Marcus Sheard

"This is a major change in Ericsson's remuneration strategy. The purpose of the options is to reward employees for excellent and important work, and the employees will be able to see a direct link between their efforts and their wallets," says Marcus Sheard, Vice President, Compensation & Benefits.

The global incentive program, with its two target groups, could also be significant for Ericsson's competitiveness as an employer when it comes to attracting experienced and skilled personnel.

Sharing success

"We have selected a broad program in keeping with the special corporate culture we have at Ericsson. Our greatest asset is team spirit. Teamwork produces team results and this is an effective way of letting everyone participate in the success. The options plan is more aggressive in its structure and is aimed at key personnel groups," says Britt Reigo.

"The incentive program must also be regarded as a part of total remuneration. It's all about our desire to retain and attract people who are vital for our success."

Marcus Sheard adds:

"I believe there are many reasons for opting to work at Ericsson, including the fact that we're a global company with a wide range of development and career opportunities, that we offer comprehensive training programs and that we have an excellent corporate culture."

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http://inside.ericsson.se/incentive_program

QUESTIONS & ANSWERS ABOUT THE PROGRAM

Who is affected?
Provided the Board's proposal is approved by the Annual General Meeting, 12,000 employees will be involved in the options program. In addition, virtually all Ericsson employees will be covered by the stock purchase plan. However, the structure of the stock purchase plan may differ in various countries as a result of local legislation. In individual countries, it may prove impossible to implement the stock purchase program at all.

How much can employees save and purchase shares for?
Employees can save a certain percentage of their gross salary, but a maximum of USD 5,000 per year.

How long do you have to retain the shares in order to receive the free shares?
Our point of departure is that the shares resulting from savings will be retained for three years.

Who will receive the options?
Allotment will be based on such factors as the individual employee's work performance and importance to Ericsson's future development.

When will the global incentive program begin?
If the Annual General Meeting approves the proposal, the first allotments of options will be made during spring 2001. The stock purchase offer will start after that.

New ad agency to strengthen brand

The UK-based advertising agency Bartle Bogle Hegarty, BBH, has been named Ericsson's new partner for the marketing of consumer products.

This new partnership will be of great importance to Ericsson's efforts to strengthen its position as one of the world's leading mobile phone manufacturers.

The existing network of local ad agencies will be replaced by an agency that has offices in just a few countries, but which operates from a global perspective. This change is designed to provide a more consistent and uniform image of Ericsson. Other advantages include a more effective and creative method of building the Ericsson brand.

The agreement is part of Ericsson's focus on research, development, design and marketing.

"Our goal is to further strengthen our position as one of the world's leading players in the mobile phone industry," says Jan Wäreby, Executive Vice President, Consumer Products Division.

BBH is a global leader in its field, and has won several prestigious awards for its advertising campaigns. Its customers include Levi's, Audi and One-2-One. The agency was established in London in 1982 and now has 600 employees. Offices have also been opened in New York and Singapore.

"BBH has demonstrated a very good understanding of our market situation and the firm has convincing ideas about how we can revitalize and strengthen our brand," says Jan Wäreby.

"Ericsson is one of the world's biggest brands in the telecom industry. It has a vision about the future that is based on innovative and cost-effective operating methods. That attitude is completely in accord with our approach," says Simon Sherwood, group manager at BBH.

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Mirek Golos presenting some of the exciting recipes that are available through Tasteline's portal. Foto: Urban Jörén

Virtual cooking

Tasteline's portal offers recipes together with food and wine tips for food lovers. Ericsson has helped the company start up a WAP service that enables mobile phone users to download recipes directly into their WAP phones. Recently, representatives from Swedish lifestyle publications had an opportunity to sample the gastronomical delights that are available using Tasteline's services.

Renowned entrepreneur and company executive Lena Björk, who built up the Inn or Out catering firm in London, was also on hand.

Assisting in the presentation of the exciting dishes was professional chef Mirek Golos.

Jesper Mott

Collaboration with IBM gives boost to 3G

Major business opportunities are on the horizon for financial institutions and banks, now that Ericsson and IBM have established a new collaboration.

Working together, the companies plan to develop mobile business services, banking services and secure systems for electronic transactions. This collaboration will result in the more rapid deployment of GPRS and 3G in the area of finance.

This collaboration will combine Ericsson's expertise within the field of mobile telephony will IBM's financial services and their expertise in the field of information technology.

Combines systems

Together, the companies plan to offer financial institutions a solution that will initially combine portions of Ericsson's mobile Internet applications, e-Pay, Safetrader and WAP Gateway, using IBM's series of Web server products known as WebSphere. The solution is a platform that combines the internal systems of banks with interfaces linked to the banks' customers.

Promotes 3G development

"Together, we will increase the pace of development of the next generation of financial services within the mobile Internet. This will also lead to an increased demand for our services and products," says Lars Boman, president of Internet Applications.

Discussions with IBM were ongoing for over six months before the two companies came up with the optimal solution. Collaboration will not take the form of a joint venture or a jointly held company. Instead, collaboration will be overseen by a joint management group. The group will, in turn, report to a steering committee with representatives from both companies. Lars Boman has been appaionted to oversee this collaboration on behalf of Ericsson.

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Huge GSM order from Turkcell

Ericsson has secured yet another major mobile systems order in Turkey. The Turkish operator Turkcell wants Ericsson to update and expand its GSM network. The order is valued at USD 380 million.

Ericsson's sales of mobile systems in Turkey are spectacular. In February 2000, Ericsson and Turkcell announced a contract for a mobile network that was valued at USD 800 million, an order which remains one of the largest single contracts in Ericsson's history.

In July of the same year, Turkcell was one of the first European cellular operators, to purchase GPRS equipment from Ericsson. Now yet another major mobile network contract between Ericsson and Turkcell is being announced.

In the past year, Turkcell has significantly increased the number of subscribers, and Ericsson has been contracted to increase both capacity and coverage in the operator's GSM network, both geographically and in terms of capacity.

This contract also includes purchases by Turkcell of several of Ericsson's latest GSM products, such as MPS 3.0 (Mobile Positioning System), WAP 3.0 (Wireless Application Protocol) and CNTS (Core Network Transport Solution).

"It is exciting that Turkcell is continuing to partner with Ericsson. This order will give us work for the rest of the year," says Sören Ahlstedt, key account manager for Turkcell at Ericsson in Turkey.

Since establishing operations in Turkey in 1994, Ericsson has been Turkcell's sole supplier of mobile infrastructure.

Sören Ahlstedt expects that several similar contracts will be signed between Ericsson and other Turkish mobile operators in the future.

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Mobile phones connect to office exchange

Mobility in the workplace is one of the areas of focus for Ericsson Enterprise Systems. Two interesting new products are the Mobile Enterprise Communication System and the MD110 Mobile Extension.

These two products create completely new possibilities for making mobile phones an integral part of the office network.

"With MD110 Mobility Extension and Mobile Enterprise Communication System, we can offer our customers a smooth migration path for the large MD110 installed base," says Johny Nyman, strategic product manager at Ericsson Enterprise Systems.

Both products were recently presented at an event for the global trade press that Ericsson Enterprise held in Stockholm in early February.

MD110 Mobile Extension allows mobile phones to be used just like any switchboard exchange. The login procedure is very simple. As soon as the phone is turned on, it is part of the office network and independent of the mobile operator's network.

Queu calls

All switchboard functions are accessible from the mobile phone, including callback for busy extensions and conference calls.

Although the calls are being routed through the switchboard, names and numbers are also presented in the display, so that the callback function can be used for missed or rejected calls, Switchboard operators can queue calls even for mobile users.

Re-used software

The MD110 Mobile Extension will be released to customers during the spring of 2001. The first version of the Mobile Enterprise Communication System will be released toward the end of the year.

"The Mobile Enterprise Communication System is the world's first IP-based multi-service system for business. It will be possible for it to interact with both existing mobile systems and forthcoming 3G systems, and it will provide all switchboard functions that we know from today's MD110," says Johny Nyman.

Software and functionality in the MD110 have been re-used and adapted for the new system.

"This frees up resources for developing new 3G services, such as video streaming, positioning and multi-media conference calls," continues Johny Nyman.

The new system is an all-IP product and based on open platforms and operating systems, such as Unix, Solaris and Linux.

It will be able to handle GSM phones, 3G terminals, IP phones and today's conventional fixed and cordless phones in a common environment.

Kari Malmström
freelance jounalist

Thousands test for certificates

Since Ericsson began its certification program just over one year ago, some 2,000 technicians at Ericsson offices around the globe have already signed up for various tests.

Each month, several hundred people are tested in order to become certified. Within a couple of years, some 20,000 employees will be certified Ericsson technicians for various areas within datacom and WAP. So far, a couple hundred technicians have completed testing. Certificates provide a guarantee that work performed will be of high quality.

The quality guarantee increases the company's reputation within the industry and helps employees to enhance their skills within their fields.

Certification tests have a high degree of difficulty and are available in three different levels.

"Next year we anticipate a big increase in the number of candidates," says Krzysztof Szarkowicz, who is in charge of the program at Ericsson Education within Division Global Services. "By that time, we will have introduced a certification program within the field of Authorized Service Providers or ASPs."

It is, above all, the support technicians, field technicians and engineers who are involved in installation and start-up that are candidates for certification. Subjects include IP Infrastructure, WAP Applications, Business Phone, and MD 110. The required testing can be completed at 1,700 locations.

Lena Widegren
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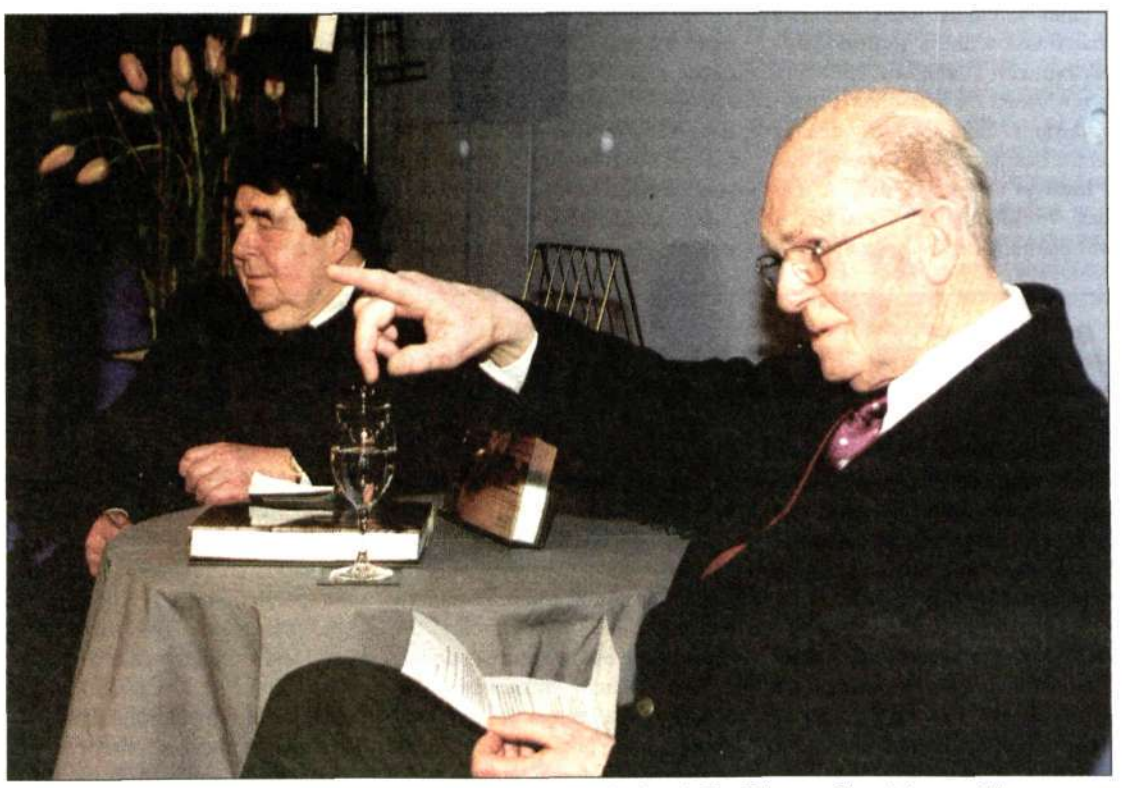

Richard Jeans and John Meurling, authors of the commemorative book, The Ericsson Chronicles, met the press and specially invited guests at the Telecom Museum in Stockholm on February 5 when the Ericsson Chronicles were formally presented. The authors described their work on the book over the past three years and what the expectations are when the book reaches the stores later this spring. The book will be presented to all Ericsson employees.

Photo: Ecke Küller

A huge boost for Engine

Ericsson has been named the primary supplier to WorldCom, one of the world's largest data and telecom operators, as it upgrades and expands its global network. The order is one of the largest to date for the Multi-Service Networks Division and a breakthrough for Engine in North America.

Einar Lindquist, executive vice president of the Multi-Service Networks Division, has great plans for Engine. WorldCom will also need to upgrade its access network and Ericsson is involved in those discussions as well. Other large American operators, such as AT&T and SBC, have also expressed an interest in the Engine solution.

Photo: Ecke Küller

WorldCom has selected Ericsson's Engine solution to integrate the company's existing telephone and data networks into a single network. The end result will be a multiservice network, offering high capacity for new multimedia services. Ericsson is currently WorldCom's sole supplier and managed to secure the order over fierce competition from Cisco, Lucent and Nortel in their home market.

The order means that Multi-Service Networks will be moving its operations to Dallas, Texas in the US, in order to collaborate with WorldCom on the development of hardware, services and new applications. In addition to Dallas, business laboratories for Engine will be set up in four other locations around the world.

"This is our most important contract ever. A strategic partnership with WorldCom will open many new doors for Engine in the US," says Einar Lindquist, head of the Multi-Service Networks Division. "Other operators will need Engine to keep up with WorldCom in the future."

Challenging solutions

The company's first project for WorldCom has already started. Within a couple of months, the first shipments of Engine will be sent to the US.

"The solution we currently offer, fits WorldCom's immediate needs. Future projects, including the construction of new multiservice networks, will be a challenge for both parties."

Einar Lindquist talks about a shared vision and a strategic partnership with WorldCom. The order is not based on a traditional contract, nor is there any firm price tag on the deal. It is clear, however, that it involves very large sums. A year ago, WorldCom announced that it was planning on investing approximately USD 8 billion to upgrade its networks. The company has now made the decision to use Ericsson's Engine solution.

"Not all of that money will go to Ericsson, but the agreement we have with WorldCom today makes us the sole supplier. The deal extends over several years and encompasses several phases," says Einar Lindquist.

Thankful for trust

The WorldCom deal is comparable to the collaboration initiated a year and a half ago with BT. That order was also based more on a mutual interest to succeed than a written contract, and the framework for it has changed several times.

"We have largely the BT project to thank for generating so much confidence in Ericsson and the Engine solution," says Einar Lindquist. "To date, we have landed 38 contracts in Europe, South America and Asia. This year we expect to bring in fifty more."

He quickly adds that they will probably not be as large as the deal with WorldCom. Successful internal collaboration can also be cited as an explanation as to why things are going so well for Engine.

"Our division is receiving all of the attention on this deal, but the good relationships we have developed with WorldCom involve the combined efforts of the Data Backbone and Optical Networks Division (DBO), the Global Services Division (DGS), the local company in the US (EUS) and the Multi-Service Networks Division (DMN). I believe that this was the biggest internal effort ever mounted towards the same goal."

The deal with WorldCom serves as a good start to the new year for the Multi-Service Networks Division, which has set as its goals to grow 20 percent annually and to maintain that pace for three years.

"And that should be profitable growth," says Einar Lindquist. "When things are going well, costs also tend to increase. But we'll be watching that closely."

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Latest version multimedia ready

Engine makes it possible for operators to use their existing networks in their transition to a unified network that allows simultaneous transmission of voice and data.

By combining existing networks, operators will be able to save a great deal of money while simultaneously developing new services.

The Engine solution is not merely a technology but also a method of operation. It involves Ericsson building up good relationships with its customers, becoming familiar with their markets and anticipating their specific needs.

It also includes business models that provide operators with an opportunity to earn more money and attract market share from competitors. Once the product is delivered, the customer receives assistance in getting all of the parts of the solution to work together.

The latest version of the Engine solution completes the step into multimedia. It is based on an integrated IP platform and harmonizes with third-generation mobile networks that are being built based on work within 3GPP.

Engine was introduced 18 months ago and is the current global standard. Today, most large suppliers offer their own solutions, such as Siemen's Surpass solution, Motorola's Aspira and Nortel's Succession. Nevertheless, Ericsson's Engine was the first on the market and has led the way.

Lena Widegren

All-in-one solution better for customers

"Solidus eCare is a true multimedia contact center that has succeeded in completely integrating traditional call center functions with intelligent use of Internet media."

That was the jury's motivation for recently naming Ericsson Enterprise's Solidus eCare the best product of show at the Call Center & CRM Solutions trade show in Dallas, Texas.

Ericsson earned this honor in the competition against companies such as Cisco, Avaya, Nortel, Siebel and Aspect.

"Solidus eCare is a contact center for a new era," says John Magnusson, Portfolio Manager, Contact Center Solutions at Ericsson Enterprise.

Most of the call centers on the market today primarily support voice communications. Solutions that integrate e-mail, chat and the Internet, have to be set up separately and individually integrated. With Solidus eCare, companies can build up a common platform for all kinds of customer contacts, regardless of whether they come in as ordinary voice calls or through various Internet media.

The contact center application can be coordinated with a telephone switch or operate as a standalone. Solidus eCare can control traditional telephony, IP telephony and other Internet-based media. The system can handle chat sessions, e-mail, autoresponder e-mail, IVR (Interactive Voice Response), Web-based callback and telephone calls in a uniform manner. It can generate both real-time information and statistics.

With the help of the system's sophisticated intelligent controller – which incorporates knowledge-based media controls – all incoming traffic, regardless of the medium, is directed to the recipient that is best able to handle the current customer request.

Solidus eCare was developed from an earlier product, the Next call center, which it also replaced.

The first version was launched in March 1998 and the third major release is scheduled for summer 2001.

"The new version of Solidus eCare can be integrated with most communication platforms on the market, opening up new opportunities for companies to easily add contact center functions into their existing call center solutions," says John Magnusson.

The demand for contact center solutions is increasing, partly due to the growth of e-commerce. At the same time, systems are becoming increasingly sophisticated and the need for integration with Customer Relationship Management (CRM) systems is growing. Ericsson Enterprise and a leading CRM company have recently joined forces to jointly test Solidus eCare against a number of support systems for customer service and customer administration.

Industry analysts and market watchers anticipate an annual growth rate of 20 percent in the contact center field through 2005.

Kari Malmström
freelance journalist

Continued negotiations over layoff notices

In conjunction with Ericsson's year-end financial report, some 700 Ericsson employees in Linköping and Kumla in Sweden, and Basingstoke in the UK, were notified that they would be laid off when mobile phone operations there are shut down.

In Linköping, it remains unclear which employees will be laid off. Those who are let go will be offered career planning and training, while retaining their salaries for a full year. Photo: Ecke Küller

In Basingstoke, in the UK, 90 Ericsson employees have been given notice. At the moment, intensive efforts are being made to find new jobs within Ericsson for those who have been given notice.

"These are highly educated engineers who are being laid off, so obviously we'll try and offer them new positions within Ericsson. But our competitors are already calling us to get information about who has been given notice. These are individuals who will definitely not remain unemployed," says Steve Andrews, communications manager in Basingstoke.

"Preliminary reactions from employees were ones of bitterness and disappointment, but once those feelings have subsided, most have been on the lookout for new opportunities.

"Of course, we run the risk that those who were laid off will be disappointed and will not want to take another job at Ericsson and will instead seek a job at Nokia, for example, which is situated just a few kilometers from the Ericsson office in Basingstoke."

For the roughly 70 employees who are expected to be made redundant in Lund, the situation now looks brighter. A majority of those affected have already found new jobs either within or outside Ericsson. Those who have not are being offered part-time employment through Future Forum, retaining their salaries for up to one year. Future Forum is a collaboration between the staffing company Manpower and Ericsson. Employees who are affected by the layoffs in Lund must respond to the offer from Future Forum no later than March 1.

"They will receive support including career planning and further education. They will even be offered the opportunity of trying out other occupations either within or outside Ericsson," says Sven-Olof Jönsson, personnel manager at Ericsson in Lund.

While the situation looks brighter in Lund and Basingstoke, negotiations continue in Linköping.

At Ericsson in Linköping, 500 employees were given notice. At the time of going to press, negotiations between the union and the company were continuing. People who are laid off will be offered training and assistance in finding new jobs for a full year, with pay.

Training will be conducted in collaboration between Ericsson and a staffing company; negotiations continue as to which company this will be.

Tomas Stålnert, site manager for Ericsson in Linköping, hopes that negotiations with the union will be complete before the end of February.

Tomas Stålnert

"I'm optimistic that the redundant workers will find new jobs. Many companies in Linköping are currently expanding, so the future looks bright," he says.

During union negotiations, Ericsson has presented three possible solutions – employment through a staffing company, severance pay or a retirement package.

"I think that one year is not enough time for the staffing company solution, but it is too early to discuss details," says Eric Rynestad, shop steward in Linköping.

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HELLO THERE...

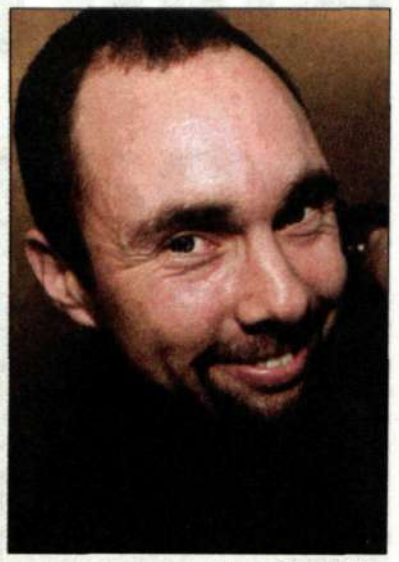

Photo: Ecke Küller

Mattias Isaksson

...who is the new person in charge of determining how the Ericsson brand name is used. He succeeds Johan Fischerström, who retired at the end of last year.

What is it that you will be doing?
"I'll be focusing on how, together, we can build a strong brand image for Ericsson. One of the details of my job is to ensure that we utilize the Ericsson logo in a consistent manner in all of our communications.

"Regardless of where people see the Ericsson brand name, it should convey the same perception of who we are, what we do and what values we stand for."

Why is that so important?
"A strong brand name means everything in today's rapidly changing world. I think everyone is in agreement on that. It's all about how people perceive us. For that reason, it is incredibly important that the brand image is used uniformly and treated in the same manner everywhere."

Are any changes being planned?
"Not when it comes to our logo, of course. Johan Fischerström has done an incredible job with establishing Ericsson's Corporate Visual Language, CVL, throughout the organization and I plan to continue building on that. One change that we will be making is to publish the CVL rulebook on Ericsson's intranet. It should be easy to search and find answers to how publications, for example, should be designed.

"Another thing we're looking into right now is co-branding, which involves 'loaning' out our brand name to our partners. Currently, we collaborate with thousands of companies that develop Internet applications.

"Many of them would like to be associated with Ericsson and what we stand for, including the quality that is associated with us. This is an important issue for us since, if done correctly, it will result in stronger brand name recognition for the company. At the same time, we run the risk of diluting our brand name if things go awry. That's why we're so keen on focusing on strategic brand name development."

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Mobile phones safe according to major study

There is no correlation between the use of mobile phones and cancer. That is the conclusion of the world's largest study to date, encompassing 420,000 Danish mobile phone subscribers. Last December, two studies were published in the US, in which researchers drew the same conclusions.

The study was released by Kræftens Bekæmpelse, Denmark's cancer research organization.

The organization's researchers collaborated with two colleagues from the US. They studied the extent to which 420,000 Danes who had mobile phone subscriptions between 1982–1995, had contracted leukemia, brain tumors or cancer of the salivary gland. On average, they had had mobile phone subscriptions for three years.

Researchers found that subjects in this group did not experience a greater incidence of these cancers than did other Danes.

To the extent that mobile phone users suffered from brain tumors, researchers found no correlation between telephone usage and the area of the brain where the tumors occurred.

Last December, two independent research organizations in the US presented results from their own comprehensive studies. Neither of these studies found any correlation between mobile phone usage and brain tumors.

Although the Danish study was the most comprehensive to date, there were certain weaknesses in the data. There was no information available regarding whether or not individuals included in the study were frequent mobile phone users.

Relatively few of those studied had owned a mobile phone for a period of many years. People under the age of 18 were not included in the study.

Under the leadership of the EU, a new comprehensive study is currently underway regarding mobile telephony and the incidence of brain tumors. Ericsson and several other telecom companies are helping to finance this study. Results will be presented in approximately four years.

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New standard for SAR measurement

A new standard for how to determine SAR measurements has been prepared by the European standardization organization CENELEC.

The standard, which has been harmonized with testing specifications in the US and Japan, is welcomed by Ericsson, which has also been an active participant in developing the new standard.

"The standard corresponds with our opinion of how measurements should be conducted, and is based on testing methods that we and other manufacturers have been using for a long time," says Nina Lövehagen at Ericsson Research.

Exposure from mobile phones is measured using a dummy head. The head is filled with a liquid that has the same electrical characteristics as the tissue in human heads.

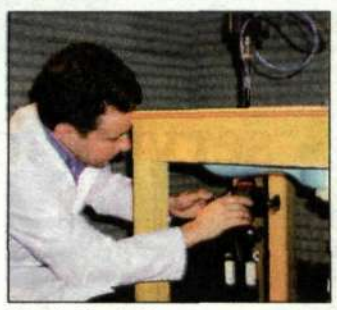
CENELEC describes, in the new regulations, how the dummy head should be shaped and where the mobile phone should be placed in relationship to the head during measurements.

The standard, which will be officially adopted in March, will be used to demonstrate that new products fulfill the requirements laid out in the EU's Radio and Telecommunication Terminology Equipment (R&TTE) directive, which is related to radio wave exposure.

FACTS/**SAR VALUES**

SAR values are a measurement of how much of the energy emitted by a telephone is absorbed by the body. SAR is measured in watts per kilogram of body weight.

Within the EU, the recommended SAR limit is at most two watts per kilogram of body weight, with the average value distributed over ten grams of tissue mass.



Martin Siegbahn measures electromagnetic fields in the laboratory at Ericsson Research in Kista.

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New bank to encourage Japanese net shopping

The Japanese are the world's most frequent users of Internet services. Despite this, many are still unwilling to pay over the Net. Ericsson is now initiating collaboration with Japan's eBANK, in order to stimulate secure payments via the Internet.

The unwillingness to pay for goods and services via Internet is largely attributable to current payment systems, which require the user to provide an account or credit card number and send it over the Net, which is viewed as risky. eBANK is a virtual e-bank that will function as a link between buyer and seller. The bank has all the buyer's particulars, so these never need to be sent over the Internet.

eBANK will base its services on the Safetrader Internet server and the Jalda payment system developed by EHPT, a company jointly owned by Ericsson and Hewlett-Packard.

Jalda can be used for both large and small transactions, which are deducted from credit or conventional bank accounts. E-business in Japan today is dominated by NTT DoCoMo's i-mode services.

Transactions can vary

Sabine Ehlers is regional manager for Japan at EHPT and she believes that the current e-payment system is too inflexible. Either the service is free or it costs USD 2.5 per month.

"Using Jalda, transactions can vary from a few dollars to unlimited amounts. We believe that this will encourage many companies and content providers to offer services on the Net. We hope that cooperation with eBANK will give e-business in Japan a real boost," she continues.

Small share retained

Sabine Ehlers explains Ericsson's decision to become part-owner of eBANK.

"Part-ownership is of major importance in building confidence in the Japanese market. We will help eBANK to install Safetrader and Jalda, as well as market the services.

eBANK is aimed at companies, operators and content providers, as well as end users. They earn money by retaining a small share of each payment transaction, which can be implemented using a PC, handheld computer or mobile phone. The first services are scheduled to start in April.

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Breakthrough for i-PULSE in Japan

Ericsson's i-PULSE product is to be tested by Japan's BSI, a company that is a part of Japan's most important trading house, Mitsui Bussan.

"This is an important step and we believe that we can commercialize i-PULSE," says Toshiyuki Tanaka, account manager for BSI.

FACTS/**I-PULSE**

- i-Pulse looks like a floating palette on the computer's desktop. The program is accessible immediately and can be used to send short, fast messages.
- The product was developed by the IAPP product unit based in Kista.
- The latest version is number "1.5."
- A Software Development Kit for i-PULSE is also available.
- ICQ and AIM (AOL Instant Messaging), both of which are owned by America Online, the American Internet provider, are competing products in the same field.

i-PULSE is a software program in a field that is generally known as Instant Messaging. By installing the i-PULSE application in his PC, the user can maintain contact and communicate with other users in a more direct way than via e-mail.

"i-PULSE's strength lies in the fact that it can function in many different ways – for example, by building in possibilities to hold video conferences or to use VoIP (Voice over IP)," says Kaoru Shichijo, who is responsible for the marketing of i-PULSE.

"It also offers SSL (Standard Secure Layer) encryption, which makes it more secure to use. Moreover, i-PULSE can be further developed for use in a mobile environment."

Kaoru Shichijo has worked with i-PULSE for BSI since June 2000. He views the fact that BSI has decided to test i-PULSE as something of a breakthrough.

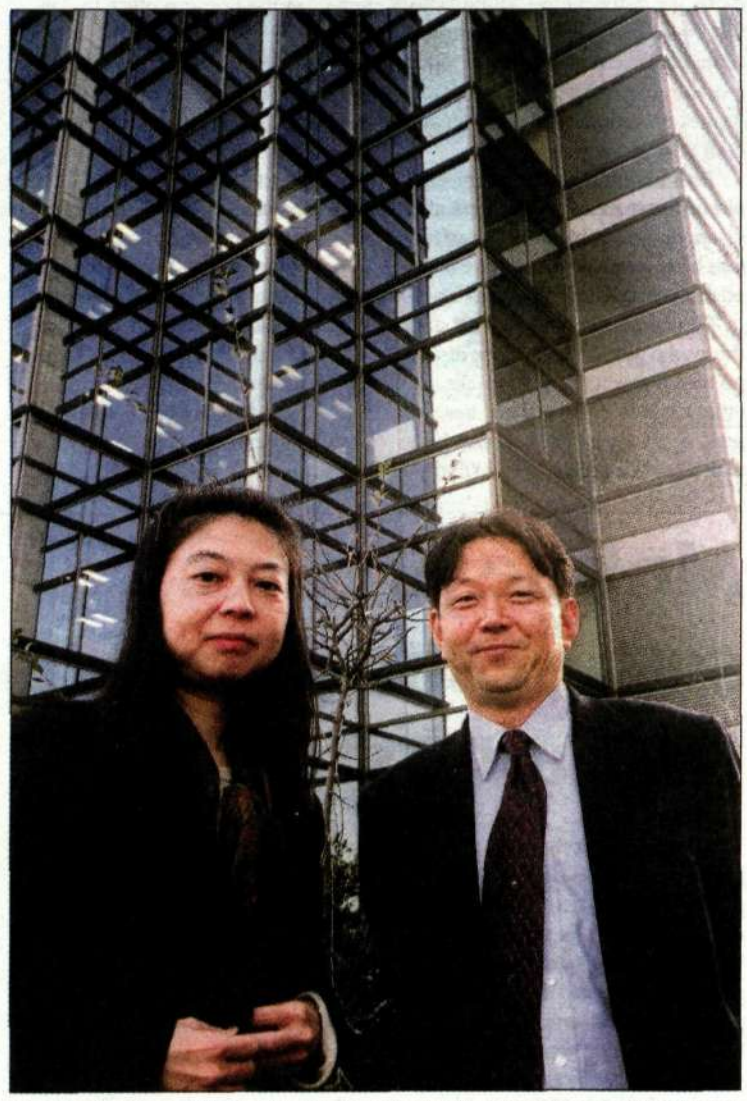
"Naturally, we hope that BSI will discover the possibilities that i-PULSE offers. The company can be a good partner for Ericsson in Japan," Toshiyuki Tanaka says.

BSI, which is owned by Mitsui Bussan, is engaged in refining and adapting applications for the Japanese market. The company, which has approximately 200 employees, has close relations with such large Japanese operators as J-Phone and KDDI, as well as with Sky Perfect TV, which is active in the field of TV via satellite.

"BSI is skilled at finding products that they then commercialize," Toshiyuki Tanaka points out.

BSI was scheduled to begin testing i-PULSE inside the company in January. Between 15 and 20 employees at BSI will test the product for a few months.

Mats Lundström



Kaoru Shichijo and Toshiyuki Tanaka hope that i-PULSE can be introduced in the Japanese market. Photo: Mats Lundström

Ericsson Café – service for i-mode

The recipe for Swedish meatballs, along with Swedish drinking songs as call signals, are part of a content service that Ericsson has adapted for the Japanese i-mode system.

The service, which is known as Ericsson Café, was introduced during the autumn in conjunction with the launch of Ericsson's ER209i i-mode telephone.

In December, Ericsson Café was one of three services under the "What's New" heading on the i-mode menu – a prominent position on a portal that contains hundreds of different services. The idea, of course, is that the service should support the marketing of the new telephone.

"Knowledge of Ericsson, as a brand name, is limited in Japan," says John Hyon, project manager for Ericsson Café in the local company in Tokyo. "Ericsson Café is designed to help make Ericsson better known."

The program began in February last year. John Hyon has worked on the project since July. He and Maikiko Hori, a marketer, developed Ericsson Café.

"The service is a good way to market Ericsson," Maikiko Hori says. "We want to reach 20-year-olds."

The content of Ericsson Café is rather typical of i-mode; there is an emphasis on entertainment and games. There are call signals and screen-savers, but with an unmistakable Swedish touch. There is even a game that allows players to take part in a virtual trip.

"We have tried to keep the service as simple as possible," John Hyon says. "This is important if the service is to be successful."

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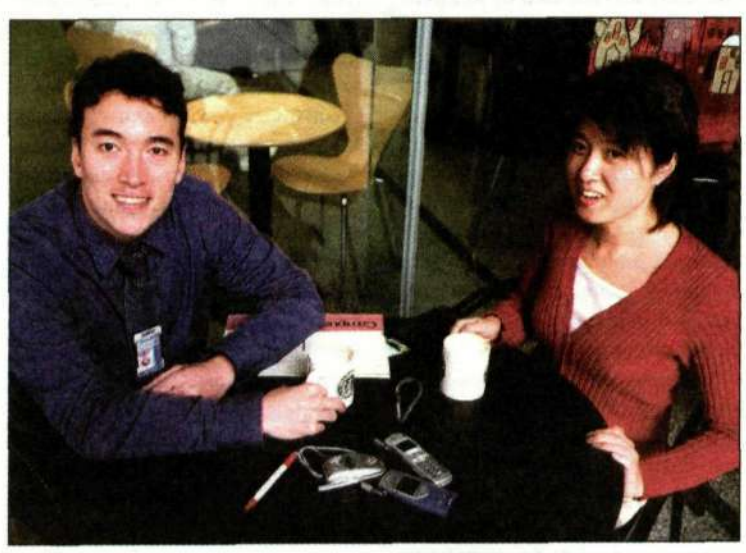

John Hyon and Maikiko Hori developed Ericsson's i-mode service, which has been named Ericsson Café.

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1.3 GB

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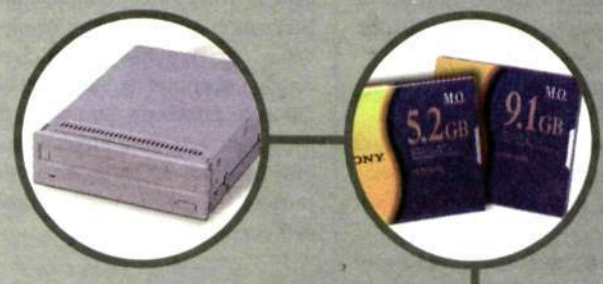

go create

SONY

Nokia delays new phone

A lower earnings forecast and lower target price for its shares.

This was the main news to come out of Nokia's year-end financial report, despite a profit of USD 5 billion. Nokia also announced that it would be delaying the launch of the company's first GPRS telephone.

The Finnish telecom giant presented its best results ever and CEO Jorma Ollila appeared satisfied.

Earnings grew by 54 percent to approximately USD 27 billion.

A total of 128.4 million Nokia phones were sold during 2000, corresponding to 14,600 phones an hour, around the clock.

Nokia's global market share grew to 32 percent over the course of the year.

Price correction

This was not enough to satisfy the market, however.Shares fell sharply immediately following Nokia's announcement, dropping as much as 16 percent on the OM Stockholm Exchange, which is unusual for one of Europe's largest listed companies.

During the days following the correction, many brokerages lowered the target price for Nokia shares.

Shares in Nokia plunged even more on 9th of February after a UBS Warburg downgrade and renewed worries about the outlook for the sector.

Lower margin

Nokia was also hit by pessimistic overnight comments about the market from Siemens and Philips.

The reason for the downgrade was Nokia's forecast for 2001, in which the company predicts a lower operating margin than last year's 22.3 percent.

Only towards the end of 2001 does Nokia anticipate that this will reach 20 percent.

Worries about the downturn in the American economy were cited as the cause.

Phone delayed

The company is also reducing its estimate for the total number of mobile phones to be sold in 2001 from 550 million to between 500–550 million terminals.

Last year, Nokia launched 19 telephones and the company anticipates that it will launch a similar number of phones during 2001, according to the year-end financial report.

Nokia's first GPRS phone will be delayed, however.

It was to have been launched during the first six months of this year, but has been delayed until at least the third quarter.

Over the long term, this could give Ericsson an edge, since the company expects to make its R520 phone available towards the end of the first quarter.

On the systems side, Nokia's operating margin dropped from 19.2 percent in 1999 to 16.4 percent during the last quarter of 2000.

Mats Lundström

Setback for Cisco

For the first time in Cisco's history, the American network giant has failed to meet market expectations, according to its interim report for the second quarter of the fiscal year.

Earnings of USD 0.18 per share were reported rather than the USD 0.19 anticipated by the market, according to the financial news service First Call. Revenues totaled USD 6.7 billion, compared with USD 4.4 billion for the corresponding period a year ago. According to First Call, analysts had anticipated sales of USD 7.2 billion.

The quarterly report was released on February 6, after major stock markets had closed in the US. During the day, the price of Cisco shares had risen, but during unofficial after-hours trading, shares fell a few percentage points.

Fierce competitor

Cisco is considered one of Ericsson's fiercest competitors due to its number one position in the world, when it comes to the delivery of network equipment such as routers and switches for heavy Internet traffic (IP).

The Silicon Valley based company is the single largest company listed on the NASDAQ exchange in terms of market value. During the eleven years that Cisco has been listed on the stock exchange, the company has never failed to achieve analysts' expectations and has continuously delivered increasingly large revenues and profits.

It is therefore no surprise that the company has been the darling of Wall Street.

Lower expectations

Both Lucent and Canadian-based Nortel have had to lower future expectations significantly, partly due to a reduced demand for the companies' products. Nortel and Lucent are also competitors of Ericsson, and it was not surprising that the general economic downturn would also affect Cisco.

John Chambers, CEO of Cisco, has previously stated that not even Cisco would be immune to the downturn in the economy, but that he views the trend as temporary.

Juniper, which manufactures large switches for IP traffic, is yet another competitor of Cisco. A recent startup, Juniper is partly owned by Ericsson.

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Startups seek US capital

It can be difficult for Swedes to attract American venture capitalists. Eleven Swedish companies that focus on the mobile wireless industry have increased their chances, however, following an event held in Silicon Valley.

"In order to be the next Ericsson, new Swedish startups need to be able to quickly test out whether their business concepts are sustainable outside Sweden," says Martin Andersson, with the Swedish Office of Science and Technology in Silicon Valley. He was the project manager for Mobile Vision Venture, an event where Swedish companies could form contacts with American investors and potential partnerships with other companies.

According to Martin Andersson, who conducted an evaluation of the event, which was held last October, companies formed an average of ten new contacts with venture capitalists and potential partners.

"Participating companies can expect to sign one or two contracts or joint-ventures with partners or investors," claims Martin Andersson.

Strong position

The background for this event is Sweden's strong position in the field of wireless communications. Nicknames such as "The Wireless Valley" or "Wireless Mecca" have caught on around the world. In addition to Ericsson's dominant role within wireless communications, a host of newly formed companies working on mobile wireless products are behind this boom.

"That's why there's so much interest for this kind of Swedish company in Silicon Valley."

Last summer, eleven representative Swedish companies were selected and given the opportunity to participate in Mobile Vision Venture.

"Of course, we wanted the companies to be Swedish and not be listed on any stock exchange. The final two criteria we had were a focus on wireless communications and a desire to expand into the United States," says Martin Andersson

"Venture capitalists in Silicon Valley are probably the most critical audience one could have. Consequently, we helped participating companies prepare themselves through a workshop where they can practice making ten-minute presentations about their companies."

During the second day of the workshop, a dress rehearsal was held in front of an expert panel. The actual event was held a few days later, attended by a host of well-known and lesser-known venture capitalists. Included among the almost 180 participants at the gathering were representatives for active investors such as Crosspoint Venture Partners, Draper Fisher Jurvetson and Technology Crossover Ventures. Also in attendance were several smaller venture capital companies that specialize in companies focusing on mobile wireless services.

Comparative report

In addition to this event, the Swedish Office of Science and Technology published a report. Among the sponsors of this event were Ericsson, Sweden's IT Commission and Cap Gemini Ernst & Young. The report contained a comparison of four countries – Sweden, the US, Japan and Italy – looking into the degree of maturity of mobile services.

The report puts Sweden into context with the other nations and shows that the country has a head start in the field of wireless communications, but not in every respect.

"Focus on what we have"

"Sweden takes a different attitude towards innovations and technology. While we're dependent on talented engineers, we're not as skilled at discussing technology in terms that consumers understand. The US and Italy, on the other hand, are good at creating services based on less sophisticated technology."

"We absolutely have to continue marketing Sweden and Kista as 'The Wireless Valley,' but we should sometimes be more focused on what we have rather than constantly looking towards the future," says Martin Andersson.

Mats Lundström

www.statt.se/mobilevisionventure/

COMMENTS ABOUT MOBILE VISION VENTURE

Rikard Kjellberg, Ellipsus Systems:
"Mobile Vision Venture has provided us with a kind of seal of quality, following which we have been spontaneously approached by numerous investors and potential partners."

Björn Westerholm, Mobilaris:
"We've received many new contacts from virtually every continent. Mobile Vision Venture has provided us with a good launching pad not only for our US introduction, but also for when we're ready to establish Mobilaris in other countries."

Bo Österberg, Bluetronics:
"We've improved the presentation of our business concept by learning what the most relevant aspects are. Of course, the contacts that we formed during the event were also valuable."

Gustaf Rosell, Xpedio:
"A beneficial exercise, although much more is needed in order for it to result in any financing. More advisors could have been on hand."

FACTS/THEY MET THE VENTURE CAPITALISTS

Eleven Swedish companies participated:

- Bluefactory
- Blueice research
- Bluetronics
- Columbitech
- Ellipsus Systems
- Ipunplugged
- Mediatude
- Mobilaris
- Mobileposition
- Pipebeach
- Xpedio

News can be read on the fridge terminal in the Andersen home. Weather information is also available. Photo: Lars Åström

Testing smart homes

A pilot group of 50 families in the Danish town of Ballerup is testing Ericsson's and Electrolux's joint solution for smart homes.

"Every morning, I check out the news via the refrigerator," says Finn Andersen, whose family is involved in the project.

News via the refrigerator? Yes, that's right. It is possible because the refrigerator is a combined computer and white product. There is a computer screen built into the door, where news and a multitude of other household-friendly services can be accessed. The Screenfridge is only the visible part of a joint venture between Electrolux and Ericsson, which has been given the name e2.

During the autumn, e2's products were tested in a suburb of Copenhagen. In collaboration with the local company, Ericsson Denmark, and the telecom operator Tele Danmark, 50 households in Ballerup were equipped with a Screenfridge, a WAP phone, a broadband Internet connection and a wide selection of household services.

No special prior knowledge was required by the participants; the idea was to allow ordinary people to test the products. The Danish Gallup Institute selected various kinds of families and will conduct evaluations during the spring, when the pilot project will have been under way for about six months.

It was in August that the Danish families received their new refrigerators, but there were delays from the start, and at the end of September, the households were given broadband ADSL connections to allow them to access the services.

Huge potential

We sit and drink coffee in the Andersens' kitchen one overcast Sunday afternoon. The members of the family are the father, Finn, who is self-employed, the mother, Maria, who is unemployed, and their grown-up children, Michel, 21, and Monica, 18.

The screen on the fridge door, the humming sound and the tangle of wires on top of the fridge are the only signs that this is an intelligent home. Despite this, the equipment has affected the family more than they thought it would.

"Previously, I switched on the TV every morning for the news. Now I watch the news on the fridge instead," says Finn.

Weather and news are the most common applications, but the potential is even greater. The offering consists of a number of utility services adapted to the needs of a family home.

Using the computer on the fridge door is more fun than going into the office

Maria Andersen

The Andersens can check weather forecasts, TV and radio schedules, look for numbers in the phone directory and make use of a joint calendar.

It is also possible to send e-mail and, eventually, it will be possible to talk on the phone via the fridge. Above the screen, there is an inbuilt video camera that can function as a videophone, if the person at the other end has the same modern technology.

"The high-speed Internet connection is probably the greatest benefit," says Michel, who mainly uses the terminal for sending e-mail, surfing the Net or sending SMS messages.

Finn is particularly impressed by the traffic information.

"You can find out exactly what roads to avoid. A map shows the precise location of traffic jams."

Electronic reminders

Although the Andersen family uses different types of information services, they have not adopted the more advanced services, which require a greater amount of interaction.

Maria thinks it takes time to become accustomed to the range of options.

"I am at home during the day and have time to do the shopping, so we haven't used those possibilities. However, there are families within the project, particularly those with small children, who have found that it works very well," she says.

"There are lots of recipes in the terminal and when I have decided what I want to make for dinner, a list of ingredients is created. The list can then be sent to a shop in Ballerup, which has the goods sent to your home. We plan to test this service soon."

The electronic reminders are also linked to the WAP phone. Father Finn can, for example, call the fridge and ask what items are on the electronic shopping list and then drop by the supermarket and buy them on his way home from work.

The fridge can't yet keep track of what is on the shelves, nor can it recommend menus based on the food behind its door. These services are something for the future.

Since the family has a combined kitchen and living room, where they spend a lot of time, they use the fridge terminal on a daily basis.

"It is always switched on and it is also more convenient and more fun to use the computer on the fridge door than to go into the office and hook up," says Maria.

Mats Lundström

New methods for old services

The project in Denmark shows that Electrolux's and Ericsson's collaboration has entered a new phase.

"We want to test our business model in real life," says Uolevi Partanen, who is heading the project on behalf of e2 Homes.

The core aspect of e2's concept for the "Intelligent Home" is to link together web-based household services with the help of fixed and mobile communications technology.

An important part of e2's concept is the new media channel, which has the working name KitchenPipe and specifically addresses the situation in the kitchen. This contrasts with the confusing flood of information on the Internet.

e2's project in Denmark is based on a discussion between Ericsson and Tele Danmark, which markets itself as a progressive operator, on the subject of services to households.

"Tele Danmark also has a strong owner in America's SBC, which is an extremely important Ericsson customer," says Uolevi Partanen.

The project commenced last spring with the focus group designing a number of services. Tele Danmark is service provider for the project, with responsibility for local content.

"e2 stands for the concept itself. We supply the technology and the service architecture. Electrolux and Ericsson are subcontractors for e2, with Ericsson supplying communications equipment and assisting with the integration and testing of the system. Electrolux focuses on the terminals as the supplier of the Screenfridge.

The goal of the field test is to analyze how ordinary households interact with e2's products and services.

It is equally important to investigate how e2's business model functions, as well as creating interest in the market through the mass media.

Uolevi Partanen believes that e2 can bring the telecom operators, Ericsson's traditional customers, added value in the form of enhanced loyalty, progress in the value chain and increased and more balanced traffic in the Network.

Tele Danmark recently signed a letter of intent to procure ADSL technology from Ericsson. This is currently Ericsson's largest ADSL order in Europe. The Ballerup project, which incorporates Ericsson's ADSL technology, could be a contributory factor, Uolevi Partanen believes.

Mats Lundström

Games win subscribers to new networks

A robot that chases and shoots other robots in the city. Or, a character in some gigantic docusoap full of intrigue and high-pitched action drama.

When the next generation of mobile systems start operating, the games will be the decoy that attracts subscribers to the new networks.

Tom Söderlund, president of It's Alive, is convinced that cellphone games are destined to become a huge market. Photo: Lars Åström

➤ Europe's mobile market has i-mode fever. The telecom industry, application developers and operators are all looking to the East, to learn from the Japanese recipe for success. The aim is to find the key services, the killer applications, that will make mobile Internet really take off.

At Ericsson's Internet Applications division, a group of developers have grasped the importance of games in the popularity of i-mode. Leif Ödmark leads the operations with the working name of Mobile Gaming Framework – a concept for mobile operators who want a fast and easy way to offer games to their subscribers.

"Mobile Gaming Framework makes it simpler for games developers to utilize mobile Internet in the game concepts. We spotlight services that are currently available on the networks – for example, positioning, e-payment and messaging," says Leif Ödmark.

As early as this spring, the first mobile game will be placed in operation in Sweden – according to Tom Söderlund, president of the Stockholm-based It's Alive. The company is behind Botfighter – a type of combined role-playing and paintball.

"We conduct far-reaching discussions with both Swedish and foreign operators," says Tom Söderlund. "And it's not difficult to make them listen. You need only look at the traffic reports to see that young people account for a large proportion of network revenues. The operators are seeking high and low for applications that attract these groups."

Downtown provides gameboard

Botfighter exploits the possibilities of the mobile system for positioning. Players run around downtown and find out from their cellphones where there opponents are. If they can come sufficiently close, they can shoot their opponent and gain more points.

Botfighter is developed for today's mobile systems, but according to Leif Ödmark, the real boom is expected to come when GPRS, and later on, UMTS, begin operating.

"More flexible pricing schedules and payment services are needed, terminals that are more geared to games, and higher bandwidths, if games are to become really big. And it will almost certainly be something of a chicken-and-the-egg situation. While GPRS and 3G are necessary for any games breakthrough, it will probably be the games that attract subscribers to the new networks.

There are many indications that games will account for a considerable proportion of the traffic in tomorrow's mobile networks. The Datamonitor market analysis company estimates that four of five 3G subscribers will use their terminals for mobile games.

This, combined with the forecast by Ericsson and the rest of the telecom world that the number of mobile users will approach one billion as early as 2005, points to a total of 800 million "mobile players" within five years – an enormous market that will create massive competition.

Gaze fixed on wireless

"We are already seeing how companies that develop online games for fixed-line Internet are turning their gaze to the wireless world. That is the market in which growth will probably take place," says Leif Ödmark.

In mobile games development, a great deal has happened only in the past year. When Tom Söderlund and It's Alive started up in February, they were essentially alone in the market. Today they have company in the more than one hundred enterprises worldwide that are developing various types of games for mobile use.

"We are convinced that this is going to be big," says Tom Söderlund.

"All due respect to useful services, but they are only used sporadically on those isolated occasions when you have to find something out. Playing games is something people will want to do all the time,"

Niclas Henningsson
freelance journalist

Future games: the virtual docusoaps

With all due deference to positioning, WAP and SMS. Once the next generation of mobile systems begins operating, the really cool mobile games will become reality.

➤ It's Alive's concept for future 3G games is a type of docusoap – a gigantic role-playing in which all the players have alter egos and interact with each other in a far-fetched and melodramatic soap-opera reality.

"The idea is to superimpose a virtual world on the real world," Tom Söderlund explains. "By means of advanced positioning, the game can send assignments to the players regardless of their location. For example, someone might receive the message that the tobacco store she has just passed is about to be robbed. It is then up to the individual player to decide how to respond."

In the docusoap game, the mobile terminal acts as a type of umbilical cord between the real world and the soap world. The players communicate and send information between their terminals using Bluetooth.

Unlike Botfighter, where players do not see their opponents, the players do meet in the real world. The social dimension will be important in these future games, Tom Söderlund believes.

In the docusoap, the players are constantly participating. They move in and out of the virtual world and play out their roles as the action unfolds. But doesn't this present an obvious risk of abuse, excessive role-playing and erasing of the boundaries between the player and his/her docusoap alter ego?

"Sure, that is a risk," Tom Söderlund agrees, "It's important to keep a healthy attitude to the games. But it's up to the individual to decide where the boundary should go."

Niclas Henningsson

Ericsson's collaboration with three betting companies will make it easier for players. By offering new WAP services, users will be able to place their bets using their mobile phones, thereby avoiding a trip to the betting shop.
Photo: Ecke Küller

WAP collaboration with betting services

➤ Ericsson has initiated WAP collaboration projects with several betting companies, including Sweden's ATG, Svenska Spel and the UK-based firm Ladbrokes. Ericsson is developing mobile Internet services for various forms of wagering in collaboration with these betting services.

Ericsson is making a major effort to develop WAP services for the wagering industry.

"Wagering will likely be a significant factor in helping to drive the development of the mobile Internet and 3G forward. People involved in gaming will benefit greatly from the mobile Internet," says Ericsson's Jan Lindgren, executive vice president of Mobile Internet Solutions.

"People will no longer be required to place their bets at betting shops or even connect online via a computer. Wagering will be done via mobile phones."

Ericsson has developed a WAP service for the Lången odds-based program on behalf of Svenska Spel. In collaboration with ATG, Ericsson has developed a WAP application that enables people to place bets on horses using their mobile phones. Testing of the new system, with 100 participants, began in December last year and will continue through the comming months. The company's latest collaboration involves the British betting service Ladbrokes. Ladbrokes is one of the world's largest lottery and betting companies and has selected Ericsson to develop its WAP betting services.

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Game development partnership

➤ Positioning and the Internet are the primary ingredients behind It's Alive's concept for mobile network gaming. And Ericsson is an important partner in making these gaming ideas a reality.

It was out of a feeling of impatience that the gaming company It's Alive was formed in February 2000. The company's four founders, with president Tom Söderlund at the helm, simply did not want to wait until the next generation of mobile phone systems was launched.

They wanted to be able to produce exciting games straight away and were convinced that existing technology, together with a little imagination, was all that was required in order to succeed.

"We studied the functions available in existing networks and looked at the technology that was just around the corner," explains Tom Söderlund.

"We focused on two functions around which to build our entire gaming concept: positioning and the ability to use other media, especially the Internet, in order to create an exciting background for gaming."

In the second half of last year, It's Alive's first game, Botfighters, was launched. It is being marketed to operators all over Europe, and is able to take advantage of positioning services in mobile networks.

The game is also being used to help launch Ericsson's Mobile Position System.

"Botfighters is a good example of the kinds of applications and options that exist using positioning," explains Tom Söderlund. "Ericsson has been an important partner in the development of this game. We've collaborated through the Developer Alliance Program and have received a great deal of support and assistance from Ericsson's Developer Zone."

Niclas Henningsson

Developments in mobile gaming are generating interest. When It's Alive started out, it was almost alone in the market. Today, there are numerous new companies with similar ideas.

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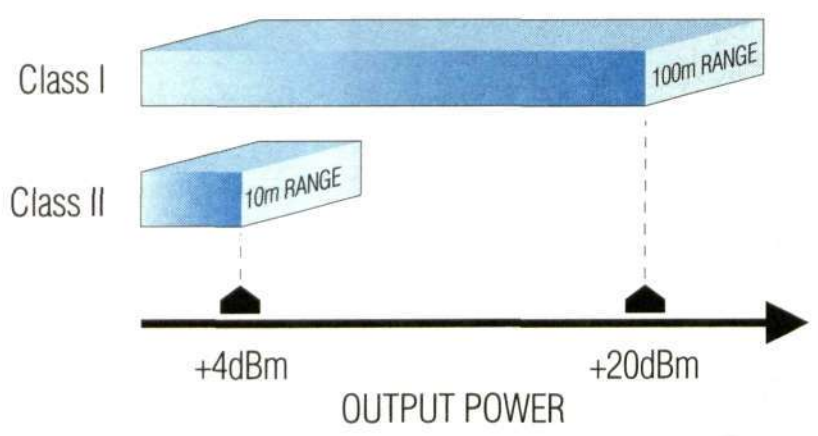

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Shelter Solution for faster installation

Speed is a key concept in the telecom industry, particularly in the startup of new systems. With 3G systems, especially, speed is crucial. Ericsson Radio Systems in Stockholm has developed the Shelter Solution, a solution that permits rapid, easy system installation, and also extension.

This is what it looks like, the base-station housing module that is to be used, with local variations, in all Ericsson markets. Gathered in the door opening are some of the people in the project that developed this Shelter Solution: from top to bottom, Per Thell, Jonas Schmidt, Anneli Nogelius and Ulrika Lindelöf.

Photo: Per Nordahl

➤ About a year ago, Ericsson launched a project to develop a type of base-station housing that could be used in all Ericsson markets, with certain local variations. This is the Shelter Solution and it is compatible with all of Ericsson's mobile standards.

To date, different countries have had different solutions for base-station shelters. In the US, for example, the shelters are made of concrete, in Sweden, steel, and in South America, aluminum. Many customers have opted to have the housing constructed on site.

The variety of solutions has made it difficult for Ericsson's local companies worldwide to offer quality guarantees. Having different solutions for different countries is expensive and time-consuming.

Partner sought

Time is of the essence where 3G systems are concerned. In order to obtain their license, the operators generally commit themselves to a rapid system startup.

"We have produced specifications, and are now seeking a global partner that can develop a basic housing module that can be easily adapted for different countries. We are hoping to announce our choice during the winter or spring season," says Björn Åkesson of the GSM, TDMA and Edge systems business unit.

It is important to find a global supplier, since the aim is to produce the modules in several countries. Together with the mast, the antenna and other equipment, the basic module, which is to be produced in four sizes, will form a shelter solution for base stations. The major advantage here is that all the equipment, including the base station, is tested and can be placed inside the housing module and shipped directly to the customer.

Local adaptations

It is frequently complex and time-consuming for operators to find new installation sites. Building permits are often required, and the bureaucratic hurdles can be formidable in some countries. Being able to extend a network by using existing sites is, consequently, a major advantage.

The shelters are fitted with equipment at the integration centers in Sweden, the UK, Spain, Turkey, the US, Brazil and Argentina.

"The requisite local adaptation is carried out here, using the expertise of Ericsson's local companies," says Jonas Schmidt of the GSM, TDMA and Edge Systems business unit. As an example of local adaptation, he mentions the shelters with extra reinforcement that are required in areas such as South America on account of the earthquake risk there.

"It's an enormous advantage to be able to extend mobile systems quickly by installing further base station cabinets. The modules are sufficiently large to contain both a GSM and a WCDMA base station," explains Per Thell of the business unit for WCDMA and PDC systems. He also points out that with its Shelter Solution, Ericsson is selling system solutions and not merely "boxes."

In addition to the startup of new networks, the solution is also ideal when a system must be installed very rapidly – for example, following natural catastrophes. A third application is as a temporary solution for events such as trade shows and sports events.

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Special marketing guide

➤ The Development Consultants Program is a training program for Ericsson employees in their 30s. The program includes practical work in various projects.

Ulrika Lindelöf and Anneli Nogelius have completed the program, and one of their project assignments was to prepare a marketing guide for the RBS Shelter Solution (RBS = radio base station).

"In addition to a brief presentation of the component products, we point out the solution's advantages to customers and how it ought to be positioned relative to Ericsson's other solutions.

By using the RBS Shelter Solution, operators can quickly launch a new system and gain market share," they explain.

Ulrika Lindelöf and Anneli Nogelius have also produced the business cases that support the solution.

Gunilla Tamm

Note: All of Ericsson's key account managers will receive a copy of the marketing guide. For further information about the marketing guide and the business cases, contact Björn Åkesson.

For decades, India has lurked in the shadows of the global economy, an inward-looking and inscrutable democratic giant. But a new era is just around the corner. It's the same picture everywhere: newly dug ditches line bumpy roads. Along Olof Palme Avenue in New Delhi and many other streets in India, the ditches are being filled with colorful hoses – plastic tubes encasing the optic fibers of a digital infrastructure.

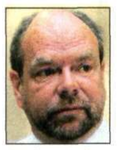
India emerges from the shadows

➤ Every year, India produces 120,000 engineers, and provides computer training for almost a million others. Most are swallowed up by the now-famous Indian software industry.

It is not difficult to find competent English-speaking labor in a country like India, although it is a third-world country.

Anyone with any knowledge of India knows that the subcontinent has always had enormous potential without managing to take advantage of it.

The construction of a digital infrastructure is the visible sign of a change that can eventually give India well-deserved wealth. Already, almost ten percent of the country's exports are from software production. In only a few years, the figure will be over 30 percent, but this will require a strong infrastructure.



Jan Campbell

"It's already under way," says Jan Campbell, head of Ericsson's operations in India.

"All types of capacity are growing vigorously – wireless telephony, wireline telephony, broadband and the Internet. And activity is increasing among the carriers of this traffic – that is, the actual backbone capacity."

India undoubtedly has the potential to become the largest market in Asia, second only to China, the other giant of the region.

It is not difficult to find statistical support for the claim. The population exceeds a billion and GDP growth is over five percent per year, a rate that IT could boost to the two-digit figures that the Asian tiger economies (Taiwan, South Korea, Malaysia, Hong Kong and Singapore) had before the stock-market crash of 1997.

At the same time, the contrast with China is striking, particularly in telecom. India has almost twenty mobile operators, whereas China has two. The number of mobile subscribers in India is three million, whereas China has 85 million.

While India has one of the largest wireline networks in the world (27 million according to BIS Shrapnel), penetration is among the lowest, due to the enormous population – 2.7 fixed-line telephones per 100 Indians.

Do not be fooled by the drastic gaps presented in the statistics, however. In reality, India consists of a huge rural population and a more well-off group of about 200 million, about the same size as the American middle-class.

"India has no middle road. It's basically impossible to talk about middle-class values," says Jan Campbell.

"There are many poor people and there are rich people. There are extremely poor states and there are rich states. Certain states – for example, the region surrounding Mumbai (Bombay) – are growing at a rate of ten to twelve percent in GDP, whereas other states are not growing at all. That's how great the differences are," says Jan Campbell.

The gap between rural and urban areas is also apparent in mobile telephony.

"Yes, there are great differences in degrees of penetration, but growth is generally strong and, above all, better than before. The fastest-growing centers are Delhi, Mumbai (Bombay), Calcutta and Chennai (Madras) – that is, the big cities. Growth is also vigorous in Hydrabad and Bangalore.

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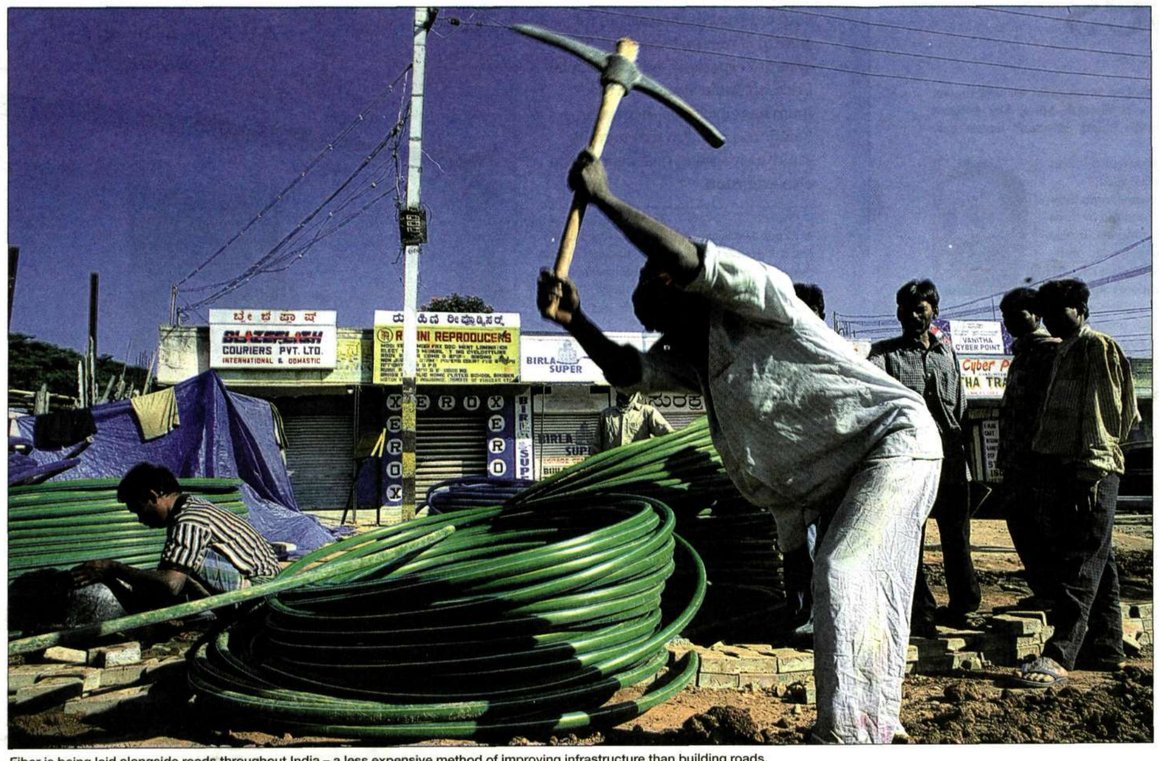
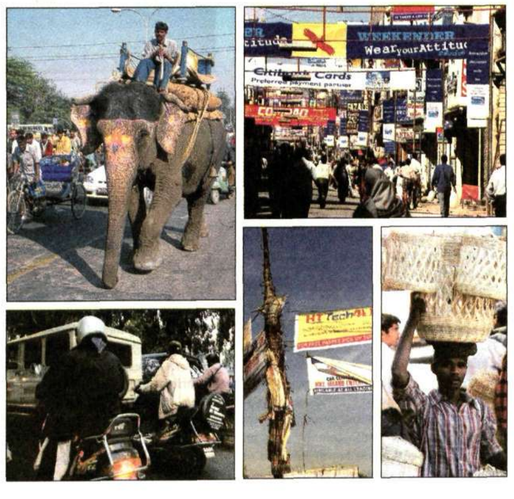
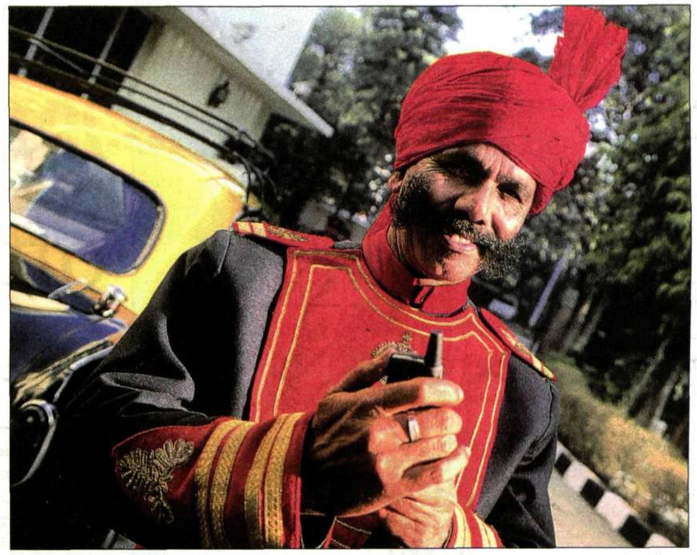


Fiber is being laid alongside roads throughout India – a less expensive method of improving infrastructure than building roads.
Photo: Lars Åström



FACTS/ERICSSON IN INDIA

- Ericsson's net sales rose 35–40 percent in 2000 from a relatively low level, and the forecast for 2001 is continued strong growth.
- Mobile systems account for the lion's share. Of 41 GSM networks, 19 were delivered by Ericsson.
- There are also sales of MINI-LINK switches for both wireless and wireline telephony, mostly for international traffic. In addition, Ericsson has delivered 1.3 million fixed lines.
- In data communications, Ericsson sold Tigris Multi-Service Access Platforms.
- R&D centers in Bangalore and Hydrabad design OSS (Operating System Software) for Ericsson's hardware.



Mr. Singh, doorman at Claridges Hotel in New Delhi, is very interested in an Ericsson R320. The penetration of mobile phones is low in India, but if the market is permitted to grow, the potential is enormous.

India – a complex but promising market

Ericsson made some heavy investments in 1995 when GSM was introduced in India. However, the expected growth never occurred. Now, with the current consolidation and rapid growth of the market, there is a second chance.

➤ GSM was launched in conjunction with the introduction of India's new telecom regulations, the National Telecom Policy (NTP).

"This was the first time the government opened the telecom sector for private ownership and competition. Licenses were distributed by means of auctions. The success of mobile operators worldwide produced a hysteria that made licenses extremely expensive," explains Jan Campbell, head of Ericsson in India.

New regulations

Apart from the expensive licenses, operators paid an annual fee that increased every year, in addition to higher interconnect charges.

"When the market was not growing because of the expensive licenses, operators could not invest in infrastructure. As a result, it was difficult for them to attract subscribers. It was an impossible business situation," says Jan Campbell.

Consequently, the market slowed to a standstill, and many operators refused to pay the license fees, since they simply could not afford them. In 1999, the problem was resolved by new regulations. The operators reached a settlement with the government. Moreover, a new model was introduced, involving license fees based on a certain percentage of the operator's revenues – that is, 10–15 percent depending on license type.

Reasonable prices

"From having had an impossible business model, operators now have a workable license system with reasonable tariffs. People can afford to buy mobile phones and the market is growing at quite a different pace than previously," Jan Campbell relates.

The system for license distribution is complicated, since India is actually a continent consisting of 25 member states, all of which enjoy a large degree of self-government.

The 1994 regulations divide India into 21 regions which, with a few exceptions, correspond to the political states. The regions are grouped in three categories – so-called A, B or C circles – representing geographic areas. Two licenses are available for each circle, making a total of about 40 mobile licenses.

In addition to the circles, there are "metro-licenses" for the large cities. To further complicate the scenario, a third license has been distributed to state operators MTNL and VSNL to cover Bombay and Delhi as well as the entire nation.

The A circles and the metrocircles cover the most densely populated areas and are the most lucrative. Growth is also increasing in the B circles, however.

The number of operators is currently being reduced by a consolidation process described, by Rajeev Chandrasekhar, president of operator BPL, as a matter of "buy or be bought. There is no other option."

The number of players will be reduced to four or five – probably, Bharti, Birla/AT&T/Tata, Hutchison/Essar (the Orange brand name), BPL and Reliance.

The authorities have also opened up for competition in national long-distance traffic, and there will be four to five operators, most of which are already mobile operators. They will build and extend backbone networks for wireline and wireless networks, as well as for data traffic.

Rapid development

Despite the changes, Jan Campbell does not think it is difficult to keep up.

"A few years ago, there was absolutely nothing happening in India. Now, things have speeded up considerably. In fact, private operators would like to see a slower pace. They are saying they have enough competition, thank-you very much."

Jan Campbell also thinks Ericsson's position is excellent.

"We have a strong presence in wireless networks and a solid platform in wireline networks, particularly with the state operators. We are very well positioned to grow with the market. Moreover, our portfolio well matches many of these basic requirements. Even the Multi-Service Networks' Engine concept has a place here."

Mats Lundström

If the 1980s belonged to the Asian tiger economies, and the 1990s to China, the first decade of the 21st century may well turn out to belong to India. Foto: Lars Åström

Operators often family businesses

Ericsson is a dominant supplier of mobile systems to many operators in India and has 40 percent of the market. Its largest customers are Bharti and Birla.

➤ Most operators are owned by well-known conglomerates. Often family-owned, their empires grew while India was closed for imports. One example is Tata, which has interests in almost all industries, including telecom. Moreover, foreign companies are required to have local partners.

With the rapid consolidation of the market, Ericsson's organization is also changing.

Ericsson's organization currently includes Key Account Managers for five of the largest customer groups – Bharti, with a market share of 15 percent, Birla/AT&T/Tata, 5 percent, Hutchison/Essar, 25 percent, Reliance, 4 percent, and such state-owned operators as VSNL and MTNL.

Ericsson has high expectations regarding future contracts with Hutchison/Essar, although the real breakthrough has not yet arrived. Through acquisitions, Hutchison/Essar has become the largest player in the Indian market.

Bharti and Birla have also been involved in takeovers of smaller players. The scene is changing quickly.

"This process is essential for real market growth," says Bhargab Mitra, Key Account Manager for Bharti, Ericsson's largest customer.

Bhargab Mitra

"Bharti is a typical Indian operator," he adds.

"It is owned by an Indian family and run by three dynamic brothers. It also has strong foreign partners, namely, the UK's BT and Singapore's SingTel."

Bharti acquires smaller players to attain more cohesive geographic coverage.

Compared with foreign mobile operators, Indian operators are small. Bharti, for example, has about 500,000 subscribers.

Market growth is robust, however, and mobile operators are expected to double the number of subscribers in 2001 to almost six million.

Bhargab Mitra foresees new opportunities, since Bharti recently obtained a license for long-distance wireline telephony.

"Bharti will also lay sea cable between Chennai (Madras) and Singapore, in cooperation with SingTel, at a cost of USD 600 million. When complete, the cable will provide the world's largest bandwidth," says Bhargab Mitra.

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Gray import impedes control

Marketing Ericsson consumer products in India is not that easy.

"We have the brand name, but we're not selling any phones," says Ranjivjit Singh, who is in charge of consumer products and marketing for Ericsson in India.

The reasons is "gray import."

➤ The importers take the morning flight to Singapore. They buy up a load of telephones, ditch the packaging and pack their suitcases full of them. They fly back the same evening, and the phones are on the market in India the very next day.

It is called gray import, and ten percent of all mobile phones are sold in this way.

"All marketers will tell you their own market is special. But this really is special, and it's also very typical for the Indian situation, says Ranjivjit Singh, laughing.

"Naturally, we have nothing to do with that. We sell through our established distributors. What we call the 'gray market,' however, has excellent distribution channels."

Subscriptions and telephones are usually sold separately. Usually, subscribers purchase their telephones elsewhere. Gray import is not about stolen phones. The revenues do flow through to Ericsson, though by a more circuitous route.

The phones are imported through, for example, Singapore or Dubai, outside the control of government authorities.

Ranjivjit Singh

"Our marketing promotes not only our own distribution – it also promotes gray import," says Ranjivjit Singh.

It is expected that 1.5 million cellphones will be sold in India this year. Ericsson's market share is ten to twelve percent, after Nokia and Motorola.

Just as with infrastructure, India offers vast potential for terminals. The segment is challenging and the market needs simple, inexpensive phones, since most customers are first-time buyers.

The cause of the gray import is an import duty (5 percent) and a surtax (22 percent), designed to stimulate possible local manufacture. The total tax is thus 27 percent.

On February 28, the Indian government will decide whether to reduce this tax as it has already done in the case of computers and software.

Ranjivjit Singh is hoping very much that there will be a tax cut.

"It's only a matter of time before things loosen up," he says.

Mats Lundström

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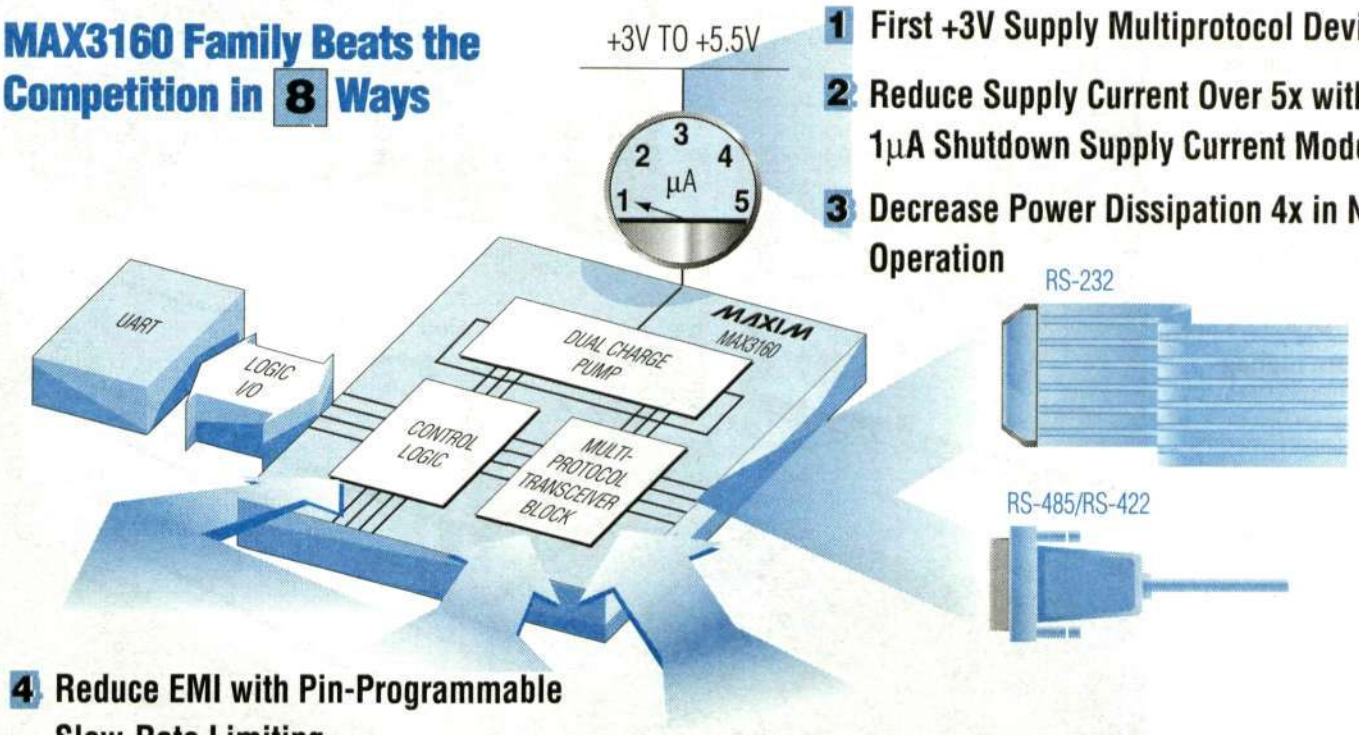

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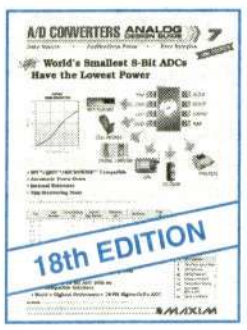
MAX3162	Dedicated 2Tx/2Rx RS-232 and 1Tx/1Rx RS-485/RS-422	256	28-pin SSOP



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Fewer

As part of the Time to Customer Global program, Ericsson is working to improve the precision and efficiency of its deliveries. The program will be key to Ericsson's success as a 3G supplier.

"Our two most important goals are to increase customer satisfaction and reduce delivery chain costs," says Lars-Göran Hansson, program manager for TTC Global.

➤ For 3G operators, it will be important that they quickly get traffic moving through their networks. Even for established operators, it will be imperative that they rapidly make their systems operational and start receiving a return on their investments, which total in the billions of dollars. Suppliers who are able to make fast deliveries will be the ones to receive their confidence.

The effect of the TTC Global program is to reduce lead times and increase accuracy, resulting in customer confidence for Ericsson. Moreover, the program will result in lower costs and less tied-up capital for the company.

Lars-Göran Hansson

"Currently, Ericsson has some shortcomings, in terms of both delivery competence and consistency. In order to address these problems, it is important that we have the whole picture. In order to improve our delivery chain, we have to be able to see how it affects the overall picture – from the silicon mine to the satisfied customer," says Lars-Göran Hansson.

Product standardization is an integral part of TTC Global. It involves ordering equipment that is delivered in packages that are assembled according to certain characteristics. Customers no longer need to submit a long order list; instead they order equipment based on the characteristics it is to have.

"Product packaging is a completely new way for us to look at our products. Customers order products according to functionality. It's the same principle as when purchasing a car. We don't sit there and specify what kind of brakes or tailpipe we want. We buy a car according to its characteristics and appearance," says Lars-Göran Hansson.

TTC Global encompasses all divisions except for Consumer Products, which already operates a similar program. With TTC Global, internal and external customers order products directly through Flow Control Centers (FC). There are currently 13 FCs around the world and they have total responsibility for handling orders and logistics. When an order is received, they place the necessary orders with subcontractors, helping Ericsson keep its inventory, both locally and centrally, to a minimum. Deliveries are shipped directly to the site from the FC.

Another central aspect of TTC Global is e-business. Using an Internet portal, customers can easily order a product and follow its progress during delivery. Currently, some 18 market units and a handful of customers place orders directly over the Internet.

"In the future, our customers will be able to use a WAP phone to order product packages."

Jesper Mott
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Photo: Leif Jäderberg

The first direct Flow Control Center delivery was sent from Gävle in Sweden to Germany almost two years ago. Developments since then have occurred rapidly. "It's no longer about making deliveries on the right day, but rather the correct hour of the day," says Jan Enbom, FC driver for TTC Global in Gävle. Pictured is truck driver Henrik Haglund preparing a delivery at the Gävle plant.

Flow Control Centers (FC) form the core of a delivery chain that is being built as part of the Time to Customer Global program. The FCs coordinate contacts with suppliers, customers and local companies, shipping equipment directly to installation sites.

Precision deliveries

➤ There are 13 Flow Control Centers in various locations around the globe. Both Gävle and Lynchburg have experience with this new method of overseeing deliveries. The first direct delivery from an FC was shipped from Gävle in Sweden to Germany in May 1999.

Since then, the routines and tools used have been refined. Jan Enbom is FC driver for TTC Global in Gävle. He explains how, in the past, customers would specify a date on which they wanted their shipment to leave Gävle.

Today, a specified delivery date indicates the day when a shipment should arrive on site. Since inventories at local companies are disappearing, greater precision is required when it comes to delivery times.

"It's no longer about making deliveries on the right day, but rather the correct hour of the day," says Jan Enbom.

Inventory reductions have resulted in an increase in the number of orders to FC's.

"While the workload associated with orders has increased here, to avoid increased costs in the delivery chain, local company workloads should decrease just as much, if not more, than the extent to which the workload is increasing here," says Jan Enbom.

In the past, TDMA equipment going to customers in the US was delivered from Lynchburg. Since April 2000, Lynchburg has operated as an FC and today supplies equipment to customers in the US, Canada and Mexico.

Better planning

"Major improvements have occurred in order handling," says Cecilia Hellstadius, head of business development in Lynchburg.

She explains that only five percent of deliveries arrive later than anticipated. Contacts with subcontractors have improved and close cooperation with both local companies and subcontractors has resulted in better advance planning.

"Our goal for 2001 is to reduce delivery times to 16 days for standardized packages," says Cecilia Hellstadius.

Jan Enbom explains that the short-term goal in Gävle is a delivery time of 13 days within Europe and 18 days outside Europe. In the future, the demand for speed will result in even shorter delivery times.

Jan Enbom explains that a shared business application system plans a key role in building up operations at Flow Control Centers. Such systems make it possible to generate distribution orders – which are sent to the companies that carry out the deliveries – immediately after a customer's order has been registered. This allows more planning time for the companies that handle air freight, for example.

New business system

Within TTC Global, the SAP R/3 business system is used. In Gävle, they expect the system to go online during the coming month, and that the 3G products will be the first products handled using SAP R/3. Such a system has been in place in Lynchburg since 1998.

In most cases, FCs are focused on deliveries of certain kinds of products. The exceptions are the FCs in China and Brazil, which are instead focused primarily on their domestic markets. This is due to local laws and regulations in those countries.

Jesper Mott

Packaged products lead to global standard

Time to Customer Global was initiated in January 1999. Since then, pilot projects in Germany, the US, Japan, the Netherlands and the Nordic countries have demonstrated that TTC has lived up to expectations.

During the past year, the focus has been primarily on Western Europe and the US. Now it is time for a wide scale rollout of TTC Global.

➤ "The delivery situation over the past year, which included a component shortage, has made a general rollout more difficult and generated doubts. Now that the situation has stabilized, we have the opportunity to increase the pace of implementation," says Lars-Göran Hansson, program manager for TTC Global.

"We know that the concept is sound. Now it's time to roll it out in the line organizations."

What sort of goal is there regarding lead times?

"Our goal with lead times is to increase customer satisfaction. We plan to be able to receive orders, manufacture the product, and deliver and install it between 15–35 days, 90 percent of the time."

If Ericsson's warehouses are being eliminated, won't they just expand among the subcontractors instead?

"Our goal is to not have any local inventories at all. Of course, that's not always feasible in reality, and there are certain components we have to keep in stock, so in some cases they will just be pushed down the delivery chain. Flow Control Centers have an important role to fulfill in achieving this goal, planning work and informing subcontractors about which components will be needed over the short and long term. At the same time, it's important that Flow Control Centers and marketing units have good collaboration and trust each other in order to achieve good advance planning," explains Lars-Göran Hansson.

Why has it taken until now for Ericsson to standardize its products?

"By having standardized products available in package form, we can focus on delivering products in a fast, cost-effective manner. In the past, technical systems and hardware was expensive to manufacture. It was profitable to create unique solutions with exactly the capacity that was required.

"Today, it is not the hardware that is expensive, but rather designing unique systems every time something is delivered. These days, operators want the ability to quickly upgrade their hardware and software. Using standardized product packages, we can meet our customers' needs for fast, flexible upgrades."

What are the consequences of personnel reductions associated with TTC Global?

"TTC Global will streamline much of the routine work that we currently perform, which means that affected employees will be able to add value to Ericsson in other ways. With the arrival of 3G, we will need more employees, but with the relevant expertise – I strongly believe in Competence Shift. Although there might not be room for everyone in the future, we are good at ensuring that people find challenging and meaningful work, both within and outside Ericsson."

Looking ahead, what do you think TTC Global will mean for the future of Ericsson?

"TTC Global means that our customers will find an Ericsson that operates in the same way around the globe. We will be able to provide our customers the same processes, the same lead times, the same high levels of precision and a clear and distinct product portfolio, regardless of where in the world they are. It is this kind of uniformity that characterizes a global company and Ericsson plans to be one," says Lars-Göran Hansson.

Jesper Mott

TTC Global paves way for global contracts

The ability to be able to order products in the same manner, wherever and whenever, under the same conditions, is the foundation of the global delivery contract that Ericsson and Vodafone Airtouch signed in 1999. A prerequisite for that to work is the implementation of TTC Global.

➤ As far back as spring 1996, the concept of a global delivery contract with Vodafone was raised, with Ericsson demonstrating how the delivery chain could be simplified through product packaging.

"We have a general agreement with Vodafone that specifies guidelines regarding products and prices. That general agreement will also be supplemented with local delivery contracts," explains Christer Jungsand, head of Supply Management at the GSM, TDMA & Edge business unit.

"Time to Service" is the name of the project that Ericsson and Vodafone are conducting together, with Ericsson's TTC Global program playing an integral part. The Dutch mobile phone operator Libertel, in which Vodafone has a majority interest, has made great progress using the new system for placing orders.

"It has resulted in half as much administration pertaining to deliveries, for both us and the operator," says Christer Jungsand.

He explains that Ericsson has been in discussions with other large customers who have, or are in the processes of acquiring, global operations. It is likely that within two years, the company will have global delivery contracts with between five and ten operators. As major operators become increasingly global, the need for global delivery schedules will also increase.

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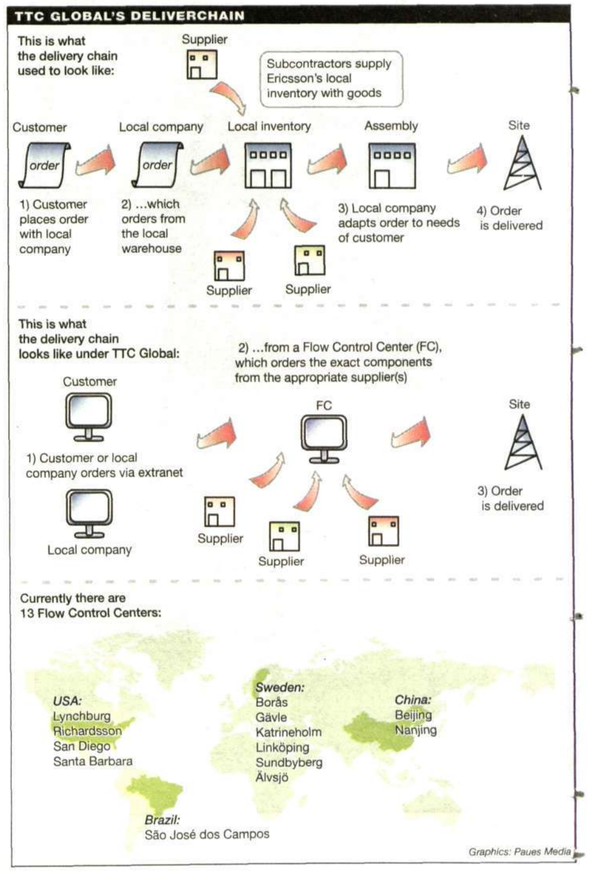
TTC GLOBAL'S DELIVERCHAIN



More rapid installation

For more than a year, Ericsson in Rijen, Netherlands, has been working on TTC Global together with three operators – Libertel, Telfort and KPN. Most progress has been made in implementing TTC Global for base station products for Libertel, which has resulted in a dramatic change – delivery times are shorter, there is high delivery precision and the number of process steps have been reduced.

➤ "We're the main supplier for Libertel and have maintained good relations with the operator ever since it began its operations. This relationship has continued following Libertel's transformation from a startup to a successful company," says Arno Knoops at Ericsson in Rijen, who is Customer Manager for Operations involving supply, installation and operation of Libertel's GSM network.


Arno Knoops

"Right from the start, we began working as a team, and we continue to hold regular meetings," says Arno Knoops.

Both he and Kees Heessels, Market Unit driver for TTC Global at Ericsson in Rijen, cite Time to Service (TTS) as an important project that Ericsson and the Vodafone Group are conducting jointly within the framework of the TTC Global program. TTS involves putting equipment at a site into operation as quickly as possible, and involves the entire supply chain from ordering to operation, including customer activities.

One of the cornerstones of TTC Global is to deliver standardized products in packages. This also applies to 2G or GSM. According to Arno Knoops, 'it is in the customers' and Ericsson's best interest that we work according to TTC Global principles for 3G products. In fact, TTC Global is a prerequisite for quickly delivering systems for 3G.

Within TTC Global, Ericsson in the Netherlands is working with three clients – Libertel, Telfort and KPN – the latter being the Netherlands' largest GSM operator.

"When it comes to working in accordance with TTC Global, we've made the most progress with Libertel. Business procedures at both Ericsson and Libertel are in line with each other and TTC has eliminated a lot of process steps, which of course, simplifies matters," says Kees Heessels. "Parallel to this, perseverance within the project group at Ericsson in Rijen, as well as at Libertel, strongly influenced the results of the successful TTC implementation and excellent cooperation between the two made it possible to even get through the difficult issues," Kees Heessels underlines.

Now that Libertel is placing its radio orders directly with the Flow Control Center at the Gävle plant in Sweden, less ordering administration is required at Ericsson in Rijen. Kees Heessels is satisfied with the work that Ericsson in Rijen has done so far for the TTC Global program. After being conducted as a separate project, TTC Global will now be taken over by the line organization.

"The processes are in place; now they will be improved and reinforced, and we will be taking in more products," says Kees Heessels.

"Most people are familiar with the TTC abbreviation, but few know what it stands for or what it means for our operations. That's why this year we'll also be focusing on education," says Rana Krempel, internal communicator for TTC Global at Ericsson in Rijen.

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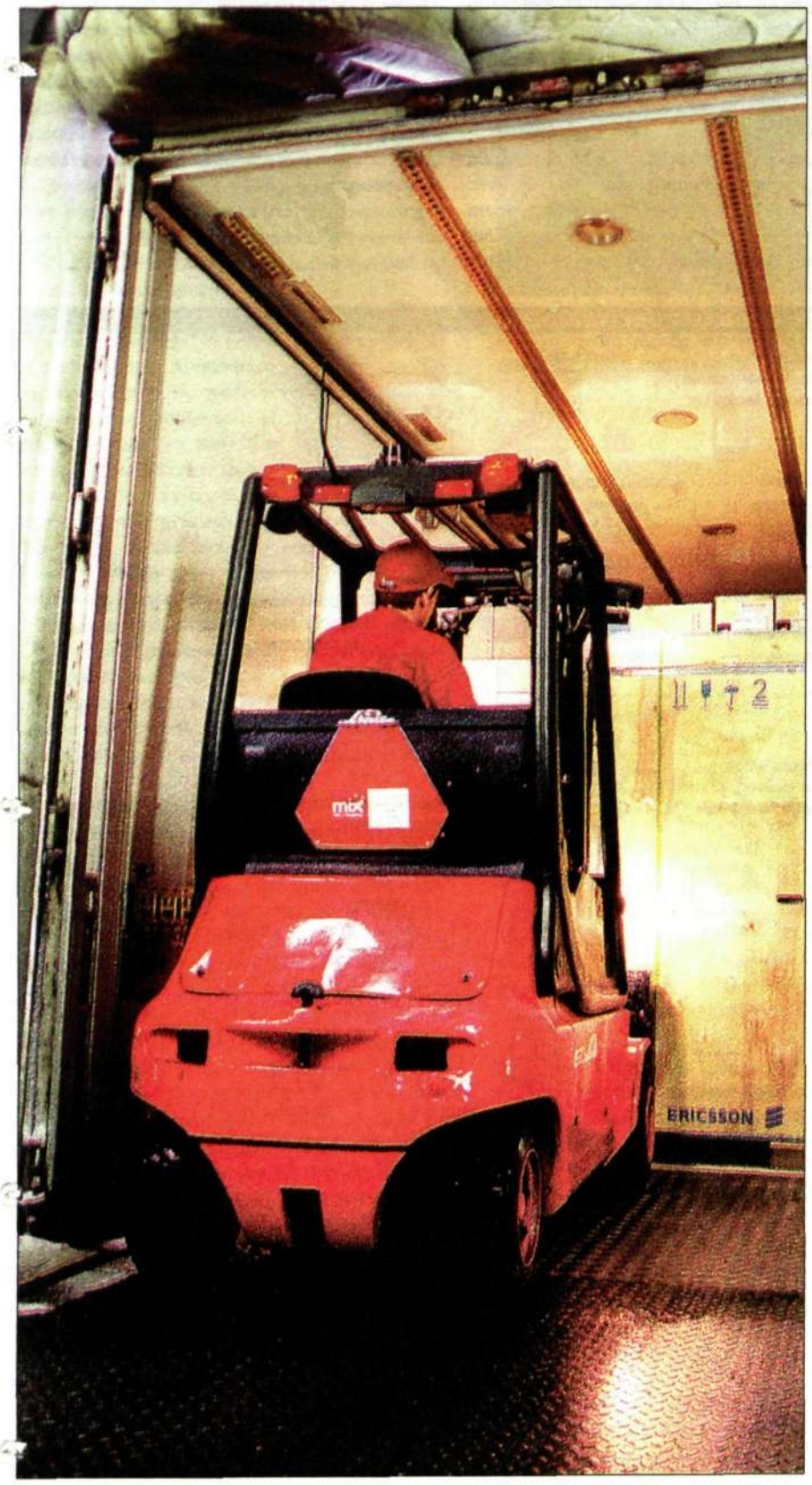

Base stations from Ericsson's plant in Gävle are delivered direct to Libertel – without first passing through an Ericsson warehouse. Photo: Leif Jäderberg

Libertel receives deliveries direct

Most of the radio product orders that Dutch mobile phone operator Libertel places with Ericsson are now made via extranet, with orders going directly to Ericsson's plant in Gävle.

This is the result of favorable collaboration between both companies on the TTC Global program.

➤ Armand Toonen, manager of Control & Process Management at Libertel, has been the driving force behind implementation of Ericsson's TTC Global program for the operator. He started working at Libertel in 1998, assuming responsibility for logistics, planning and finance within the site acquisition and construction process. Prior to that he held similar responsibilities at Philips.


Armand Toonen

"I brought valuable experience from that position, and although it involved different products, there is much that we can take advantage of here," Armand Toonen explains.

Two years ago, Libertel had a problem with unbalanced inventory and shortsighted supply solutions resulting in long delivery times.

More and more, Ericsson in Rijen, Netherlands, emphasized the importance for Libertel to supply them with reliable forecasts for how many base stations they needed.

"Since we really needed a simpler supply chain and shorter delivery times for base stations, we redesigned our logistics concept completely. At around the same time, Ericsson introduced its TTC Global program – so we were both working towards the same goal," says Armand Toonen, who adds that the collaboration is going very well.

Just about a year ago, deliveries of base stations from Ericsson's plant in Gävle started being shipped directly to Libertel without first being delivered to an Ericsson warehouse.

Armand Toonen explains that thanks to product packaging, most orders are now placed via Ericsson's extranet. Direct contact with colleagues at the Flow Control Center in Gävle works well. A clear result of this is the fact that delivery times for base stations have shrunk from between six and eight weeks to around two weeks.

"Now that 3G is almost here, it will be important to have the ability to roll out equipment quickly. We have laid the groundwork for that," Armand Toonen says.

"Even though we are in direct contact with the Gävle plant, we also maintain a very favorable relationship and open communications with Ericsson in Rijen. We're dependent on each other and share visions and strategies. Success for one means success for the other as well.

"The key is to think globally but operate locally, which is why contact with Ericsson in Rijen is so important. As a member of the Vodafone group, Libertel now has even more collaboration with the other operators within Vodafone, and can share its experience of TTC Global."

Gunilla Tamm

FACTS/**LIBERTEL**

Libertel is part of the Vodafone Group, with Vodafone-Airtouch owning 70 percent of the company. In March 1995, Libertel received the Netherlands' second GSM license and in September of the same year the system was put into operation. Since then, the number of subscribers has rapidly grown to encompass more than three million users today. Libertel has 3,500 employees, with headquarters in Maastricht in the southern part of the Netherlands.

Photo: Gunilla Tamm

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Acoustic echoes cancelled in Germany

In December last year, Ericsson's expertise in echo cancelling was put to the test in Germany. Thanks to a collective effort, a solution was found that met customer requirements and may now set the standard for how to handle acoustic echoes.

➤ It all began in October of last year. Germany had passed a new law prohibiting the use of mobile phones when driving unless the caller was using a handsfree headset. Several independent tests of speech quality in the various mobile networks published in the German press showed that D2 Vodafone, previously D2 Mannesmann, was not the best with respect to echoes from the phones.

Henning Buhr

"Because Ericsson was a major supplier of echo cancellers to D2 Vodafone, the operator then demanded fast improvements and arranged a meeting where we were given a chance to solve the problem quickly," says Henning Buhr, product manager for Mobile Crosstalk Control (MCC), Ericsson's software solution for cancelling acoustic echoes. The only other alternative was that Vodafone would choose another supplier.

More aggressive cancellation

Ericsson mobilized its forces. Together with Ericsson Research, the MCC product unit developed new algorithms that were tested by the design center in Nürnberg. The result was a significantly more powerful and aggressive echo canceller that reacted more quickly to echoes and could even handle the high-volume echoes present in cars.

Previous echo cancellers had been optimized for ordinary mobile phones and low-volume acoustic echoes, not for talking in cars. When a handsfree phone is used in a car, echoes are much stronger, since there are real speakers producing loud sounds and a microphone that is not close to the mouth, meaning that the speech signal is much weaker in relation to the loudspeaker sound. A good handsfree solution for cars eliminates acoustic echoes, but not all equipment is the same.

Unusually fast

Everything happened unusually fast. Normally, developing and fine-tuning algorithms and then implementing and debugging them takes considerable time. This time it took only a few weeks. And when Vodafone conducted new tests in December, they decided to order Ericsson's product.

"Solving this problem was a matter of survival for us," reveals Henning Buhr.

"Echo cancellers and speech codecs are high-volume products that generate a lot of money, and if we had failed, there was a real risk that we would have also lost Vodafone as a customer for our conventional echo cancellers," continues Henning Buhr.

"We expect to integrate the new software in our TRA R5B hardware platform for speech transcoding in April, and other speech codecs will also be upgraded over time."

Echoes are a common phenomenon in telephony and are normally not a problem unless there are large delays in the network, typically 25 milliseconds or more. Such echoes occur when signals are transmitted via satellite or when speech is encoded in modern digital cellular systems. Virtual IP networks make the problem worse.

There are two types of echoes (see diagram). One occurs in the connection in the local exchange when the signal is converted from digital to analog and from four to two wires. Here the signal always leaks somewhat, producing sound that is eliminated by echo cancellers located in the mobile switch. Independent tests have shown that Ericsson's own echo cancellers meet high standards in this area.

The other type is acoustic echoes from the mobile phone itself, often in the form of crosstalk from the speaker to the microphone. These echoes are not supposed to occur, but because not all mobile phones have echo cancellers, they must be handled in the network. The problem also becomes more pronounced with smaller phones.

Can be reprogrammed

"Because a call from one mobile phone to another is purely digital and therefore does not need to pass through the normal echo canceller, we chose to put our echo canceller in the speech codec, through which the signal always passes and which is located in the base station controller," explains Henning Burh.

Everything is done in software, meaning that a speech transcoder card can in principle be reprogrammed as an echo canceller. Both cases involve the use of powerful DSPs (digital signal processors) that, to a greater or lesser extent, are specialized for this function. To optimize the price-performance ratio, DSPs are developed that are specialized for their task.

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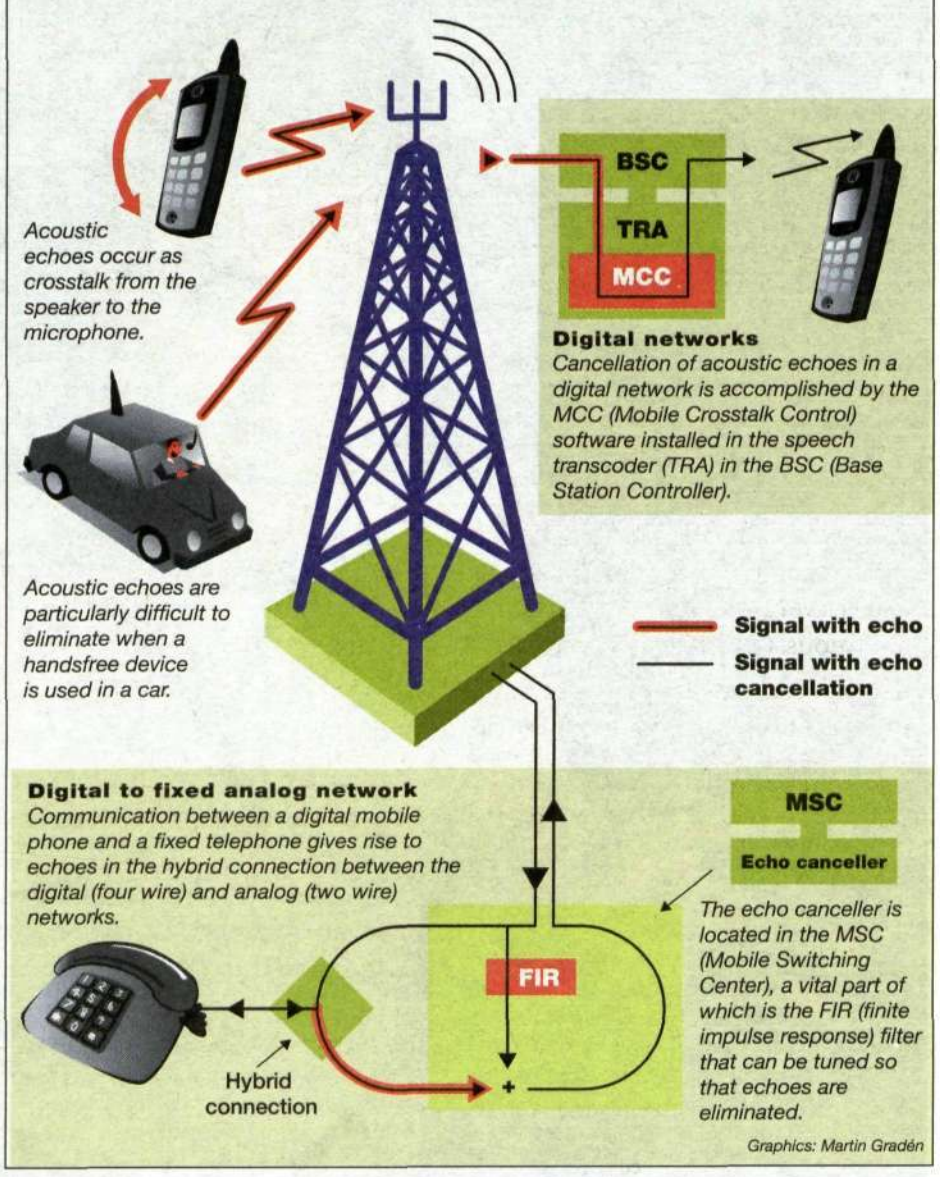
TWO TYPES OF ECHO CANCELLATION IN MOBILE NETWORKS



Graphics: Martin Gradén

Listening tests are an important feature in the design of an echo canceller. Here Serveh Khaledi is testing algorithms, which are optimized and then compiled into software that can be transferred to the signal processor on the circuit board. Foto: Anders Anjou

Codecs

➤ "We're probably one of the few units that can say that we're proud to have only a few employees. Demand is increasing, however, and we're going to need more people," says Tommy Svensson, manager of the product unit for speech codecs, video codecs and echo cancellers.

Coding of speech and video signals is necessary for efficient utilization of the limited frequency spectrum.

A core product unit consisting of about 300 persons with management in Kista works with products employing digital signal processing to encode speech and cancel echoes. Operations are also conducted in Nürnberg, Athlone, Jorvas, Katrineholm and, as of February, in Mölndal. All

Lars Persson, Anders Käll and their co-workers in the video coding unit are testing new technology in the lab at Ericsson Microwave Systems. Since the lab was opened nearly four years ago, they have produced many demonstrations, but now their work is focused on commercial product development.

Photo: Niclas Henningsson

Smart codes for moving images

Video is a very demanding application for wireless networks. Compression is enormous. Only one thousandth of the information from the video camera can be retained when wireless networks are used for moving images. This presents a major challenge for the software engineers working with video coding at Ericsson Microwave Systems in Mölndal, Sweden.

➤ As of February this year, the video coding team at Ericsson Microwave is a part of the product unit for speech codecs, video codecs and echo cancellers within the Mobile Systems division.

The team has a longer history, however. As early as 1997, when the development of Ericsson's first demonstration system for WCDMA was started, the software developers at Ericsson Microwave Systems were involved. Their task was to develop video services for the demonstration system and to compile expertise for future commercial product development.

"Our first demo was shown at CeBIT in 1999. Since then we have developed increasingly sophisticated version," says Lars Persson, who heads the unit.

A little more than a year ago, however, the group's focus changed. With the first commercial launches of WCDMA just around the corner, the group became more focused on commercial product development. A recently completed project involving terminal developers was the first step in this direction.

Video is one of the features that will attract subscribers to the next-generation of mobile networks. There are many application areas, including real-time video calls between two terminals or short new clips distributed through streaming video.

High capacity required

Adding video to the network is a major challenge. Available bandwidth is completely inadequate for distributing video in its original form. A large amount of information must be removed to match available capacity.

Digital video directly from the camera generates about 60 megabits of data per second. The most popular video services in 3G networks are expected to require a bandwidth of about 64 kilobits per second. This means that only about one thousandth of the original information can be retained.

Video contains 25 frames per second. If we play with the idea of discarding video frames to meet bandwidth requirements, video on a mobile device would show one frame every 40 seconds, This would not even be an acceptable slide show.

The solution is compression. This is where Lars Persson and his colleagues at Ericsson Microwave Systems enter the scene. In other words, the task of the video codec is to get rid of information. This must be done intelligently, however, to produce acceptable results. Using intelligent coding methods, the amount of information can be reduced dramatically without unduly compromising image quality.

"All compression is based on limitations in visual perception," explains Lars Persson's colleague Anders Käll. Examples include perceiving details in fields of color and in moving objects.

Only the difference is transmitted

The first thing that happens is that color resolution is reduced. This reduces bandwidth requirements by about half.

The next compression method exploits the fact that there are normally few changes between adjacent frames in a video stream. By transmitting only changes and retaining information that does not change, bandwidth requirements can be further reduced.

"Motion estimation is the key to achieving a high degree of compression," relates Lars Persson. "The method is based on re-using parts of the image. If I move my hand, for example, the entire image moves with the hand, and the only information that needs to be transmitted is the coordinates for the hand's new position."

Exploiting similarities

The third method used for compression is the same as that used for conventional JPEG images and exploits the fact that the information in adjacent images is very similar.

"Video coding is always a balancing act," says Lars Persson. "You can choose between high quality with fewer frames in the video stream or slightly poorer quality with a more rapid frame rate. What you choose is determined by the application. When mobile terminals are equipped with video, you will probably be able to choose the settings yourself, depending on the application."

Niclas Henningsson
Freelance journalist

maximize frequency utilization

development is coordinated by Ericsson Research, which is also the sponsor of various projects.

Signals in the fixed network employ pulse code modulation (PCM) based on a 64 kbit/s standard. In digital cellular networks, a speech codec is used to convert the signal into a significantly lower bit rate. Ericsson is the only supplier with speech codecs for all standards. The forthcoming AMR (adaptive multi-rate) codec will be supercharged with eight different codecs for several bit rates and standards.

"Our platforms for speech codecs and echo cancellers can be re-used for 3G services, such as video coding and streaming."

Speech codecs and echo cancellers are relatively expensive volume products that have a significant impact on Ericsson's bottom line. Previously one codec and one echo canceller were required for each channel. Recently, pooling has been used, meaning that the system can share a number of speech transcoders and echo cancellers. This reduced the number of units to 25 percent of the previous requirement.

Tommy Svensson

"In 1994, we set a goal of reducing our costs by 99 percent over ten years, and we're almost there," says Tommy Svensson with a smile.

"At the same time, we're working to improve speech quality. On measure of how we have succeeded in improving speech encoding is that today's R5 model can handle 24 channels on one card, while the forthcoming R6 version will handle 192. We can also report that we shipped about ten million channels of speech codecs and echo cancellers last year," concludes Tommy Svensson.

Lars Cederquist

READ MORE ABOUT ENCODING

Moore on speech codecs:
• Contact 14/2000

www.ericsson.se/SE/kon_con/k14_24b.shmtl

More on acoustic echo cancellation:
• Ericsson Review 2/1998

www.ericsson.se/review/1998_02/article37.shtml

At Work editor: Maria Paues, maria@pauesmedia.se, +46 8-665 73 99 CONTACT No. 3 2001

Right argument could bring salary increase

In the past, established salary schedules were based on the number of years of employment. Expertise, ambition and the market had almost nothing to do with wages. Today, we have individually set salaries based on a wide range of factors.

➤ "These days, salary negotiations are one of the most difficult tasks for a manager," says personnel manager Mona Finnström, who has experience of both the public and private sectors.

Wages are a sensitive issue. Asking someone how much they earn is almost taboo in today's society. Now that salaries are individually set, the subject has become even more sensitive.

Who, for example, should determine why one teacher is worth a larger salary than another? Should it be students, parents, colleagues or the principal who decides?

Correct salary

"These days we simply have to ask ourselves the question, 'What is the appropriate salary?'" says Mona Finnström, who has significant experience in salary negotiations.

She currently works as a personnel manager for Svenska Bostäder, a Swedish municipal housing company. At large companies such as Ericsson, wages are determined at a local level. Both a company's earnings and individual performance are used to establish salary baselines, which serve as minimum guidelines during centralized salary negotiations.

"In the end, it is the manager who decides how high a salary should be," says Mona Finnström.

Today, there are many factors that managers take into consideration.

"As an employer, you have to be conscious of who you have to pay. Cutting edge expertise, which is highly sought after in the market, and which could easily find employment elsewhere, needs to be compensated with higher salaries. People often consider that unfair."

"'Why does my coworker earn USD 1,000 more per month than I do, although we have similar training?' is something we managers hear a lot. In those instances, it's important that employees understand the factors involved in setting compensation. They need an answer to the question, 'What is it that determines my salary?'"

Position, expertise, degree of difficulty, personal performance and market value are all factors that need to be taken into consideration these days. This is true almost everywhere in the world.

Incentive packages

"It's important to look carefully at employees. It shouldn't be that the person who makes the most noise gets the biggest raise, at the expense of others who are shy. It's also important to take other factors into consideration, including what the actual salary increase looks like after taking inflation into account," says Finnström.

"Many companies, such as Ericsson, make an effort to pay competitive market salaries, without being salary leaders. Sometimes those salaries are not enough to attract cutting edge expertise. In those instances, the company has to sweeten the pot with options and bonuses in order to attract and retain desirable employees. Employee bonuses are directly related to the company's earnings."

It is not unusual for companies to offer a package of incentives in addition to a salary.

"These can include everything from a company car to cleaning help or health insurance," says Mona Finnström.

She believes that all employees should have one planning session a year, during which it is clearly spelled out what is required of them in order to receive a higher salary.

"Individuals should have personal development plans, just like Ericsson does. There is no such thing as a hopeless case; everyone should have a right to this. It should, however, be made clear that something extra is required in order to receive a salary increase."

Since the setting of nearly all salaries is subjective, the grandfather principle is often applied. This means that it is the manager above a person's closest manager who makes the final decision about salaries.

Cecilia Sandahl
freelance journalist

"These days, we simply have to pose the question: What is the appropriate salary? Often the grandfather principle is applied. The manager above your closest manager decides your salary," says Mona Finnström, personnel manager. Photo: Bror Carlsson

FACTS/**FIVE GOOD TIPS**

- Pose the question: "What can I do to earn a larger salary?"
- "I want to look at my strong and weak points in order to increase my salary."
- Make constructive suggestions, such as concrete ways to make savings in your workplace.
- Ask for a development plan for a longer period of time. Inquire about training or perks other than salary.
- It is important to remain a desirable employee. Demonstrate that you have not lost your enthusiasm, improve yourself. Take responsibility and find a balance in life between work, family, rest and leisure time. Learn how to say no.

FACTS/**ARGUMENTS YOU SHOULD AVOID**

- "You are paid so much. I should have more."
- Do not make comparisons to the salaries of co-workers.
- It is irrelevant to point out how much you earn after taxes.
- "I'm going to start paying off my loan," or "My rent has gone up, I need a larger salary." It is not appropriate to refer to one's private finances.
- "If I am not paid a larger salary I'll quit." Making threats seldom pays.

Emy-Anne Mattinson, a graduate engineer, and Anders Ödman, an economics and business studies graduate, are two young Ericsson employees who believe that salary levels are important. However, development opportunities and the chance to work abroad for long or short periods are also quite important.

It pays to be bold – and well prepared

➤ Engineer Emy-Anne Mattinson, age 29, carefully prepared herself prior to her first salary negotiation with Ericsson.


Emy-Anne Mattinson

"It's important to get a good salary right from the start," she says.

In 1998, Emy-Anne Mattinson completed her materials technology engineering degree at the Royal Institute of Technology in Stockholm, and wrote her degree project at Queen Mary and Westfield College in London.

She then spent two years at the Swedish Institute for Metals Research before pursuing other employment. She wanted to work for a large company, which she felt would offer more opportunities for development.

"Ericsson has a good reputation, both in terms of training and opportunities for working overseas," says Emy-Anne Mattinson.

When Contact met her, she had been employed at Ericsson for two months.

"Your first salary negotiation is with the central human resources office. I conducted thorough research in advance. I found statistics on the Internet and checked with the Swedish Association of Graduate Engineers as to what a reasonable salary should be. I also talked with friends and found out where they were on the pay scale at Ericsson."

"The Swedish Association of Graduate Engineers keeps track of the major companies, but if you want to get exact figures, you have to turn to people who work at the company in question," says Emy-Anne Mattinson.

"I've come to understand that there are unofficial guidelines, but no exact amounts. Rather, that is left up to individual salary negotiations. It's important to thoroughly investigate and try to obtain an understanding of the area where you intend to work.

"It is also a good idea to call managers other than one's own, as well as other employees, in order to gain better insight. It's vital that you come well prepared."

To get exact figures, you have to turn to people who work at the company.

Emy-Anne Mattinson was interviewed by both her manager and the human resources director.

"I answered all the questions truthfully. It's important that I fit into the position that I'm applying for as I am. I'm satisfied with the salary that I received."

At Microelectronics Power Modules, where she works, development discussions are conducted regularly. Moreover, there is time each week set aside so that employees can meet with their manager.

"It's important, from a salary negotiation perspective, that you know what is important," says Emy-Anne Mattinson.

"In the future, I would really like to have economic training to complement my skills. If you take the initiative, there are some very good training programs available at Ericsson, which are advantageous for salary development."

Other benefits, such as free healthcare, health club and theater ticket discounts, are also very important to her.

As a new employee, she recommends that people continue to keep themselves informed about the labor market and current salaries.

"It's good to apply for new jobs every year, even if you don't plan on switching, so that you keep your CV up to date and yourself challenged."

Cecilia Sandahl

Benefits and leisure important

➤ "In order to get a good salary, it's important to distinguish yourself and demonstrate that you can really achieve something. You also have to be somewhat clever," says Anders Ödman, age 28.


Anders Ödman

He does not, however, only place value on achieving a high salary. Leisure time is equally important – having time for family, friends and his big recreational interest, golf.

Anders Ödman explains how his mother had the opportunity to work in the US for a couple of years. The family moved from Gothenburg to New Jersey. During that time he enrolled in college and ended up staying in the US for seven years.

"I've benefited greatly from those years. School over there is not as fact-oriented as it is in Sweden. During the course of a semester at college, you can study such subjects as public speaking. This helps a person overcome shyness and really learn how to stand up in front of a group and conduct a presentation or convey important information, regardless of how difficult or embarrassing it might feel in the beginning."

"We learned to be self-confident and bold. These skills can be useful in many situations, particularly salary negotiations."

Following his years in college, Anders Ödman carefully mapped out his career.

"I was the first Swede to attend the Ericsson Financial Development Program. I received my trainee education in the US, and felt that it would be useful to bring back those experiences with me to Sweden."

"Ericsson is a company with an excellent reputation in the US. Although Ericsson pays slightly lower wages than other companies, you usually receive an extra week of vacation and you are provided with good insurance. And the company also helps employees save for retirement. The company matches amounts saved of up to 5 percent of an employee's salary. That is an outstanding salary benefit," says Anders Ödman.

He believes that various benefits will become increasingly popular in the future.

"While salaries are, of course, quite important up to a certain point, there are other significant aspects of life that also have a bearing, such as how much leisure time you have. No doubt other benefits – such as cleaning help, free mobile phones, company cars or daycare – can be more useful than higher salaries."

"While I have a good salary, I don't spend huge amounts of money. For me, it's important to have time for my family, friends and my big hobby, which is playing golf."

Anders Ödman explains that senior employees within a company often have performance-based salaries.

"I think that every employee should have the option of either having a certain percentage of their salaries fluctuate, based on individual and company performance, or having a fixed salary."

Oh my, now I'm revealing all of my tricks

With his somewhat unusual training Anders Ödman was well received in Stockholm when he began his new job in August 1999.

"I was involved in starting up an intranet function, where we created an information center – a huge network where we mapped out which Ericsson employees could answer the questions of coworkers. Employees register their questions on our forms and we solve as much as we can ourselves, sending the rest out on the expertise network," says Anders Ödman.

Six months later, they were contacted about creating a similar service for the external website. In other words, helping the general public with questions about Ericsson. Anders Ödman was asked if he wanted to be the project manager.

"I saw this as an opportunity for me to gain more interesting job responsibilities and to increase my salary. You have to assume some responsibility in order to advance. In fact, I received a significantly better salary offer than I had anticipated.

"I mulled over the offer for a period of time, in order to make it seem as though I was difficult to win over, although I was very satisfied. Oh my, now I'm revealing all of my tricks." he says.

Cecilia Sandahl

Male fragrances win the day

»» Make sure that you sport a manly aroma of aftershave when you go to a job interview, regardless of whether you are a man or a woman.

That is the recommendation of Sabine Sczeny, a social psychologist at the University of Mannheim. She has conducted two experiments that attempted to find a connection between gender, jobs and scent.

Test subjects played the role of manager at employment interviews where all of the applicants, regardless of gender, wore either a feminine, floral perfume, or a more manly scent with a gunpowder-like fragrance, according to the Swedish publication Ny Teknik.

The study showed that the "managers" preferred to hire people who wore a masculine fragrance, even if the scent was so subtle that they did not even notice it.

Sleeping until seven reduces stress


Photo: Pressens Bild/Sam Stadener

»» Getting a good night's sleep will help you feel better. Researchers at the University of Westminster in London have found that people who wake up before seven o'clock in the morning have elevated levels of the stress hormone cortisol in their saliva, compared with those who sleep longer.

People who awake very early are also more prone to experience headaches and muscle aches, and be in less of a good mood than those who sleep until seven, according to the healthcare website Mitt-liv.nu.

Telecommuting can be a nightmare

»» Telecommuting can lead to psychological problems according to a study of 74 British journalists. Half of the participants in the study worked from home, while the other half worked at an editorial office.

Results showed that those who worked from home ran a greater risk of experiencing loneliness, irritability, guilt and frustration. They also showed more signs of stress than their colleagues. The problems are due largely to the fact that home-based workers lack the emotional support and camaraderie that can be found to a greater extent in the workplace.

"They also lacked technical support. Having your computer cause problems at work is bad enough, but when it does so at home, it is a real nightmare," says Doctor Sandi Mann to the magazine Du&Jobbet.

Suspicious bosses ineffective

»» Ineffective managers have certain common characteristics according to the US's Hagberg Consulting Group.

Recurring traits include misgivings about others' ideas, a tendency to see problems rather than opportunities, difficulties in asking for help and preoccupation with their own affairs. Other signs of a less effective manager include being a poor listener and not working as a team player.

Intellectually arrogant know-it-alls are also unpopular, according to the Swedish daily, Svenska Dagbladet.

RF Design, It's Not A Hidden Art Anymore!

Up to now designing RF ASICs has almost been considered more of a black art than a real technological process. Not any more. ST has consolidated all its years of ASIC design experience to bring new levels of RF ASIC design to sectors that include:

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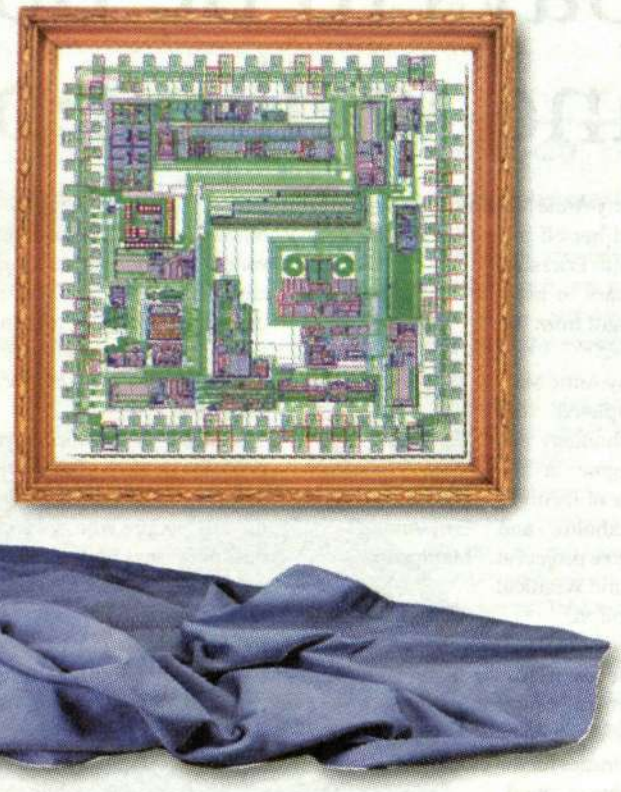

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ST is matching the progress of packet-switching in wireline communications offering complete solutions based on its own DSP cores for VoIP Phones and VoIP Gateways plus software packages and support for a wide range of newly developed product lines.

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New VoIP devices for 2001 based on current cores:
- STLC1502 Stradivarius digital DSP/MCU device
- STLC1503 analog companion chip

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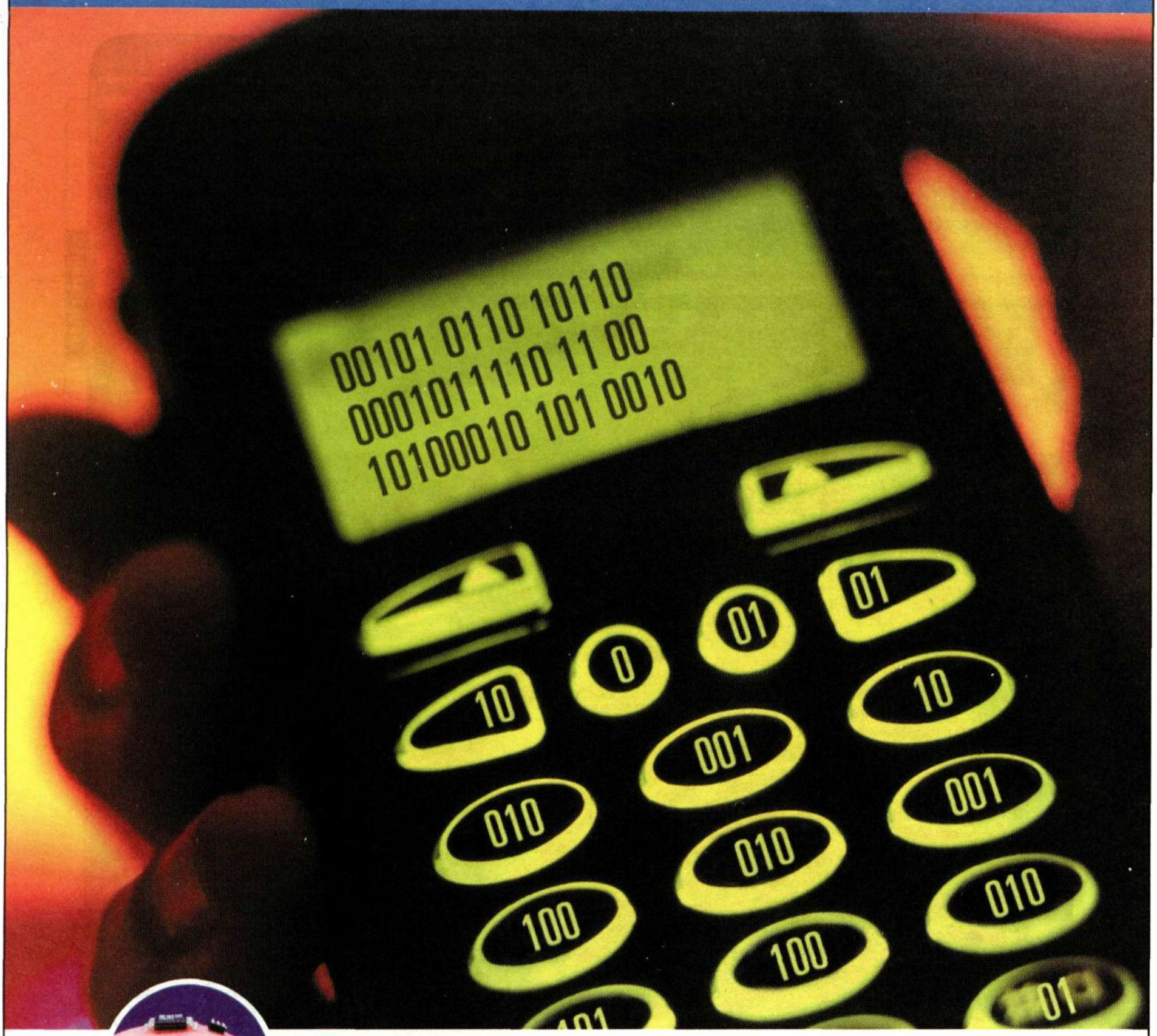
Tektronix®

Without Analog Technology, You Can Only Say So Much.



In fact, without analog you can't say anything. Analog circuits transform your voice into the electronic signals that move through phone lines or via wireless transmission, and then translate the digital data into understandable information on the other end. Small wonder that today's most advanced "digital" phones have more analog circuit content than yesterday's pure "analog" phones. And National Semiconductor is leading the way. Our advanced analog semiconductors enable mobile handsets to provide better audio quality, stronger signals for more stable connections, and increased talk time through power efficiency. In short, National's analog innovations are turning the world of ones and zeroes into information that makes sense.

National Semiconductor

The Sight & Sound of Information

R380 – better and better

Ericsson's R380 WAP telephone is continuously being improved. Now it is faster, has a safer protocol for shopping over the Internet and is also certified by the WAP-forum. The mobile phone has been favorably received by consumers and media alike.

➤ "There are few products that can be compared with the R380, which is a combined phone and handheld computer. It is the clear leader in its product class," says Oskar Lampel, global product manager for the R380.

To date, the R380 has sold best in European countries such as Italy, Sweden, Austria and the UK.

"The largest group of R380 buyers are businessmen and women who are on the move and in need of a small all-in-one terminal. And of course those who are curious about new technologies and keen to try them out."

Security is becoming increasingly important as more people buy services and goods over the Internet. Therefore, the latest version of the R380 (WAP 1.2) includes the WTML security layer, which is required by most banks when making payment transactions.

The Swedish banks, Skandiabanken and SEB, are examples of banks offering Internet services via the R380. The phone also has two generators for single-use passwords, Safe Word and Secure ID. These are used to gain access to a secure line. The R380 World is now available for people traveling and living in North America.

An R380 WAP telephone specially adapted to Chinese consumers is also available.

Ulrika Nybäck
ulrika.nyback@lme.ericsson.se

ERIC & SON

Swedish Ericsson employees gather to set a new aerobics world record. *Photo: Henrik Grönberg*

New aerobics record set

Ericsson employees from around Sweden participated in Aerobics Day on January 29, helping to set a new world record.

➤ A total of 64,782 people spent an hour performing aerobics around Sweden. Several athletics organizations, together with Ericsson and a number of other Swedish companies, challenged the old record from Mexico City, where 38,633 people participated in aerobics simultaneously in June 1998. The new record will be noted in the Guinness Book of World Records.

Henrik Grönberg

http://sverige.ericsson.se/fun

No. 3,
February 22,
2001

contact

Ericsson, HF/LME/DI,
Room 811023,
SE-126 25 Stockholm

Anneli Ivarsson with some of the damaged links that are sent to Repair and Spares to be mended.

The missing link

Sheer detective work. Localizing faults in damaged links often requires patience and a large portion of creativity. Jarl-Åke Hugosson and Jonas Lindeblom help each other to find "the missing link."
Photo: Martin Ahlgren

Collisions with birds or a freefall of 30 meters. At Repair and Spares, new life is given to damaged links. In 2000, the unit's 30 workers repaired 5,000 links.

➤ A stand in one of the halls at the Borås unit contains a sad collection of various MINI-LINK models.

There is a large antenna from Australia, which was completely demolished after a collision with a bird, and there is a link that burnt up after the customer replaced a six-amp fuse with a ten-amp fuse. Then there is the Spanish link that was completely taken over by lovesick flies, attracted by the high-frequency oscillations from the antenna.

Animals behind faults

"These are extreme cases. Most links are not so badly damaged, but it is not uncommon that links are destroyed by animals or are dropped tens of meters from masts.

Anneli Ivarsson is head of Repair and Spares at the Borås unit. Links are sent to Borås from throughout the world – links that have ceased to function for one reason or another. The unit's 30 employees look for the problems, and make repairs and adjustments, before the links are sent back to the field for a few more years of active service.

Although some faults are more common than others, a huge amount of patience, creativity and cleverness is required to locate the problems. This is sometimes real detective work.

Occasionally problems of a different nature occur. The oldest links that are sent in are nearly ten years old and they are models for which production ceased a long time ago.

"It can be difficult to find components for the old links," says Heimo Laine, who has been working at Repair and Spares for four years. "We simply have to try and make our own components."

Intense pressure

Last year, Repair and Spares carried out repairs to more than 5,000 links.

That is more than 100 links per week and, according to Anneli Ivarsson, the pressure has been intense on occasions.

"After the summer vacation period, we received a large number of links. During the autumn, we had periods with huge numbers of links 'in production,' but we worked hard and were able to handle all the testing within our own unit. Previously, we had to make humble approaches to the new production section and request help with such activities as systems testing and final testing. We have also improved our own routines and have at last caught up."

Commitment to customers

Some 95 percent of links are returned to the customer within 21 days, including weekends. This is Ericsson's commitment to link customers.

With a few days required for administration, Repair and Spares has 15 days to locate and rectify faults. Before the links leave the unit, temperature and systems tests are also performed, with the same demands as for newly produced links. It's a tough schedule, according to Anneli Ivarsson.

"In the spring, we took an average of 80 days to repair a link. During the autumn, we pushed hard, with a lot of overtime. By expanding the labor force by ten persons and focusing on the right aspects, we succeeded in reducing lead times to less than 25 percent.

"If we can now convince our customers to supply a description of the problems with the damaged links, we will be able to improve even more."

Niclas Henningsson
freelancejournalist

UPCOMING

February 20–23: GSM World Congress 2001 takes place in Cannes, France. Ericsson will be represented in the form of speakers, stands and a customer seminar.

http://dms.ericsson.se/events/gsmworldcongress

www.ericsson.com/gsmworldcongress

www.gsmworldcongress.com

March: Ericsson's Annual Report is sent to shareholders.

March 20–22: CTIA exhibition takes place in Las Vegas. It is expected that 700 exhibitors and about 30,000 visitors will be there.

March 23–28: The world's largest telecom and IT exhibition, CeBIT, takes place in Hanover, Germany.

http://inside.ericsson.se/cebit01/

March 28: Ericsson's Annual General Meeting.

UPDATES

The Ericsson Ski Championship took place in Idre, northern Sweden, February 2–4.

http://sverige.ericsson.se/fun

NEW ASSIGNMENTS

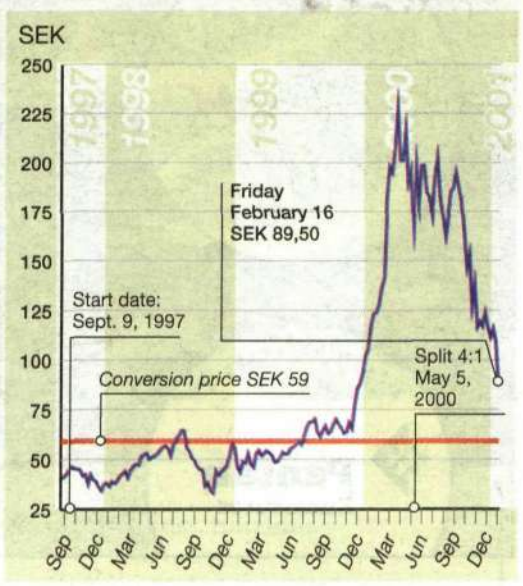
Lars Lindberg became head of the Home Communications business unit on February 1.

Richard Hellberg, Ericsson Radio Systems, has been appointed Senior Specialist in Radio Technology.

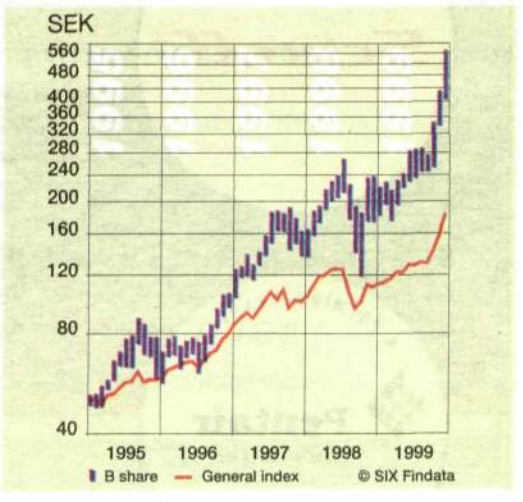
Stefan Bruhn, Ericsson Radio Systems, has been appointed Senior Specialist in Speech Coding.

Thorsten Herber, Ericsson Internet Applications and Solutions, has been appointed Senior Specialist in Object-oriented Design.

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



vacancies AT ERICSSON

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To advertise, mail your adverts to: employment.adverts@lme.ericsson.se.

Contact No. 3 2000 **Updated February 9**

ERICSSON INC, US – ASO DALLAS

The ASO Americas has an open position in the Build Management – Resource System Management group.

Build Management: We provide a high level of support to the ASO Americas Verification organizations via Test Configuration Management, Product Line Maintenance and System Test Plant engineering, installation and maintenance, i.e. Resource System Management.

Resource System Management: We are responsible for all engineering, installation and maintenance of the CME20, CMS40 and CMS88 strings as well as AXD, Tigris, servers and other test equipment.

You will be joining an enthusiastic and competent team in a dynamic working environment.

Our office is located just north of Dallas in Richardson, also known as the 'Telecom Corridor'. The 'Telecom Corridor' is quite an exiting place with great atmosphere where all the big telecom and datacom competitors are present.

To live here, in this sunny and warm climate, with friendly people, cool nightlife, all the big sports teams to watch (Cowboys, Stars,…), vast variety of restaurants, never ending golfing season, great outdoors and the affordable living, which makes life here in "Big D" very enjoyable. The Dallas metroplex is one of the fastest growing in the US.

The northern suburbs boast some of the best schools in the nation.

STP Installation Engineer

● JOB DESCRIPTION: This person will work closely with the Senior STP Engineer in coordinating installations/de-installation of lab equipment for the ASO Americas Software Supply/Support and Integration Center.

You will direct all sub-contractors for all installation activities.

Other duties will include electrical loading, balancing, punch downs, cross connects, rack construction/installation, Internet connectivity, and scheduling installations.

We are looking for someone with knowledge of AXE, AXD, servers, cabling, networks, etc. Experience working with contractors as well as good communication and good service skills.

QUALIFICATIONS/EXPERIENCE: Associates degree in relevant discipline, or equivalent experience (5 to 10 years) with the installation process, as well as an electrical and mechanical background. Must be able to handle and prioritize multiple projects and work in a high-pressure environment. Must have good written, oral and organization skills and be able to lift up to 50 lbs.

Contact: Jerry Schellenberger, Group Manager: ASO Americas - Build Management, Resource System Management, Jerry.Schellenberger@ericsson.com, +1 972-583-5675 or Randy Morast, Group Manager: ASO Americas - Build Management, Randy.Morast@ericsson.com, +1 972-583-7534

ERICSSON INC, USA

Global Services - 1st Line Support

Take hold of the opportunities available in Ericsson largest market, North America.

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● As part of this first line team you will start by using your core AXE knowledge to support existing Wireline (PSTN) Local and Global customers while at the same time going through training programs and development to allow you to support several different products lines.

These product areas include but are not limited to CDMA, Datacom, Access, Jambala, Engine, IPT, etc...

Throughout this journey you will have the opportunity to pursue development in technology areas that interest you.

This is an excellent opportunity to capitalize on the experience you possess with existing AXE products while developing and applying competence in several new technology areas.

Education/Experience: BSEE/EET or equivalent work experience. Minimum 3-5 years experience within Ericsson support. Solid knowledge of AXE platforms. Working knowledge of Test System, Plex, ASA as well as standard Ericsson Support tools such as GS3 and MHS. APZ and/or IN experience a valuable asset.

Extensive experiencing in trouble-shooting and customer handling.

Key Skills: Solid customer focus and excellent customer skills are a must. Ability to work well as a team player but also to have self initiative and motivation to work independently. Excellent interpersonal skills in daily work as well as under pressure. Excellent verbal and written communications skills.

Willingness and adaptability to evolve and acquire new product competence in several different new technology areas.

Contact: Tim Danks - Manager, 1st Line Support A, tim.danks@ericsson.com, +1 972 583 0800, ecn 80030800 or Asad Rizvi - Manager, 1st Line Support B, asad.rizvi@ericsson.com, +1 972 583 0251, ecn 80030251.

European Career Opportunities within the Business Support Centre (BSC)

BSC the best

The Business Support Centre (BSC) is a dynamic new venture created to add value to Ericsson in Western Europe by allowing the Local Companies to concentrate on their core business. This will be achieved through delivery of high quality, cost-effective, e-enabled IS/IT, F&A and Procurement Services, which will be consistent and standardised across Western Europe.

The BSC stands for customer focus, teamwork, achievement, innovation, flexibility, professionalism and the desire to be first and the best at everything it does. The BSC will focus on increasing the value of back office support to the Market Units, with improved change capabilities and the ability to innovate and react to changes in the market place.

We are looking for motivated individuals who will embrace these values and culture to take the BSC forward in achieving its aims and goals. You will be able to concentrate and develop your core competencies whilst receiving support to achieve your personal goals and aspirations.

Are you a professional in one of the following areas and looking for an exciting Pan-European career?

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- **FINANCE & ACCOUNTING**
- **PROCUREMENT**

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Do you want to work with CDMA Systems, the latest addition to Ericsson's 3G product portfolio, in San Diego, California - USA?

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Strategic Product Manager, cdma2000 O&M Tool

● We are a team of product managers in the BU CDMA (BMOC) handling the Operation & Maintenance products and features of the evolving CDMA product line.

DUTIES AND RESPONSIBILITIES: You would be responsible for the total life-cycle of our new toolkit for cdma2000 Radio network design and optimization (CREATE).

The package comprises functions for the radio network planning, transport network planning, drive testing and optimization.

The products are partly developed at EWU, other Ericsson units or sourced from 3rd party vendors. Your task will be to understand customer demands, definition and prioritization of requirements, vendor selection and negotiation, business cases, pricing and marketing of the CREATE products.

The ideal candidate will have: Experience with radio network planning and optimization tools (e.g. TEMS, TRAM) Product or system management experience. CDMA/WCDMA knowledge is a plus not a must. Excellent analytical and technical understanding to direct R&D units and vendors. Business understanding of the mobile network marketplace. Excellent communication and writing skills. Proactive attitute, customer orientation, team player.

The position is available immediately. A local contract is preferred, GCE can be considered.

Contact: Stefan Spaar, Director Product Management CDMA O&M, +1-858-332-6409, stefan.spaar@ericsson.com, cdmasystems.ericsson.se.
Application: Gary Tennison, Recruiter, +1-858-332-6240, g.tennison@ericsson.com, pls. refer to req# 7104.

ERICSSON WIRELESS COMMUNICATION, CALIFORNIA, USA

Configuration Manager

● We need an expert to support our efforts in Configuration Management for the CDMA Radio Access Network (C-RAN) product.

Responsibilities will include the development and management of product and document structure and the formulation of methodology for the control of project and product baselines in a multi-project, incremental development environment.

This position demands the ability to work well as a member of a cross-functional team.

It requires excellent leadership, communications, and decision-making skills. Significant Ericsson experience in Configuration Management is highly desired. Experience with managing the System Engineering aspects of complex communication systems is essential. Experience with CDMA wireless infrastructure is preferred.

Senior Project Manager

We need a Senior Project Manager to help us manage the System Engineering efforts for the development of a next generation CDMA Radio Access Network (C-RAN)infrastructure product.

You will develop and manage schedules and budgets as well as coordinate needs with other project stakeholders. You will also manage risks and provide status reports to management while driving the System Engineering effort through completion of the project.

This position demands the ability to work well as a member of a cross-functional team. It requiresexcellent leadership, communications, and decision-making skills. The ability to estimate effortsand risks based or partial information is important.

Some travel may be necessary.

Contact: sdhr@ericsson.com and include your CV.

NANJING ERICSSON COMMUNICATION CO. LTD.

System Expert for SW Supply

● OBJECTIVE OF THE JOB: To support the SW supply activities run by ENC/R. To secure the quality and efficiency of the SW supply work. To train / coach the local ENC/R engineers.

RESPONSIBILITIES and TASKS: support (incl. trouble shooting) the SW supply team of ENC/R to do the SW supply

Be part of our success – in Ericsson Austria, Vienna

Would you like to work at a place that is famous for its culture and the beauty of its scenery, situated in the heart of Europe and offering a high quality of living - all this within Ericsson?

Ericsson Austria offers you challenging tasks and carrer opportunities.

Take your chance in our international departments in Enterprise Business and in strengthening our association for mobile and fixed networks!

Head of Customer Solutions Management.

In this function you will be responsible for a team of customer solution managers, while acting as the customer's preferred partner for discussing, creating and describing technical customer solutions. You will transfer customer requirements into products and solutions in close cooperation with business and product units.

We expect you to have a good knowledge of Multi Service Network Solutions for network operators as well as a technical background and education within datacom/telecom. In addition you have excellent management and teamworking skills and are a commercial thinking and customer oriented person.

Head of Customer Services and Operations.

As Head of Customer Services and Operations you will secure competence development for all Key Account Managers, Account Managers and Solution Managers within divisions, monitor and secure customer satisfaction and act as a competent speaking partner for all services offered by Ericsson.

As our ideal candidate you will have experience in customer projects towards telecom operators, a strong sales orientation as well as good management skills. You should be highly customer oriented and a commercial thinking person.

Customer Services and Operations Managers.

As the speaking partner for our customers you will be responsible for offering all customer services while securing forecasting and deliveries of all services as well as monitoring and securing customer satisfaction.

Successful candidates will have relevant professional experience, enjoy teamwork and are customer oriented, commercial thinking personalities.

Section Manager Telecom Management/ Professional Services.

In this position you will be fully responsible for securing resources for service supply activities according to forecasts, contractual obligations or customer requests as well as sales support activities (service definition, cost calculation, tender preparation, customer presentation) within your section. The main focus of services offered within your section is network management for wireline/UMTS networks and radio network design for UMTS.

We are looking for enthusiastic and people oriented managers and colleagues with a technical degree and a minimum of 10 years experience in telecommunication. Fluency in English is preliminary whereas German will be an advantage.

Solution/Service Specialist for Datacom/IT Applications.

In this position you will be responsible for creating and describing customer technical solutions in close cooperation with the customer's technical staff as well as for the product introduction, localization, verification and presentation. You will be participating in subcontractor negotiations and provide advice and assistance to the sales and service organization.

As our ideal candidate you have a deep technical background in the IT/Data world as well as experience with Ericsson PBXs (MD110 and BusinessPhone) and SW Applications. Technical support knowledge, high team orientation as well as customer orientation is essential. Fluency in German is a pre-requisite.

Product Marketing Manager.

In this function you will value product requirements and analyze product's profitability while securing successful marketing activities for these products within our distribution channels.

Besides a technical or commercial university degree you have a strong background in the area of telecom (PBX, system and network management) and datacom (LAN, WAN, TCP/IP). In addition you are initiative, highly team-oriented and responsible.

Technical Product Manager.

As a Technical Product Manager you will consult and support our Product Marketing Managers in planning product development and introductions. You will prepare technical specification documents as well as prepare and implement product presentations and demonstrations for partners and customers.

Successful candidates will have a technical university degree and professional experience in telecom (PBX, system and network management) and datacom (LAN, WAN, TCP/IP). Excellent communication and English skills are preliminary.

Customer Documentation Manager.

Your main responsibilities will be the issuing of online documentation and operating instructions for our communication systems as well as SW (PC) applications. In addition you will initiate and lead projects for localizing products and documentations and prepare online help for SW applications.

You have a technical education or practical experience in preparing technical documentations (online media). Excellent English and PC skills are similarly prerequisites as team-orientation, responsibility and initiative.

Product Training Designer.

As a Product Training Designer you will be responsible for creating and developing trainings while preparing training tools and implementing pilot trainings and "Train-the-Trainer" courses including documentation and certification.

Excellent communication skills as well as training experience are as important as a technical education and telecom experience. We expect a candidate with excellent presentation techniques and English skills as well as high team orientation and willingness to travel.

Software and Hardware Developer.

You take ownership of system and product analysis as well as of the specification, design, encoding and testing of functional modules and communication systems.

Essential skills include an in-depth knowledge in operating systems (OSE, VXWORKS, PSOS, WinNT), programming languages (JAVA, C++, ASM, ANSI C) as well as IP protocols and applications. You will be able to use the newest CAE tools, which afford a strong technical know-how and experience.

Support & System Integrators.

In this function you will be responsible for technical solutions in the area of 2nd level support. As the main interface to our internal support technicians you are up-to-date with all technical datas. In addition you will remedially operate on-site, coordinate field tests of new products and maintain and set-up reference systems and test tools.

Successful candidates will have in-depth knowledge of communication system's and application's functionality as well as test tools. High customer orientation and good communication skills are as important as the familiarity with MS Office products and reporting tools.

Make yourself heard.

For further details or to apply for a position please contact:
Ericsson Austria AG, Mrs. Gisela Kollmann, Recruiting
Pottendorferstraße 25-27, 1120 Vienna, Austria
gisela.kollmann@sea.ericsson.se, www.ericsson.at

ERICSSON

work, which includes: GSM AC-A verification, FOA on site. GSM CN-A ASV (Application System Verification), feature test, function test, and FOA on site.

Coach and train ENC's experienced engineers to grow up as local system expert to support the SW supply work in the future.

AUTHORITY: Making work instructions, procedures, defining work process for the SW supply work.

REQUIREMENTS FOR THE JOB: more than 5 years experience of working on AXE systems, very good competence on Plex-C and ASA, being able to write EC, good experiencee on GSM system is preferable, ASV experience is preferable.

Contact: Candice Wang, Candice.Wang@enc.ericsson.se.

ERICSSON SDN. BHD., MALAYSIA

Manager, Service Marketing

● STRATEGIC ROLE: Identify, develop, and drive Global Services business, focused on Telecom Management, for telecom operators. Work as a high level consultant for key business – part time.

Duties and Responsibilities: Devise and implement a strategic business plan – in cooperation with Key Accounts. 25% of the time should be billable consulting hours. Overseeing a shadow P & L, which requires strong influential skills and a strategic value proposition both internally and to the customers. Play a key role in sales activities, including the qualification of each project and bid approval. Develop and maintain strong relationships with alliances and partners. Develop a clear sales strategy including the identification of key differentiators and added value offerings. Develop and maintain strong relationships at senior levels within client organizations and industry in line with MU/KAM strategy. Ensure synergies with other units of Ericsson Malaysia (e.g., GSRO) are fully utilized. Lead and motivate staff to ensure that morale is kept at a constant high level.

Key Competencies: A recognized university degree with 2-3 years experience in consulting/sales of system integration projects and/or 3-4 years of experience in the IT/Telecommunications industry, e.g., customer care and billing, and telecom/network management solutions. Able to work with contracts and offers, and have extensive knowledge of system integration projects telecom operators or utilities.

Preferably this experience should come from Ericsson, a large IT company, systems integration firm or telecom operator. Must be fluent in English.

Profile: Must posses the competencies of a Business Manager, i.e., customer orientated, accountable, market focused and business orientated.

Sales driven, goal oriented and have a good commercial judgement. Determination to achieve the service sales budget. Possess good presentation and negotiation skills. Ericsson knowledge and good service portfolio skills are preferable. Self-confident and creative mindset.

Contact: Ericsson Sdn. Bhd, Human Resource Management Unit, Wisma Ericsson, Block D, 12th Floor, Jalan SS7/19, Kelana Jaya, Petaling Jaya Selangor Darul Ehsan, Malaysia.

ERICSSON GMBH, DUSSELDORF, GERMANY

UMTS / GSM Support Engineer

● We are looking for support engineers with a minimum of 3 years AXE/GSM experience, specialized in the Core Network Mobile area, CSS/MGW/Core part of UMTS. You will be working with a young international team in the section Core Network Mobile.

The section belongs to the unit Customer Support Services, Ericsson Services Mid Europe.

You will be responsible for support and supply activities for the core network part of GSM, UMTS and GSM on the Net. This involves customer acceptance tests, UMTS field trails, FOA, TR analysis, help desk handling, first and second line emergency support, advanced trouble shooting and emergency correction development.

Our customers in Germany are one of the strongest players in the Telecommunication business.

Therefor it is one of your biggest efforts to introduce new releases and products into the live network, as one of the first markets worldwide.

For this reason, we have a very close contact to the development projects within Ericsson. This will give the successful candidate a great opportunity for personal and technical development and work with the latest GSM/UMTS technique. We also have our own training center in Düsseldorf.

You should have a good knowledge of support/supply activities. You will play an active role in support of the existing network and testing of future releases.

The position can be either expatriate or local employment.

Contact: Mikael Strandberg, +49 211 5342359, Mikael.Strandberg@edd.ericsson.se.

ERICSSON HUNGARY LTD.

The Mobile Systems Development Unit of the R&D Division is looking to expand its recently established System Management Team with

System Engineers UMTS/GSM

● As part of our dynamic team you will further develop your competence and make technical studies and investigations in essential UMTS/GSM areas such as the management of user mobility, handovers, radio resources, accesscontrol, and security in Ericsson's first-and-best MSC Server.

You will deal with a variety of tasks including quick studies, patenting ideas, setting system requirements, and making strategic technical steps in the migration towards new system interfaces and protocols.

You will be responsible for standards related to your competence area and will also be involved in standards development.

An engineering or computer science degree and 2 years of relevant work experience with GSM systems, especially functional level and interfaces,is required.

Feasibility study experience is a clear benefit.

We offer outstanding international career development, challenging tasks in a modern working environment within an enthusiastic young team and an ambitious country offering a 2 years expatriate contract.

System Manager UMTS/GSM

● As a System Manager in UMTS/GSM you shall have responsibility in building up and operation of system management, being the contact point to the PU System Management.

You shall be up to date with the PUs future development plans of mobile core network.

You shall make and keep contacts with thePU, other units, co-operate with other technical areas.

You will plan for system management assignments we receive.

You report directly to ETH/RRUnit Director.

An engineering or computer science degree, 3-4 years of relevant workexperience and a wide UMTS/GSM system knowledge is a requirement. Contribution to standardization or other system management project is a clear benefit.

We offer outstanding international career development, competitive salary and compensation package, in a modern working environment within an enthusiastic young team and an ambitious country offering a 2 years expatriate contract.

Contact: Sonny Thorelli, Unit Director, +36 1437 7962,Sonny.Thorelli@eth.ericsson.se; Kata Gruik, R&D Recruitment,+36 1437 7991, rdjob@eth.ericsson.se

ERICSSON RADIO SYSTEMS AB, JORDAN

BSS System Support Engineer

We are looking for a BSS system support engineer to join the support team in our Customer Services Division, based in AMMAN. We offer you a long term assignment in a warm and nice country,

● Main responsibilities: You have to be involved in all main FSC customer processes: CSR handling (TR and Consultation, Emergency Service, SW update/upgrade. A very important role is to transfer competence to the local staff.

Requirements: At least 3 years technical support experience working with GSM BSS system. Good system knowledge and SW trouble shooting skills. Knowledge of support processes and tools. Good English and communication skills. Experience with OSS applications and remot loading techniques are appreciated.

Contact: Fouad Jazzar, FSC, +962 77 385 844 or Inger Agdahl, Human Resources,+962 77 385 847.
Application:
inger.agdahl@bjo.ericsson.se.

NIPPON ERICSSON K.K., DATA TRANSCRIPT, JAPAN

Technical Assistant Manager

NRJ DT section has responsibility for the DT Production for PDC RBS and AXE for the internal and external, and IMT-2000 Core Network DT and Configuration Data for RAN in the future. Our section consists of five groups with 40 engineers.

● The key responsibility of the Technical Assistant Manager will be: to support group leaders / team leaders to achieve the goal of each group, attend meetings with the customers and related sections and regional offices to discuss the project plan and problems, and customer's demands, to improve quality efficiency of DT & CD, suggest changes to the process to the group leaders and staff, and to manage the competence level of engineers and the competence development plan.

Applicants should have at least 5 years experience in Data Transcript for GSM.

As the position requires extensive contacts with external and internal units, good coordination and communication skills in English are essential.

You will have to be flexible and have the ability to work under time pressure.

Contact: Hitoshi Kawasaki, DT Manager +81 45 477 5518, hitoshi.kawasaki@-nrj.ericsson.se

Senior Data Transcript Engineers. The NRJ Data Transcript Section is looking for two Senior Data Transcript Engineers for CMS30 Research on the future projects and Test Plant DT production / support for our own test plants.

CMS30 Research DT Engineer

● As the CMS30 Research DT engineer, you will be responsible to research the impacts to DT on the future project, to improve our current processes, to educate local DT engineers, to investigate and develop DT method and tools.

Test Plant DT Engineer

● As the Test Plant DT engineer, the responsibility will be to produce DT for our own test plants. To educate local engineers and to support PDC/IMT-2000 DT production for the customers will be also required. You should be self-motivated, take initiatives and work independently. As this is a demanding position, you must be flexible and sensitive in your relation towards the customers and team members. Occasional presentations and meetings with the customers will also be expected.

Applicants should have at least 3 years of AXE experience, in data transcript production, or testing and related areas in GSM, preferably in CMS30. You should be computer literate in MS Windows environment. Experience in UNIX Windows environment is a plus.

As the position requires extensive contacts with external and internal units, good coordination and communication skills in English are essential. Reasonable amount of domestic and international traveling should be expected. Experience in DTSS, GREGER, DTH, GPRS and IMT-2000 are good assets.

Contact: Hitoshi Kawasaki, DT Manager +81 45 477 5518, hitoshi.kawasaki@-nrj.ericsson.se or Raymond Mui, DT Supervisor, +81 45 477 5515, raymond.mui@nrj.ericsson.se

ERICSSON SYSTEMS EXPERTISE LTD, IRELAND

Service Delivery Solutions – I.N. Experts. Service Delivery solutions (part of the Customer Management Solutions practice in Division Global Services) is currently recruiting Intelligent Network Experts.

Services Delivery Solutions is an expanding area within the Customer Management domain.

We provide consultancy and professional services to telecom operators, providing advice, consultancy and assistance to enable them to bring their services to market in the minimum possible time.

SDS – I.N. Expert

● Responsibilities: Provide expert advice and assistance on Ericsson's I.N. platforms and applications. Auditing I.N. Installations and Configuration. Troubleshooting I.N platforms and applications. Providing expert consultancy on I.N processes such as O&M procedures, statistics, etc.

A willingness to undertake extensive overseas travel is a pre-requisite for all applicants. Customer presentations and responding to technical queries. Providing timely input to business and marketing activities.

Qualifications: A good Degree in I.T., Telecommunications or Electronics engineering.

Experience: Expert knowledge in one or more of the following areas is required: SDP,SMS/SCE (SMAS), SMA, GSA-RPC and Powerbuilder, SCP-T,SSP, SES, SSF-AM,SCF-AM platforms I.N. Applications including VPN, I&B, CCS, PPS, PPL, etc. Jambala SCP and applications, CORBA, CMISE, etc. Experience in I.N. Sercice Design, Testing and/or Installation is an advantage.

Some experience working with Telecom Operators is desirable. Knowledge of Ericsson MHS, TRTool, PRIM ans GASK. Proven communication and organisational skills. Good presentation skills, both written and oral with an ability to influence others.

Application: andrea.keane@eei.ericsson.se.

ERICSSON RADIO ACCESS AB, KISTA

PA Designers for WCDMA

Ericsson Radio Access AB (RSA) has a widely recognised, broad expertise in the field of cellular system. We are responsible for the design of antenna near products and power amplifiers within the radio base stations of all Ericsson's mobile telephone systems all-round the world, e.g. GSM, CDMA, WCDMA and Operational Development.

The main part of our operation is situated in Kista, and we currently employ around 1,400 people.

Within Ericsson, RSA is known as an unconventional yet results-oriented company. And that's how we want to stay.

Our culture is based on succeeding with the 'impossible', doing things that have never been done before. We describe ourselves as being quick in our work, fleet-footed, down-to-earth, close to our customers and inventive. We are genuinely passionate about what we do.

● We are looking for PA designers who are interested in bringing together both theory and practice in their work and who have several years of experience from RF design and development within the RF power amplifier field.

The work takes place in project form that means full responsibility from speci-

fication to productification More specifically, this means that you will participate in and collaborate within ongoing PA projects through specifying, verifying, productifying and development of measurement methods for wide band linear power amplifiers for MCPA (Multi Carrier Power Amplifier). As the power amplifier is the very heart of our MCPA, the job will involve stimulating dialogues with those who develop the MCPA linearization circuits. We use the latest components and tools in order to develop products to the "limit of possibilities".

You should hold a Master of Science degree or have practical experience from equivalent work. You will probably be goal-oriented, have a well-developed ability to see challenges and find solutions where others see problems.

You will be interested in theory and have an ability to see links between theory and practical solutions as well as to grasp the overall picture. You possess initiative skills and have a definite solution-oriented approach. You are progressive and find it easy to communicate and co-operate with others.

Contact: Lars Togård, +46 8 757 59 94, Bim Ahlström, Personnel, +46 8 757 16 74.

Quality and Business Developer for Operational Development

● The successful candidate will want to work with quality and business development, which will entail working with the following areas: Participation in management group work. Working with RSA's management systems and processes. Conducting work aimed at achieving improvements. Managing business development projects. Training personnel in subjects related to the management system. For this position you will ideally have an engineering degree specialising in electronics, mechanics, production or similar. You will also have broad experience from production, development, marketing and/or business development. Knowledge about environmental management and export control is an advantage. You will be progressive and committed, and have a well-developed ability to co-operate with others. You will have a 'helicopter approach' with the ability to go into detail.

Contact: Conny Widlund, +46 8 404 23 43 or Bim Ahlström, Personnel, +46 8 757 16 74.
Application: Ericsson Radio Access AB, KI/RSA/HPS Personal, Box 11, SE-164 93 Stockholm, SWEDEN, Jobb@rsa.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

RF Component Co-ordinator, Transceiver Design

To remain at our current position in the global market it is essential for us to utilise and develop components at the leading edge of RF technology.

To facilitate this Product Unit Base Transceiver Stations seek a component co-ordinator for the GSM / TDMA / EDGE transceiver design centre in Kista. This challenging role is pivotal to the development of new components and designs and requires the successful candidate to possess good communication skills alongside a knowledge of radio principles and component theory.

● The responsibilities of the role include: Co-ordinating the use and development of RF components and disseminating component information between Ericsson's design centres in Sweden and the rest of Europe. Being first line liaison for component issues with Ericsson's engineers in Japan. Developing market awareness regarding component development and state-of-the-art technology. Fostering strategic alliances with suitable

3G situation in Greece/Hellas

Hellas is a small country having about 11 Million in population, one of the most growing countries in EC with a mobile penetration of about 60% and an internet penetration of about 5%. Today there are two GSM 900MHz Operators controlled by Vodafone and Telecom Italia respectively, one GSM 1800MHz Operator where Greek PTT is allied with Telenor, the traditional Greek PTT operating a digital fixed network and four new operators that recently (Dec-00) got Fixed Wireless Access licenses.

The Greek/Hellenic Telecom Market is now fully deregulated and is developing with acceleration towards the 3G systems, services and applications. The 3G Telecom services are to start their deployment earliest at the end of 2001. There are four to five 3G licenses to be awarded together with the extra available GSM spectrum early summer 2001. The Hellenic Government, through its regulation body EETT, declared to start the Consultation / Deliberation process within February-completed within March. On the other hand the auction-which is the most possible process to be used by EETT-will have as an ultimate goal of helping the development of competition on equal terms thus allowing one or two new players to grow healthy and operate in a market with tremendous potential. In turn, EETT believes that End-Users/consumers will benefit with better and more cost efficient services and applications combining mobility, data, voice and video. In addition, the 3G Operators in Greece will not consider Greece as their only market but to its minimum the whole Balkan area needs to be considered as the relations with neighbor countries are very good.

Ericsson Hellas SA (ETG) has identified the importance for Ericsson of continuing being the ultimate supplier even for 3G systems solutions and services. Hence, ETG believes that 3G is one of the most important future businesses that will provide continuity for our healthy businesses in Greece. Therefore, ETG has recognized the need to be equipped with experienced people that have proven international abilities, deep knowledge of Ericsson's global organizations, as well as the company's processes and markets, who will drive the 3G business forward ensuring Ericsson as the main supplier and partner of total communication solutions.

Ericsson Hellas was established in 1979. We are now clearly the largest telecommunications solutions provider in Greece for voice and data communications to the major telecom operators in the country. Most people in Greece are using Ericsson infrastructure for their everyday communication.

Ericsson Hellas, ETG, is located in the beautiful Athens suburb of Glyfada, just minutes away from the sea.

The following position are now open for a 6 month (minimum) duration stay in Ericsson Hellas:

3G TECHNICAL SOLUTIONS MANAGERS

Will team lead the tender effort and will ensure that the tender work adheres to the optimum solution for the particular customer and Ericsson generic offer.
Together with the Bid Manager will definine the solution to be offered, the dimensioning requirements as well as prepare any required BoQs to assist our Sales department in pricing.

This responsibility also includes ensuring that the SoC adheres to the particular customer's needs.

This individual will also be responsible for writing the exclusive proposal that will be included in the relevant offer.

Will also assume the responsibility of coordinating and securing backup from the different Ericsson units that need to be references for the particular tender.

3G CORE NETWORK SOLUTION RESPONSIBLES

Will directly participate in the part of the tender that relates to 3G core network solution including network dimensioning, SoCs and resolution of technical and migration issues and intergration issues.

3G RADIO NETWORK SOLUTION RESPONSIBLES

Will directly participate in the part of the tender that relates to 3G Radio network solution including: Network Planning and Dimensioning, Product Solutions and Roadmaps, radio migration / integration aspects from 2G to 3G, Coverage / Capacity issues, Co-siting aspects of UMTS & GSM, RNC Network Architecture & Interfacing, SoCs and resolution of technical issues for all radio products (RBS, RNC, TRAM, RANOS).

3G TRANSPORT NETWORK SOLUTION RESPONSIBLES

Will directly participate in the part of the tender that relates to 3G solution for the Access and Core Transmission network including: network dimensioning, SoCs and resolution of migration / integration and technical issues such as interconnection aspects of radio nodes to DXX, ATM / FR, PDH / SDH, GPRS nodes, MSC, BSC and IN nodes.

Network management, billing, charging, and provisioning platforms and their evolution

Will participate in the part of the tender that relates to 3G evolution that relates to Network management, billing, charging and provisioning platforms, SoCs and resolution of technical and migration / integration issues as well as interfaces to legacy billing nodes.

SCSA AND PREPAID SOLUTION RESPONSIBILITIES

Will directly participate in the part of the tender that relates to 3G evolution of legacy IN systems and services, Prepaid and incoming interfaces (SIP, CCP, etc...) that allow interworking of the above mentioned systems with the service network, as well as SoCs and resolution of technical and migration/integration issues.

The candidates should have proven experience in previous 3G tender work, as well as be able to work in a team environment under high pressure situations.

Interested participants should forward their resumes for immediate evalution to:

Miss Konstantina Kolovou
e-mail: konstantina.kolovou@etg.ericsson.se

Make yourself heard.

ERICSSON

component suppliers, together with the Strategic Purchasing department. Influencing supplier's development according to the requirements of our designers. Initiate joint development projects with suppliers. Working closely with our purchasing, component engineering and production departments. Carrying out measurements and assessments on components. Participating in and supporting different projects in component related issues

The role is varied and interesting, involving some travel to Europe, the U.S.A. and Japan; Giving presentations to suppliers and designers and participating in component forums.

It will be neccessary to participate in several projects in parallel. The successful candidate will also gain experience in RF design, the radio system and the GSM/TDMA/EDGE network.

Technical Object Leader, Frequency Generation, RF Design

● The responsibilities of the role include: Leading a team of RF design engineers and co-ordinating their activities. Taking an active, decision making role in module development and improvement projects. Making time plans and roadmaps, taking responsibility for new technology development time schedules in harmony with internal customer's needs. Driving and co-ordinating the development of RF and low frequency synthesisers and disseminating information between Ericsson's design centres in Sweden and the rest of Europe. Participating in market and technology studies. Fostering strategic alliances with suitable component suppliers, together with the Strategic Purchasing department. Influencing supplier's development according to the requirements of our designers. Initiate joint development projects with suppliers. Working closely with our strategic purchasing, component engineering and production departments.

The role is varied and interesting, involving some travel to Europe and the U.S.A. giving presentations to suppliers and designers and actively participating in decisions which will effect the future development of Ericsson's mobile infrastructure products.

It will be neccessary to participate in several projects in parallel. The successful candidate will gain experience in project management, the radio system and the GSM/TDMA/EDGE network.

Contact: Phil Appleton, +46 8 58533287.
Application: ingegard.pettersson@-era.ericsson.se.

ERICSSON SA, MARKET DESIGN SOLUTIONS CENTER, R&D, SPAIN

The EEM Market Design Solutions Center is a development center located in Madrid and our mission is to handle market function assignments in a fast and responsible way within Ericsson Organization to help our customers, Customer Groups and Market Units to win more business.

SW Designer

● As Software Designer, you will be involved in Market Design Projects running at EEM MSDC during the Design and Test phase. The Design part will be mainly the implementation of market functionality's in AXE products. During the test phase you will perform test analyses, general test reports for Market products.

We think that you shall have a technical degree or comparable, preferably in telecommunication and 1-2 years experience in design and test in any of AXE System we work with, like TCS, TSS, IN_SSF, CHS, Access. In addition you will get opportunities to acquire understanding, knowledge, general view of the AXE Design products areas and also training in them.

System Engineers

● As System Engineer, you will receive the requirements from the customer to implement Market Functionality and you will be able to provide them with an optimal technically and project wise. You shall have a good understanding of the AXE System and experience in multiple product areas like TCS, TSS, IN_SSF, CHS, Access; and shall also have a customer focused approach to the development of a total solution.

You will build up a contact network with a variety of people from marketing and the product responsible in the different PU/PA's and you will have the possibility to be involved in Market Projects as technical Coordinator to improve your competence as System Engineer in all the AXE Word.

Our Web: http://alvaro.es.eu.ericsson.se/tl/ftgen/ftgen.html

Contact: Luis Cardenas, +34 91 339 2154 or +34 699 427578, luis.cardenas-zapata@ece.ericsson.se.
Application: Ericsson S.A, Indocentro, Retama 7, 4ª Planta, 28045 Madrid, Spain.

ERICSSON HONG KONG

Hong Kong is recognised as one of the most competitive Telecoms Market in the World. Six Mobile Operators running eleven networks serve nearly four million customers with subscriber penetration at over 50 %. Ericsson Local Support in Hong Kong provides support services to our key Mobile operator's GSM900/1800 and TDMA networks as well as the major Wireline operator's large international gateways. Four 3G licences will be awarded during 2001.

Hong Kong operators need to be at the forefront of technology -we have already introduced WAP and GPRS into the market and will be among the first in the Asia-Pacific Region to implement 3G networks. To provide professional support in this very challenging environment, we are looking for a person of high calibre to fill the following position:

System Expert

● As System Expert, you will be required to perform network investigations and problems at the highest technical level and to resolve them in line with customer expectations. Design, test and implementation of Market functions will be required as well as participation in system updates/upgrades and our 24x7 Emergency support rota. You will also be expected to provide technical competence transfer and mentoring to the existing support team plus technical advice to the Ericsson Local Support Manager to whom you shall report directly. In addition, you should expect to be exposed to the emerging 3G technologies and help manage the required adaptation of the support teams processes and methods accordingly.

To fullfill the above job responsibilities and expectations, you should have broad CME20 based system knowledge, expertise in the area of APZ/IO and ideally some exposure to GPRS and Datacom.You should also have been working with AXE systems for at least 8 years, 5 of which should have been with Mobile systems, in a Design/Verification/Support type environment. Besides, you should have a full understanding of Ericsson support processes and experience of working directly with customers - a strong focus on customer relations and satisfaction is expected. Hong Kong is a fascinating city in which to work and live - for a technological challenge and an exciting way of life you can do no better !

Contact: Wendy Chan, Sr. Human Resources Officer, +852 2590 2417, wendy.chan@ehk.ericsson.se.

ERICSSON LTD, BASED TELECOMMUNICATIONS CENTRE, BURGESS HILL, UK

Senior Test Build Engineer

Build Handling is part of Test Configuration Management and is responsible for providing test beds for the development and evaluation of new products for Wireline, Mobile and Datacoms. The Test Build Support groups build and maintain the software dumps, undertaking fault finding and emergency corrections as required.

● Test Configuration Management are looking for a Senior Test Build Engineer to build and maintain software dumps (CP/SP); locate corrections and assembling blocks required for testbeds; register, test and send Primary and Market corrections and desk check corrections. Other key responsibilities require the Senior Test Build Engineer to undertake special projects/responsibilities as and when required, actively contribute to the development of technical competence and continuous improvement process of TCM.

It is essential that suitable candidates have a minimum of 4 years experience of Test Build Support in AXE10 environment or other proven testing/TCM ability and have completed Testing 1, Testing 2 and Testing 3 or equivalent. Proven fault finding abilities, as well as a thorough knowledge of all correction handling and mapping and knowledge of assembly of dumps and change messages are also essential to the role. The ideal candidate will also need to be familiar with UNIX and IBM mainframe applications.

Contact: Recruiting Manager, Shona Petrie, shona.petrie@etl.ericcsson.se, +44 1444 234473 or HR, Suzi Cooper, suzi.cooper@etl.ericsson.se, +44 1444 234018.
Application marked 466:

System Test Plant Manager/Solutions Delivery

● Test Configuration Management is responsible for providing the testing environment for the development and evaluation of new products for Wireline, Mobile and Datacoms. The System Test Plant Group is responsible for providing the test plants, the exchange data transcript for the software builds and the simulated environment for these new products.

The System Test Plant (STP) Manager is responsible for making a direct contribution to the business development and profitability of the department. This will include the provision of resources for test plant services, overall development of test plant environment in line with business and test plant user needs and Data Transcript development and maintenance. As well as working with his/her colleagues to develop and implement business strategy, objectives and improvement processes, the STP Manager will be responsible for development of his/her team.

It is essential that suitable candidates are educated to degree level or equivalent in a technical subject, or at least 5 years management experience in a multi-disciplined environment. A proven track record in managing people is also essential. An ideal candidate will have been involved in working and leading a team in TCM activities.

Contact: Recruiting Manager, John Burns, john.f.burns@etl.ericcsson.se, +44 1444 234339 or HR, Suzi Cooper, suzi.cooper@etl.ericsson.se, +44 1444 234018.
Application marked 564: myfuture@etl.ericsson.se.

ERICSSON A/S, DENMARK

Software Designer for IP MultiMedia

Our innovative Network Services & Control unit, with sights set on the future, develops systems for controlling network and service solutions for tele-operators. Research and prototyping with new 3G technology.

● As a Senior Software Designer you will be part of an efficient and highly inventive team working in research and prototyping. You will focus on developing new technology and features for third-generation mobile and fixed networks. So you will be there at all the preliminary phases in the existence of new products – when the first idea is born and through "pre-development" to the design of the first prototype.

SW Developer

● Familiar with data communications and/or telecom.

You are probably an engineer, computer scientist or similar with experience in object-oriented analysis/design and programming and also familiar with data communications and/or telecom. You are able to absorb new knowledge fast, and in general you are also good at grasping situations which are highly complex and challenging. We work with object-oriented languages and tools such as UML, JAVA and C++. The protocols we use are standards like SIP, Parlay, INAP or similar IETF and ETSI protocols.

In order to succeed you must be able to function optimally in a dynamic, hectic environment. We are looking for someone who is inventive, positive, shows initiative and is adaptable. Someone who can produce results independently as well as in close co-operation with colleagues. And finally, you must be able to express yourself well both in written and spoken English.

Your future in a new world. You will become part of Ericsson's international professional organisation. You will be working on the threshold of a new world and you will be one of those defining the communications solutions of the future. Once here, only you set limits to the challenges.

Contact: dept. Mgr Carl-Johann Johannsen, +45 33 88 33 88.
Application marked "XXX": nytjob@ericsson.dk, L.M. Ericsson A/S, Sluseholmen 8, 1790 Copenhagen V, Denmark, Attn. Human Resources.

ERICSSON BELGIUM

Senior AXE Troubleshooter

Ericsson Belgium has won several contracts involving AXE10 during the last 3 years, both in wireline and wireless business. A local support organisation has been set up 2 years ago, with now over 20 people. This support organisation will further expand in the coming months. The main challenges are to be prepared to support the 3G networks, and to strengthen its AXE10 expertise.

● We are looking for a very experienced AXE10 engineer. The candidate should have at least 5 years experience with AXE10, including several years in field support.

We expect a person capable of complex fault analysis and resolution (using Plex and Asa), able to write emergency corrections and market corrections, and to participate in upgrades and updates. Working independently and analysing complex problems in a structured way are essential.

The candidate will participate to the 24-hour emergency service. Transfer of knowledge to the local Ericsson staff is one of the main objectives. The environment is one of trust and team spirit, combined with a good customer relationship.We are looking for someone for a period of at least one year.

Contact: Ms. Sarah Foubert, Human Resources Department EBR, sarah.foubert@ebr.ericsson.se or Mr. Serge Vanhoffelen, Manager Customer Support Services, Raketstraat 40, B – 1130 BRUSSEL, serge.vanhoffelen@ebr.ericsson.se.

ERICSSON TELECOMUNICACOES S.A, BRAZIL

PLEASE JOIN US TO CREATE THE FUTURE OF TELECOMMUNICATIONSIN BRAZIL. Just a few months ago Anatel, the telecom regulator in Brazil, decided to issue 1800 MHz licenses for PCS in Brazil. The business potential for Ericsson GSM & WCDMA Systems is enormous.

The work ahead is demanding and challenging. For a giant market such as Brazil without previous GSM experience, there is a lot to do in terms of building up the expertise and procedures required to get the work done. EDB (Ericsson in Brazil) is currently recruiting key staff with GSM experience, contact network and perseverance to work in the technical sales support organisation for new GSM accounts.

Technical Managers

● You have the overall technical responsibility in our Core-3 sales team towards the potential customers. You ensure that all the technical activities are well coordinated and performed in time. You will communicate everything from visions about mobile internet solutions to complex infrastructure questions. The Technical Manager is responsible for technical activities regarding marketing, sales and negotiations. This will cover all issues in providing a full turnkey solution to our

potential customers, as well as communicating our visions of the future development. Highly developed human skills with good multicultural understanding and strong drive are needed in this position. Experience from similar positions and portuguese language skills will be an advantage.

Solution/Product Managers

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

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 next generation systems. You like to work close to customer and in a team where you will contribute to build up the local competence for the concerned solution area and included products. Experience from similar positions will be an advantage.

We are looking for people with a solid competence in one or more of the following solution areas:

Core Network, GSM/ISDN Service Solutions and Products (GMSC, MSC/VLR, HLR, AUC, FNR, Core Network Site Solutions). Core Network, General Packet Radio Services (GPRS) and Products. Customer Care and Billing Solutions (BGw/BMP, SOG). Radio Access Network Solutions and Products (BSC, TRC, BTS, Site Solutions). Transmission Solutions and Products (DXX, Minilink etc.). Operational Support Systems Solutions and Products (OSS,NMS,Fraud). IN Solutions, Applications and Products (SSF, SCF, CAMEL). Prepaid Solutions and Products. Datacom Solutions and Products. Messaging and Other Solutions (SMS, UM, VMS, WAP, Positioning, EIR). Core Network Design Solution Expert. Radio Network Design Solution Expert.

Manager, Core Network Solutions

● You have the line manager responsibilities for personnel and activities related to the core network solutions. This includes planning of all work needed to maintain the core network solutions, products and to perform high quality core network design and offers for our clients. The work includes also planning of all needed technical marketing activities to ensure successful sales. Highly developed human skills with good multicultural understanding and strong drive are needed in this position. Experience from similar positions and portuguese language skills will be an advantage.

Manager, Radio Access Network and Transmission Solutions

● You have the line manager responsibilities for personnel and activities related to the radio access network and transmission solutions. This includes planning of all work needed to maintain the radio access network solutions, products and to ensure high quality radio and transmission network design and offers for our clients. The work includes also planning of all needed technical marketing activities to ensure successful sales. Highly developed human skills with good multicultural understanding and strong drive are needed in this position. Experience from similar positions and portuguese language skills will be an advantage.

Manager, Value Added Solutions

● You have the line manager responsibilities for personnel and activities related to the value added solutions, open platform products and applications. This includes planning of all work needed to maintain the value added solutions, products, applications and to perform high quality dimensioning and offers of these solutions for our clients. The work includes also planning of all needed technical marketing activities to ensure successful sales. Highly developed human skills with good multicultural understanding and strong drive are needed in this position. Experience from similar positions and portuguese language skills will be an advantage.

Contact: Annelie Gustafsson, annelie.gustafsson@edb.ericsson.se, +55 11 6224 8685 or Renato de Oliveira Mello, renato.mello@edb.ericsson.se, +55 11 6224 1101 or Katia Cristina Burri/katia.burri@edb.ericsson.se, +55 11 6224-13-01.

LM ERICSSON TECHNICAL OFFICE U.A.E.

We are providing support and supply for a wide range ofEricsson products and have a growing record as the "first in the world" for introducing new products and functions.Our customers networks are growing rapidly with theexpectations to get the latest new features a.s.a.p.At the present we are 157 employees located in AbuDhabi, Dubai and Al Ain. Life in the U.A.E.offers the best Middle East climate, beautiful beaches, ainteresting mixture of cultures and thereby also the varietyof culinary experiences is great. We are now looking for two CME20, System Support Engineers to join us.

System Support Engineer, CME20

● The main responsibilities for these positions will be to provide technical competence for co-ordination and participation in network investigations, implementations, trouble-shooting, remote loading and problem solving activities on highest technical level inour customers networks. The ability to understand and communicate the customers needs and expectations, towards higher management and other Ericsson companies,is of vital importance. Also of great importance is curiosity, ability to learn new functions/features and the gift to easily facilitate knowledge transfer to less experienced co-workers. Participation in our 24-hour "Call-Out" activities would also be as a part of your duties.

Competence requirements are: Minimum 3 years working experience on AXE10 application systems, of which at least 2 years experience should be on either CME20/CMS30 or CMS40 systems, within either/or/and verification/supply/support. Experience and knowledge in APZ/IOG and IN isan advantage. The initial contract period is 1 year and your base would bein Dubai. Only applications from Ericsson employees will be considered for these two positions.

Contact: Petar Knez, GSM FSC Manager, +971-50 6126897, Petar.Knez@tku.ericsson.se.
Application: Telefonaktiebolaget LM Ericsson Technical Office UAE, ATT: Maria Almoete, HR, +971-2-6968600, Maria.Almoete@tku.ericsson.se.

ERICSSON YUGOSLAVIA

Senior Technical Manager

Ericsson in Yugoslavia (EYU) was established as a local company 1998 and have today 60 employees and is the solid supplier of Mobile Systems on the market.

● We are now looking for a Senior Technical Manager and the main tasks in the position is to advise and support our customer when its comes to their continued expansion plans.

You will ensure that our offers are the best solutions and in addition, continue to build up the technical function within the company such improvement of routines, processes and transfer of knowledge to the local staff. We are looking for you who has a solid technical education and a very good knowledge about all of

Job Opportunities in Ericsson, Ireland

Network Operator Solutions Centre is a leading design centre, which provides Ericsson customers with solutions for the management and control of the multi-service Core and Fixed Access Networks. The unit provides management and control solutions across the Mobile Fixed Access domains.

We focus on providing products and services that reduce the cost of ownership for network operators increasing the efficiency of their networks. We are dedicated to making our products the best of their type in the market.

● **Software Engineers (Open Systems)**
As a Software Engineer you will be working with applications for the management and control of Wireline and Wireless networks within Mobile and Fixed telecom domains. You must have experience in developing on Open Systems (Unix preferably). Necessary skills include; C, C++, Java, Erlang /OTP, use case modeling techniques, Object orientated Analysis and Design techniques, especially UML, RUP (Rational Unified Process). Some telecom exposure and experience with Multi-tiered architectures and real time distributed systems would be of benefit.

● **Software and System Engineers (AXE 10)**
EEI NOSC develop a range of AXE Based Core applications (OAM, Speech Processing) for UMTS, Next Generation Wireline and 2G and 2.5G Mobile Systems. We are seeking competent AXE 10 Software professionals to work in the design, test, team leading and technical co-ordinaton roles in our development projects. We are also seeking Systems Engineers with at least five years AXE and Telecoms experience to work in pre-design phases with the architectural design and specification of applications and features for next generation networks.

● **Software Quality Engineer**
As a Software Quality Engineer you will work proactively towards the organisation's software development units by supporting Project Quality Coordinators, defining and analysing software quality measurements and identifying best practices. The role will involve maintenance of the existing quality system by ensuring compliance to ISO9001:2000 and facilitation of CMMI maturity progression. You will also be required to summarise and present quality system performance at periodic management reviews. Experience and knowledge of quality issues in software development is desirable.

● **Configuration Management Engineer**
We have excellent configuration management systems in existence; the challenge is in managing the transition to Open Systems. We need someone who is still involved with daily implementation issues in software environment. Essential skills and experience include; Degree in computing or software engineering. Two to three years working experience in a design environment. Working knowledge of Clearcase as a tool and an understanding of configuration management issues.

● **Technical Product Manager**
As a Technical Product Manager you will handle customer requirements for Management Applications and features for defining new functionality and adaptations to Telecom Systems. You will write the technical specification documents and communicate these to software designers. Some liaison with sales staff will be required. Essential skills include; a degree or equivalent, 2 years experience in SW design in the Telecom industry. Up to 2 years Systems Engineer experience with an understanding of higher level architecture.

● **Regional Sales Manager/International Account Managers (Telecom Management Products)**
We are building a sales team comprising of a Regional Sales Manager and International Account Managers who will be working within the Americas regions. This team is responsible for establishing new and maintaining existing business in the 'wireline operator market', selling Telecom Management Products. You must have a proven track record of 'in-direct' selling with a background in the Telecom Industry. You must have between 3-5 years experience as a Sales Manager/ Internal Account Manager.

If interested please send your Curriculum Vitae to

Michael McGann
Competence and Human Resources Manager
Ericsson Software Campus
Athlone
Co. Westmeath
Ireland

Or email, stating the job applied for in the subject area recruit.ath@eei.ericsson.se

the Ericsson GSM products and services. We expect that you have been working in a similar position for several years and have experience from working abroad.

Contact: Ljubomir Rajsic, Key Account Manager or Pauli Liimatainen, HR Manager, +381 11 311 3899.
Application: pauli.liimatainen@eyu.ericsson.se

ERICSSON TELECOMMUNICATIE B.V., RIJEN, THE NETHERLANDS

Local Customer Service Organisation. The Local Customer Service Organisation is a unit within the Business Line Customer Services that provides services to our customers in the Netherlands. This organisation is responsible for the operational services sold to KPN, Libertel, Telfort and other operators.

The LCSO consists of a Front Office, Customer Care, Software Maintenance and several, on functionality oriented, back offices. In total, 160 people are working for the LCSO. The LCSO presents itself as a young, professional and innovative team that is closely involved with its customers. Within the LCSO there is a vacancy for:

Technical Support Mobile Intelligent Networks

● As a Technical Support employee you support the Mobile Intelligent Networks software as used in the GSM networks and the future 3G networks.

As a member of a Self-Directing Team your work involves handling customer problems on MIN and playing an active role in supply-activities in projects.

Task description: Handling Customer Service Requests taken by the Front Office and dispatched to you (including 24 hrs. Emergency Support). Write emergency corrections. Troubleshoot (mostly off-site) critical problems in supported systems. Installation, configuration, integration and verification of MIN networks. Maintaining contacts with (internal and external) customers on a technical and professional level.

Required competence: Education on HBO-level, preference HTS I/E. Several years of high level of SW-experience on AXE (incl. DT) on Testing 2 / Testing 3 level. General knowledge on APZ, IOG, GSS and SCP is a need. High level of knowledge on PLEX/ASA as well as experience with Deskchecks and the creation of emergency-corrections. It's a benefit to have knowledge of the Ericsson tools as MHS, MSS, PlexView and ALEX.

Personality: Customer focussed, capable of working on your own as well as in a team, independent, immune to stress, flexible and enthusiastic. Having no problems with now and then making overtime and doing 24 hrs. Last Resort shift. Problem solving attitude. Good communication skills in English and preferably Dutch. The position is based in Rijen.

Contact: Marjolein von Reth, Co-ordinator Recruitment & Selection, +31 161 249850.

ERICSSON SPOL. PRAGUE, CZECH REPUBLIC

Support Engineer, PPS 3.1 and MVPN 2.2.2

Ericsson Czech Republic is looking for two support engineers with a lot of new ideas to work in Prague.

● You will be responsible for supporting the growing customer by providing highly technical professional services in trouble shooting, implementation guidance, analysis and resolution of problem in the PPS or MVPN services on the Intelligent Network.

You will ensure that all necessary information is gathered for resolution of system problems, making independent judgements using your extensive technical knowledge. Familiarity with the MHS, MSS and TR handling is an advantage.

Requirements: You should be experienced with AXE in PPS or MVPN point of view, MSC, SCP and HLR. Good written and oral communication skills in English. Experience with IN Service scripts, SCE/SMS, SDP, PPAS, IVR considered as a plus.

Contact: Tamas Koczka, +420 606 706245, Tamas.Koczka@ecz.ericsson.se

ERICSSON EUROLAB GERMANY-HERZOGENRATH/AACHEN

Section Manager

● MSC System Management, Core Network Mobile Systems. We are looking for an enthusiastic, pragmatic, goal and people oriented manager and colleague. Our department consists of app. 60 experienced System Designer, subdivided into 4 sections.

We are technically responsible for the MSC node and it's role in the Core Network for both GSM and UMTS. Our current main challenges are the 'architecture split', i.e. the evolution of the MSC to a MSC Server and a Media Gateway, as well as the introduction of ATM and IP transmission.

Tasks: Full accountability for: System Studies on both Node and Core Network Level, MSC Node Evolution (UMTS/GSM), MSC Product Handling (UMTS/GSM), O&M Evolution for MSC and related nodes; recruitment, coaching, competence development, performance evaluation and motivation of persons in your section; establishment and development of contact network, interfaces and relations; processes, methods and tools for the area.

Qualifications: Seniority and clearly developed Leadership Skills, insight and proven interest in the whole responsibility area, Network oriented and international, cooperator as well as driver/initiator, System Management experience, Project/Line Management experience, TTM and TTC flow understanding, stable, balanced person, strong interest in people management.

Your main interfaces will be System Management Projects and MSC Main Projects, Total Network/ Core Network System Management, System Management teams in TPSE (Transit Platform and Switching Evolution), System Management teams in various MSC LDC's, Product Management and the EED/X/D Management Team.

Contact: Andreas Thuelig, Department Manager, +49 2407 575 246, Andreas.Thuelig@eed.ericsson.se; Christina Schneidawind, Human Resources, +49 2407 575 7814, Christina.Schneidawind@eed.ericsson.se.

Ericsson Research

***Ericsson Research** is the organization responsible for all research activities within Ericsson. We are a global organisation with research branches in close to twenty different cities around the world. The head office is located in Kista just north of Stockholm, Sweden. Our research projects span over a large spectrum of disciplines, from Mobile Internet Applications to Real Time Routers and further to Signal Processing and Generic Technologies such as Software Defined Radios and VLSI. We are the home of inventions such as GSM, EDGE and WCDMA, representing 2nd and 3rd generation mobile wireless technologies. Now we have just started working on the 4th generation.*

We need to further strengthen the Research organisation in Kista primarily in the areas below.

Access Technologies and Signal Processing

Future wireless communication will put even higher demands on efficient usage of the scarse radio resource. Advanced signal processing related to the air interface is a central part of the challenge to meet these requirements. As a research engineer at our department you will participate in projects with the goals to enhance the performance of existing and future wireless communication systems. Issues of importance are high bitrates, high capacity and large coverage.

Our work is mainly focused on air interfaces, antenna systems and propagation. Adaptive antennas combined with smart receiver algorithms are areas of special interest. The work is performed both in co-operation with appropriate product units as well as towards standardization.

You should have a MSc or PhD degree and interest for communication-, modulation-, coding- and signal processing-theory.

If you are interested in the area above please contact:
Jan Färjh, phone +46 8 764 15 89
jan.farjh@era.ericsson.se
Sören Andersson, phone +46 8 404 23 20
soren.s.andersson@era.ericsson.se
Mikael Höök, +phone 46 8 404 51 40
mikael.hook@era.ericsson.se

Audio Visual Technology

Technologies such as WCDMA and Bluetooth give us the opportunity to introduce new audio visual services in the wireless networks. Audio and video streaming, video telephony and services from the MPEG framework are just some examples of technologies that will enhance the Mobile Internet and make it even easier to stay in contact with family and business.

As a research engineer at our department you will participate in projects with the goals to enhance current services and to create future audio visual services in both wireless and wireline systems.

Our work is focused on source coding (speech, audio, video and image), signal enhancement (noise reduction and echo cancellation) and issues related to transport of media over various types of channels (IP-based and circuit switched over both wireless and wireline).

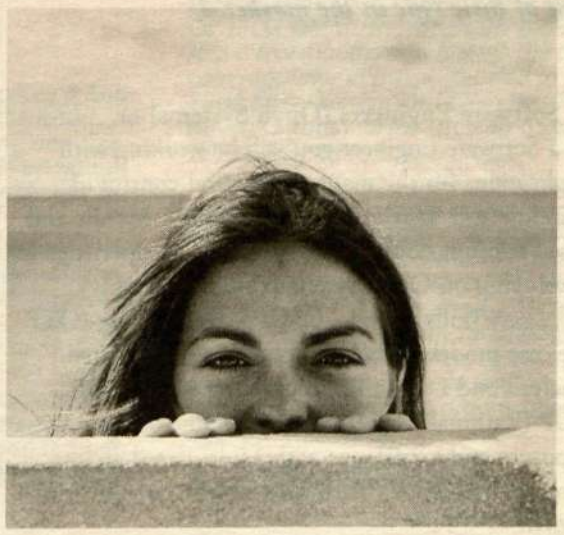
Your efforts as a research engineer in the audio visual field will usually result in international standards, conference papers, patents, demonstrations and Ericsson products.

You should have a MSc or PhD degree in Electrical Engineering or Computer Science (civilingenjör DEFY) or equivalent qualifications, and an interest in audio visual signal processing.

If you are interested in the area above please contact:
Johnny Karlsen, phone +46 8 404 82 90
johnny.karlsen@era.ericsson.se
Torbjörn Einarsson, phone +46 8 757 23 46
torbjorn.einarsson@era.ericsson.se

Please send your application to:

Ericsson Radio Systems AB
KI/ERA/T/HS Cecilia Renefeldt
164 80 Stockholm
cecilia.renefeldt@era.ericsson.se



Make yourself heard.

ERICSSON

Join the Deployment and Support Team of the 3rd Generation UMTS/IMT-2000 Network in Japan.

The deployment of the 3rd Generation UMTS/IMT-2000 Network in Japan has begun and work is underway now across Japan as we continue to build the framework of the UMTS/IMT-2000 Network for our customer. A number of project and line organizations within Nippon Ericsson are now looking for highly skilled and motivated staff to join in this challenging work and positions are available both in the main support center in Shin Yokohama and also in Tokyo, Osaka and Nagoya.

All positions require a strong customer focus and the successful candidate should be able to work well within a team environment. This person should also be able to work with people from a large range of cultural backgrounds and be able to grasp new technology quickly. English fluency is essential with proficiency in the Japanese language being highly desirable. Training as required will be provided and some overseas and domestic travel may be necessary. There may also be a requirement for some staff to be available at times on an emergency support/on call roster.

For further details regarding Nippon Ericsson K.K please visit the webpage at:
http://inside.jp.ao.ericsson.se

For more information on the IMT-2000 Deployment in Japan and other open positions please visit:
http://inside.jp.ao.ericsson.se/sw/

UMTS/IMT-2000 Support Engineers

The successful candidates will be responsible for providing integration and system support during the deployment of the IMT-2000/UMTS network both from the support center in Shin Yokohama but also on site as necessary. After the network is in service these engineers will have a variety of career opportunities in software verification, network integration and system support etc. As the 3G Network is extremely complex, we are looking for engineers from a variety of technical backgrounds i.e Switching, Datacoms, IS/IT, Radio and Unix systems/networks. The applicant is required to have at least 2-5 years experience in a system support, verification or design role in the mobile telecommunications/datacoms fields although applicants with a background in fixed networks are also encouraged to apply.

For further information or to apply for a position please contact:
kasem.mohamed@nrj.ericsson.se
Tel: +81 45 475 4482, Mobile: +81 90 99738717
Fax: +81 45 475 4350

Configuration Management Engineers

In order to manage the hardware and software configuration of the installed network a number of skilled engineers are now needed to assist with the establishment of a IMT-2000/UMTS configuration management competence group. This team will be responsible for gaining a deep understanding of the configuration of network nodes and for the verification and testing of parameter settings, configuration data etc with a focus on datacoms, UTRAN and GGSN/SGSN Packet Data. A variety of engineers will be needed in this team across several competence areas. (Hardware and Software) Engineers and support staff with a strong O&M background are also encouraged to apply. The applicant is required to have at least 2-5 years relevant experience.

For further details please contact:
greg.atkinson@nrj.ericsson.se
Tel: + 81 45 475 4347
Fax: +81 45 475 4350

Project and Technical Managers

We are looking for a number of Project and Technical Managers to help plan and execute the deployment of the 3G Network in Japan. These managers will be responsible for managing sub projects or specialist technical teams across a wide variety of technologies. The applicant should have approximately 2-5 years experience in a similar role and have strong leadership and people management skills. Previous experience in dealing directly with external customers is also highly desirable.

For further information or to apply for a position please contact:
greg.atkinson@nrj.ericsson.se
Tel: + 81 45 475 4347
Fax: +81 45 475 4350

Other UMTS/IMT-2000 Opportunities

A number of other positions do currently exist in a variety of units for system support, installation engineering, radio network planning and datacoms network design staff. Persons interested in working with the deployment or support of UMTS/IMT-2000 in Japan are encouraged to visit the webpages listed above or contact:

Greg Atkinson
Senior Manager, IMT-2000 Network Support
greg.atkinson@nrj.ericsson.se
Tel: + 81 45 475 4347
Fax: +81 45 475 4350

Make yourself heard.

ERICSSON

Open Positions in Software R&D Centres in India

In India, the Software R&D Centers of Ericsson are located in Bangalore (Started in Jan 97), and in Hyderabad (Started in Oct 99).

Bangalore, the Garden City of India, is one of the most developed cities in the world as far as IT industry is concerned and is also referred to, as the Silicon Valley of India. This development, is primarily due to existence of excellent educational institutions like Indian Institute of Science, one of the world's premier acaedemic and research centre, and Indian Institute of Management, Bangalore, one of the best Business schools in India. The emphasis and prevalence of IT has resulted in the growth of cosmopolitan culture in the city. English is one of the most common languages spoken in Bangalore.

The IT industry as such, in Bangalore, has also gained very high degree of maturity and has been the first choice of several multinationals companies working in the areas of IT, and telecom software development. Today more than 160 of Fortune 400 companies have their presence in the city and, have people from around the world working in /with them.

The Bangalore City is located at an altitude of approximately 1000 meters, surrounded by lakes and other water bodies. It boasts of pleasant weather all the year around.

Software R&D Centre, Bangalore

As part of the global R&D strategy, Ericsson has set-up a Software R&D Centre at Bangalore to work with strategic technologies. Highly qualified engineers are working with product development for Performance management, Element management and Network management on telecom applications using Distributed Architectures and Open systems.

Performance management - This is an area for which our software R&D centre in Bangalore is identified as world class competence centre. The focus is on developing systems that are part of Ericsson's mobile network performance management suite of products, across various technologies like GSM, PDC, GPRS, UMTS etc. These products are used by large communication network operators to plan, tune, forecast and troubleshoot their networks.

Element Management - This group works on the development of generic tools for network operators and field engineers to perform traffic recordings, load measurements and alarm handling for several types of network elements in a homogeneous way.

GSM on the Net - This is a fast growing group in Ericsson that combines the mobility of GSM with the power of Internet into a single Voice over IP/GSM system, where the LAN is used to combine telephony, mobility and data with a single infrastructure.

Positions in Bangalore

Design Manager

As a Design Manager at ECI/R you will be leading a team of 20+ designers involved in development of telecom network management applications.

You will also have the product responsibility for these products. You will ensure continuos development of competence and skills in your design team.

Good knowledge and understanding of Ericsson development processes is a must. The successful candidate should have at least 5 years management experience from software development preferably cellular.

Project Manager

We are looking for a Senior Project Manager with a solid background in software development preferably cellular. You would be required to interface with your counterparts elsewhere in the world to ensure that your product seamlessly integrates with other parts of the product suite. The successful candidate will manage large development projects consisting of several teams through all phases of development.

A solid knowledge of Ericsson development processes is a must. The successful candidate should have at least 5 years project management experience within Ericsson.

Specialists

We are looking for Specialists to act as technical leads across several projects and technologies. You should be able to perform feasibility studies, proof of concept prototyping and act as technical interface with our sponsors. The successful candidate will handle system issues such as requirement management, translating requirements into functional specifications during execution. You will act as a mentor within the design teams.

You should have a minimum of 5 years experience in NMS/OMS application development.

System management experience as well as GSM and/or UMTS experience is a must.

Knowledge of AXE switches is a definite advantage. Knowledge of S/W architecture and S/W development life cycle is merit.

For any of the positions the candidate should have good leadership qualities, should be flexible, and fluency in English is essential.

Contact: Hans Bromander, General Manager,
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Application: Chetan Uppal,
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Mobile: +91-98 452 042 99
Phone: +91-80 559 5707 Fax: +91-80 509 5193

Hyderabad is almost a 400-year-old city, which in recent times is known more for its progressive governance and explosive growth in IT field. It is a cosmopolitan city, and with a recent rush of IT multinationals has become more progressive and dynamic in its culture.

Software R&D Center, Hyderabad

At our software R&D center in Hyderabad, we focus on datacom to deliver world-class products and solutions, like IP aggregation for ISPs, Virtual Private Networks for corporates, access plat forms for narrowband and broadband communications, Voice over IP with carrier class QoS and Internet over Cable to name a few.

Positions in Hyderabad

Specialist

As technology leadership is key to Ericsson's market leadership in cutting edge systems. The challenge in this role is to build upon this and maintain it for those systems that are developed at Hyderabad Software R&D center.

We are looking for System Experts to act as technical leads across several projects and technologies.

You should be able to perform feasibility studies, proof of concept prototyping and act as technical interface with our sponsors. The successful candidate will handle system issues such as requirement management, translating requirements into functional specifications during execution.

For further details please contact:
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Application: Chetan Uppal,
Assistant Manager – Human Resources
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Ericsson Eurolab Deutschland GmbH
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. For Wireline we provide the heart of the ENGINE solutions.

To secure the continued Evolution of one of Ericssons most successful products our Transit Platform and System Evolution (TPSE) System Management, Product Management and Lab is looking for your support.

Group Manager Systems Management

Your main responsibility will be to secure the technical success of the TPSE projects by organising the complete technical co-ordination activities for the TPSE main projects. Running the TPSE Systems Management subprojects belongs also to the group's activities. An additional responsibility is the handling of all Systems Management related Assignments involving our international TPSE internal and external partners.

Strategic Product Managers System Evolution

In this key position, your goal is to champion and drive the strategic evolution of TPSE products across and within domains such as Call Control, Signalling, O&M ISP, Capacity etc. You contribute to TPSE strategies in a system evolution team spanning Product Management, System Management and the System Evolution Lab.

Co-ordinating and aligning strategies (the "What", "Why" and "When") is one major challenge in this position.

Do you have the interpersonal skills, drive and perseverance? Have you got the ambition to combine technical and business aspects into a strategic solution?

Strategic Product Manager – Domain Responsible

In this position you are responsible for securing planning of products at the right time by co-ordinating product management activities in your product domain as e.g. Call Control, Signalling, O&M, Datacom. You constantly make sure that Product Plans/Roadmaps in your domain are aligned to the TPSE Plans and Roadmaps.

Systems Management ISP Responsible

In this challenging position, you shall define TPSE systems management policy for usability, reliability and availability of our products. You shall drive this program within and outside TPSE. You shall trigger appropriate investigations, define, clarify and promote system wide ISP initiatives.

You shall be required to participate in or run ISP forums and you will be an integral part of our System Evolution Team.

If you can combine your good communication and leadership skills with high ambition and perseverance, and you have a good knowledge of ISP, then this is the job for you.

Systems Management O&M Responsible

As O&M responsible you have the important task of defining and driving TPSE systems management policy for O&M. You shall drive this program within and outside TPSE. You shall initiate O&M investigations, define clarify and promote system wide O&M items.

You shall be required to participate in or run O&M forums and you will be an integral part of our System Evolution Team.

If you know O&M, have the ambition and determination to make things happen and if you can inspire others with your vision, then contact us.

Systems Management Capacity Responsible

As the capacity requirements on our products push us to new limits, your essential challenge is to drive capacity solutions within and outside TPSE. You shall initiate capacity investigations, define clarify and promote system wide capacity initiatives.

You shall be required to participate in or run capacity forums and you will be an integral part of our System Evolution Team.

If you can combine your good communication and technical skills with drive and perseverance, and you have a good knowledge of capacity issues, then contact us.

Systems Management Subproject Leaders

You shall be responsible for the project co-ordination of the TPSE System Management subprojects, control the allocated resources within TPSE System Management and their assignments. This involves handling issues such as organisation, status, workload, competence etc. You shall keep track of project related technical issues concerning TPSE System Management and provide On-the-ground support of TPSE Systems Management issues towards Technical Co-ordinators. You shall be the TPSE Systems Management interface towards associated project management.

You should have good technical, organisational and communication skills and be proactive in rooting out and highlighting potential problems. Experience in or ambitions towards project management is needed. Knowledge of Ericsson organisation is desirable.

Systems Manager, Network architecture

Your main responsibility will be to drive and participate in system studies related to the overall design of network control protocols making up the new architecture of 3G networks. It involves cooperation with ongoing standardisation work as well as Prestudy and Pre-Prestudy work.

You will be part of a team with a highly developed competence, and the challenges and opportunities are endless in this area that lies on the cutting edge of the new telecom/datacom arena, where the technology emerging draws from the best of the traditional telecoms world and the packet/IP world.

A good understanding and interest of these two worlds are therefor seen as natural for the applicant to possess.

Technical Coordinators TPSE Main Project

In this central position, your responsibility is to ensure the smooth technical running of TPSE main projects. You are responsible for the complete technical co-ordination activities and run the technical co-ordination network.

Candidates should be tough, flexible and good at working under pressure. Excellent technical and communication skills are required. Previous technical co-ordination experience and/or knowledge of Ericsson products and processes are a big help.

MC-108 / PC-106 Chairmen

This is a key position in our organisation and you will be part of a Product committee's team with a very high competence. Your main responsibility will be to manage and develop one of TPSE Product committees that have the important task of securing the technical quality, profitability and the consistencies of our products. You will also contribute to system studies in the overall system design of the new 3G architecture in next generation solutions. This area lies on the cutting edge of the new open telecom/data-com technology emerging from the best of the traditional telecom world and the packet/IP world.

A successful candidate should have a very good understanding of several AXE subsystems or overall System design. Excellent interpersonal and communication skills are needed to conduct successful meetings involving the Ericsson key AXE and system competence.

TPSE Quick Study Coordinator

In our dynamic environment, we are constantly initiating, running and analysing quick studies looking at how we evolve or improve our products. As QS co-ordinator, you manage follow-up on and understand our quick studies.

Good organisational, technical and communication skills coupled with a desire to learn about all our different products are essential qualities, which the successful candidate will bring to this position.

Systems Management Datacom Responsible

As one of four so called International Line Units, ILU Datacom consists of product areas such as ATM signalling (BICC, H.248 and Q.AAL2); Circuit Switched Data, Internet Access Server and application signalling transport. All of these areas are undergoing very challenging times driven by the IP boom. Your main responsibility will be to co-ordinate the system activities towards ILU Datacom. Main interfaces are to Product Management and the projects, for handling of technical issues in the early phases as well as towards established projects.

Systems Managers Standardization

TPSE is instrumental in putting Ericsson first on the market with 3G products for mobile as well as fixed networks. As part of this role, TPSE is responsible for standardisation of some key protocols in the new network architecture, such as BICC (Bearer Independent Call Control) and H.248 (Media Gateway control protocol). These protocols are fundamental when implementing 3G products, and are also developed within the TPSE organisation. Your role will be to drive the standardisation work in this area, and also to, from a system management position, make sure the work is in line with overall standardisation strategies as well as with development projects.

Systems Manager Market Support

In this front-end position, you will be responsible for providing market support on the TPSE portfolio of products. This will entail co-ordinating, investigating, forwarding and following-up on queries as well as defining processes and providing statistics.

Do you have good communication and technical skills, flexibility, inquisitiveness and a strong desire to learn lots about our systems? – Yes?

Systems Managers ISP

You will be responsible for executing systems management tasks such as quick studies in the areas of usability, reliability and availability. You will support the systems management ISP responsible in their tasks as required and participate as appropriate in ISP related forums. You will be required to develop skills in other areas of system evolution.

Your good technical skills combined with knowledge, interest and a desire to grow in the ISP area are the essential qualities you will bring to this position.

Systems Managers O&M

You will be responsible for executing systems management tasks such as quick studies in the area of O&M. You will support the systems management O&M responsible in their tasks as required and participate as appropriate in O&M related forums. You will be required to develop skills in other areas of system evolution.

Your good technical skills combined with knowledge, interest and a desire to grow in the O&M area are the essential qualities you will bring to this position.

Systems Managers Capacity

You will be responsible for executing systems management tasks such as quick studies in the areas of capacity and dimensioning. You will support the systems management capacity responsible in their tasks as required and participate as appropriate in forums. You will be required to develop skills in other areas of system evolution.

Your good technical skills combined with knowledge, interest and a desire to grow in this area are the essential qualities you will bring to this position.

Systems Managers HW&SW Platform

TPSE Platform Management ensures that the portfolio of platform products meets the present and future needs of the applications in terms of functionality, characteristics and cost. This work involves a broad range of system level activities such as platform evolution strategies, requirement specifications to platform providers (mainly CNCP), tollgate assessments, and system studies to evaluate the HW & SW impact of new platform products and HW technical co-ordination within TPSE main projects.

Strategic thinking, strong co-ordination skills and a sound judgement of different technical solutions are the key assets for this position.

MC-108 / PC-106 Trainee

This is a key position in our organisation and you will be part of a Product committee's team with a very high competence. Your main responsibility will be together with the chairperson run and develop one of TPSE Product committees that have the important task of securing the technical quality, profitability and the consistencies of our products. You will also contribute to system studies in the overall system design of the new 3G architecture in next generation solutions.

A successful candidate should have a solid knowledge in at least one of the Core Unit Switching Products or CNCP products and a strong interest to drive for structured solutions.

Master Systems Manager TPSE Products

You shall initiate and drive technical investigations in any areas of the TPSE portfolio. You shall as required lead international teams outside or in the early phases of projects.

Qualifications: Candidates should have excellent technical, organisational, communication and leadership skills. Previous technical experience with TPSE products is a major advantage.

Systems Manager TPSE Products

You perform technical investigations related to the TPSE portfolio in co-operation with our TPSE experts in EED and around the world. Such investigations can be part of early phases of projects or quick investigations.

Qualifications: Candidates should have a good background in one or several Ericsson products and the genuine interest to work on overall system level. Previous technical experience with TPSE products is merit, but not a prerequisite.

System Evolution Laboratory

The lab is driving the future development of our platforms and architectures, providing TPSE with a leading technical edge, based upon state-of-the-art technologies.

Senior Lab Engineers

Your will actively participate in all phases of our studies, predevelopments and prototypes. Your goal is to play a key technical role in our system evolution.

Qualifications: You preferable have practical software design experience from one or more telecom systems.

Master Lab Engineers

Your goal is to initiate and champion technical innovations and prototypes, striving for excellence in our future system architecture.

Qualifications: As a member of the Lab, you should have good understanding of distributed and parallel processing systems and experience with one or more telecom platforms.

Lab Project Responsible

Your will lead our technical studies, predevelopment and prototypes. Your goal is to successfully co-ordinate all necessary activities, ensuring co-operation with our international TPSE partners.

Qualifications: Candidates have a genuine interest in technology and have good organisational and communication skills.

If you are interested, please contact us:

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Do you want to work in one of the most challenging and interesting countries within the field of telecommunication?

Taiwan Network Design and Performance Services is now looking for interested professionals to to work within the following teams:

- *Radio Network Design*
- *Radio Performance Improvement*
- *Core Network Design and Performance Improvement*
- *Transmission Network Design and Performance Improvement*

Taiwan Network Design and Performance Services is a new service delivery unit being built in the Asia Pacific (AP) region. The delivery area will primarily be Taiwan but also the AP region if necessary, in order to maintain competence and to support other markets in need. The design teams will be largely involved in supporting KAM's and NAM's in the 3G/WCDMA license bids and tenders. The performance teams will deliver services in the field of both 2G and 3G. We have a challenging but also very interesting task ahead of us to build up the service delivery organization and we are now looking for interested professionals to join us.

Ericsson Taiwan wants expertise in both team management and related Network Design and Performance skills. Emphasis will be put on knowledgetransfer and to coach the teams to become high-end service providers.

We are located in Taipei and are working with one of the most rapidly expanding markets in the Asia-Pacific region. Taiwan has leading edge operators on a deregulated market competing with the latest applications and services.

FOA trials are common and pre-releases of software and demo solutions are seen as a necessity from our customers to enable them to stand up to the competition. A WCDMA container demonstration has just concluded that enabled all current and prospective customers to get a 「taste」 of the New Telecoms World just around the corner with a second WCDMA test system on its way. In short, it's all happening in Taiwan.

For Ericsson Taiwan to be able to meet these challenges we are now searching for expertise in the following areas:

Radio Network Design Manager

You will co-ordinate and handle competence build up of a group of 10 to 15 Radio Network Design engineers. The team will specialize on radio network design of 3G/WCDMA systems but will also deliver high-end services within the GSM design field such as high capacity design solutions and methodologies. Services will cover design activities for pre-sale, implementation and post-sale. We are now looking for a candidate with skills in management and know-ledge transfer and who has expertise in radio network design to lead this team.

Radio Network Design Engineers

You will work in a team with 10-15 Radio Network Design engineers. The team will specialize on radio network design of 3G/WCDMA systems but will also deliver high-end services within the GSM design field such as high capacity design solutions and methodologies. Services will cover design activities for pre-sale, implementation and post-sale. We are now looking for candidates with skills in know-ledge transfer and who have expertise in radio network design to act as mentors in the team.

Radio Network Performance Improvement Manager

You will co-ordinate and handle competence build up of a Team of around 4 Radio Network Performance Improvement engineers. The team will deliver Radio Network Performance Improvement services for GSM and, in not too distant future, 3G/WCDMA networks. The task will consist of making/delivering presentations of our services, coordinating employee training paths, transfer of knowledge and on the job training. Emphasis will be put on building the competence within the Team . We are now looking for a candidate with skills in management and knowledge transfer and who has expertise in radio network performance improvement to lead this team.

Radio Network Performance Improvement Engineers

You will work in a team of around 4 Radio Network Performance Improvement engineers. The team will deliver Radio Network Performance Improvement services for GSM and, in the not too distant future, 3G/WCDMA networks. The task will besides delivering services, consist of being a mentor for the team , making/delivering presentations of our services, transfer of knowledge. Emphasis will be put on building the competence within the team. We are now looking for candidates with skills in knowledge transfer and who have expertise in radio network performance improvement to act as mentors in the team.

Core Network Design and Performance Improvement Manager

You will co-ordinate and handle competence build up of a Team of 8 to 10 Core Network Design and Performance Improvement engineers. The design work will include new designs for new 3G/WCDMA license operators as well as helping GSM operators to migrate to 3G/WCDMA solutions and to expand their current GSM systems. Services will cover design activities for pre-sale, implementation and post-sale. The performance improvement services will be delivered to our GSM operators and, in the not too distant future, 3G/WCDMA operators. The task will consist of making/delivering presentations of our services, coordinating employee training paths, transfer of knowledge and on the job training. Emphasis will be put on building the competence within the team . We are now looking for a candidate with skills in management and knowledge transfer and who has expertise in core network design and performance improvement to lead this team.

Core Network Design Engineers

You will work in a team of 8 to 10 Core Network Design and Performance Improvement engineers. The design work will include new designs for new 3G/WCDMA license operators as well as helping GSM operators to migrate to 3G/WCDMA solutions and to expand their current GSM systems. Services will cover design activities for pre-sale, implementation and post-sale. The task will besides delivering services, consist of being a mentor for the group, making/delivering presentations of our services, transfer of knowledge. Emphasis will be put on building the competence within the team . We are now looking for candidates with skills in knowledge transfer and who have expertise in core net-work design to act as mentors in the team.

Core Performance Improvement Engineers

You will work in a team of around 8 to 10 Core Network Design and Performance Improvement engineers. The performance improvement services will be delivered to our GSM operators and, in the not too distant future, 3G/WCDMA operators. The task will besides delivering services, consist of being a mentor for the group and transfer of knowledge. Emphasis will be put on building the competence within the team . We are now looking for candidates with skills in knowledge transfer and who have expertise in core performance improvement to act as mentors in the team.

Transmission Network Design and Performance Improvement Manager

You will co-ordinate and handle competence build up of a group of 8 to 10 Transmission Network Design and Performance Improvement engineers. The design work will include new designs for access and backbone network for new 3G/WCDMA license operators as well as helping GSM operators to migrate to 3G/WCDMA solutions and to expand their current GSM systems. Services will cover design activities for pre-sale, implementation and post-sale.
The performance improvement services will be delivered to our GSM operators and in the not too distant future, 3G/WCDMA operators. The task will consist of making/delivering presentations of our services, coordinating employee training paths, transfer of knowledge and on the job training. Emphasis will be put on building the competence within the team . We are now looking for a candidate with skills in management and knowledge transfer and who has expertise in transmission network design and performance improvement to lead this team.

Transmission Network Design and Performance Improvement Engineers

You will work in a team of around 8 to 10 Transmission Network Design and Performance Improvement engineers. The design work will include new designs for access and backbone network for new 3G/WCDMA license operators as well as helping GSM operators to migrate to 3G/WCDMA solutions and to expand their current GSM systems. Services will cover design activities for pre-sale, implementation and post-sale.
The performance improvement services will be delivered to our GSM operators and in the not too distant future, 3G/WCDMA operators. The task will besides delivering services, consist of being a mentor for the group and transfer of know-ledge. Emphasis will be put on building the competence within the team . We are now looking for candidates with skills in knowledge transfer and who have expertise in transmission network design and performance improvement to act as mentors in the team.

Are you interested to take the challenge?
Mark your CV with the wanted position and send it to:
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Information about the positions can be given by Jonas Ericson,
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For more information about ERT and Taiwan, please visit :
http://www.ert.ericsson.se http://www.lonelyplanet.com
http://www.sinica.edu.tw/tit/

Make yourself heard.

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