

Ericsson enables entry into all-IP wireless network

- Launches world's first IP Base Station System

Ericsson's IP Base Station System smoothly transitions current wireless access networks into the demanding world of wireless IP communications. Ericsson's system offers operators substantial cost savings – through a more than 40 percent more effective use of the transport capacity in the wireless access network.

Ericsson's new system is a first important step to an all-IP wireless network. It enables operators to upgrade or build their networks to more efficiently handle the huge traffic increase expected in tomorrow's mobile networks. The system also offers – for the first time – an IP-based solution for wireless access networks with ensured quality of service for voice and other realtime sensitive services.

Ericsson's IP Base Station System (IP-BSS) is being demonstrated for the first time, this week live at an exhibition in Cannes.

A smooth transition

For operators, Ericsson's new IP-BSS offers a smooth transition from current infrastructure to an all-IP wireless access network – while reusing installed equipment.

Optimized to efficiently fuse emerging wireless packet-based datacom services with today's circuit-switched services, the IP-BSS is built on open and scalable network platforms. Its layered architecture is future-proof for the mobile Internet and aligned with evolution of IP in 3G (third generation). Ericsson's system is easily introduced into existing GSM and TDMA networks in an evolutionary approach to 3G.

Priority of realtime services

The IP-BSS incorporates a realtime wireless optimized implementation of the Differentiated Services (DiffServ) standard to classify and prioritize traffic. This emerging standard is especially well suited to the characteristics of wireless access networks, where traffic is well defined and known.

The prioritization of traffic in Ericsson's IP-BSS makes it possible – in an industry-first – for GSM base stations to deliver delay sensitive services, like voice and video conferencing, over IP. 'Best effort' data is also efficiently handled, which means that operators can fully realize the benefits of a packet-based wireless access network.

With Ericsson's IP-BSS, data traffic can be run as low priority traffic within the BSS network, together with high priority services such as voice. This leads to increased flexibility in the dimensioning of the network and significant transmission savings compared to current circuit-switched solutions, where bandwidth is peak allocated.

The new Ericsson Realtime Router RXI 820 for wireless networks is an important enabler of IP in the IP-BSS. The router is based on the same platform as the Ericsson Media Gateway for WCDMA third generation networks. This platform offers a common packet-switched core that efficiently handles both IP and ATM traffic.

The RXI 820 is specifically designed for the demanding requirements of wireless networks, like need for efficient handling of small delay-sensitive packets over low bandwidth, error-prone links. This Ericsson realtime router technology is implemented in all routers of the IP-BSS solution allowing realtime services to be handled in the BSS without loss of quality of service.

For further information about the Ericsson Realtime Router RXI 820, see press release “Ericsson unveils world’s first realtime router for wireless networks.”

The IP-BSS system also includes a BSS Gateway, which interconnects the IP-BSS to the core network and performs required signaling and media gateway functions.

Live demo in Cannes

During a live demonstration of the IP-BSS, visitors to the Ericsson stand at the GSM World Congress in Cannes France, could try out the new system first-hand.

Data traffic in the form of graphic illustrations was being sent at a steady rate from Sweden to the Ericsson stand in Cannes. To illustrate the IP-BSS traffic prioritization (DiffServ) feature, visitors at the stand were invited to make realtime GSM phone calls over the same wireless access links. They could then observe how the rate of transmission of the graphic illustrations slowed slightly, at the same time as they experienced no delay in the voice quality of their mobile phone call.

Cost savings for operators

Today a major cost for an operator in running a mobile network is in transporting traffic in the wireless access networks. Transporting traffic in backbone networks constitutes a smaller cost.

With the new IP-BSS, operators can more effectively transport traffic in their wireless access networks. Ericsson estimates that operators could thus gain substantial cost savings through a more than 40 percent more effective use of the transport capacity in the wireless access network. The exact amount of savings will vary, depending on an operator’s specific network configuration and traffic mix.

With its new layered architecture, the system introduces a Radio Network Server. This enables operators to also offer shorter time to market for services, as well as the means for optimizing network resources.

Ericsson’s IP-BSS marks an important step forward in the transition to all-IP based wireless networks. IP-based networks can offer operators, faced with a new traffic mix, significant advantages – simplicity and reduced operating costs, more efficient utilization of network resources, and new revenue opportunities through enhanced service offerings to their users.

Ericsson is the leading provider in the new telecoms world, with communications solutions that combine telecom and datacom technologies with freedom of mobility for the user. With more than 100,000 employees in 140 countries, Ericsson simplifies communications for its customers – network operators, service providers, enterprises and consumers – the world over.

Please visit Ericsson's Press Room at: <http://www.ericsson.se/pressroom>

FOR FURTHER INFORMATION, PLEASE CONTACT

Johan Wiklund, Ericsson Corporate Communications
Phone: +46 70 560 0134; E-mail: johan.wiklund@lme.ericsson.se

Stig-Rune Johansson, General Manager, Base Station Systems
Ericsson GSM Systems
Phone: +46 70 572 5480, +46 8 757 2448
E-mail: stigrunejohansson@era.ericsson.se

Göran Coster, Product Manager, Base Station Systems
Ericsson GSM Systems
Phone: +46 8 508 77339, +46 70 246 9162
E-mail: goran.coster@era.ericsson.se

FURTHER INFORMATION ON NEW SYSTEM

Layered server-based architecture

Ericsson's IP-BSS introduces – in mobile networks – a new layered architecture that separates traffic and control functions. It separates the network traffic from control functions like signaling, giving operators greater flexibility to configure fast changing needs in the access networks.

The new architecture is open and scalable, with distributed processing capacity that ensures operators very high availability and reliability. The new architecture for BSS allows all voice and data traffic between radio base stations and the core network to be cost-effectively transported over IP, without any loss of quality of service. The architecture's common IP transport layer also enables shorter time for network upgrades.

Efficiently handling the range of services

The IP-BSS takes an innovative approach to handling the “bursty” traffic characteristics of new packet-based services, the kind of traffic that GPRS and EDGE technologies are being introduced to handle. It handles the range of new packet-based services more cost-effectively, whilst maintaining the high service quality levels for realtime services.

The system introduces packet technology and quality of service separation, allowing operators to more efficiently dimension the networks. There is no loss in quality of service, as delay sensitive traffic is always prioritized. By adding IP technology, with its connectionless structure, Ericsson's new IP-BSS offers an optimum solution for handling wireless voice and data simultaneously.

Main building blocks

Ericsson's IP-BSS consists of five main building blocks. They are:

- Radio Network Server
- IP network
- BSS Gateway
- Radio Base Station
- Operations and Maintenance System

The **Radio Network Server** (RNS) handles all radio network functions, for example hand-over and channel allocation. The RNS has an open platform architecture and is built on a new common server platform from Ericsson that utilizes open industry standard boards and components to enable fast adoption to new technologies. The architecture ensures full scalability and high reliability.

The realtime capable **IP network** consists of the new Ericsson Realtime Router RXI 820 optimized for wireless networks. The router is based on the same platform as the Ericsson Media Gateway for WCDMA. This platform offers a common packet-switched core that efficiently handles both IP and ATM traffic.

Ericsson's new router has been specifically designed for the wireless realtime environment in a wireless access network, faced with requirements such as efficient handling of small packets, low bandwidth links and delay sensitive traffic. The system's capacity to handle dual stack IPv4/IPv6 ensures that it is future-proof. The Ericsson realtime router technology is also embedded in other radio network nodes such as radio base stations and gateways.

A **BSS Gateway** interconnects the IP-BSS to the core network and performs required media gateway functions. It specifically handles speech transcoding, packet data and SS7 signaling. BSS Gateways adopt the IP traffic to the GSM standard A and Gb interfaces.

Radio Base Station. Existing radio base stations from the Ericsson RBS 2000 family need only a minor hardware and software upgrade to support IP, thus providing a quick and cost-effective introduction of Ericsson realtime router technology in the radio base stations. Introduction of IP in the network does not effect any functional changes to voice and datacom services over the air interface, and there is no impact on the current GSM air interface.

Operations and Maintenance system. The system also offers operators simplified Operations and Maintenance, through plug and play functionality and web-based access to every network element. The connectionless IP architecture simplifies configuration of the BSS network. Because each network element has an embedded network element manager, most O & M can be performed in the network element itself.