CASE STUDY

Backhaul of voice and data from mobile/wireless networks over IP/Ethernet infrastructure provides substantial cost savings for European universities

A leading engineering university in Europe has established a mobile/wireless network that will be shared by more than 32 universities throughout Europe. This network not only provides students with mobile voice and data services, it also serves as a test environment for advanced communications research projects.

The challenge

The customer needed a cost-effective, efficient method for the integration and aggregation of mobile/wireless traffic, both voice and data, over an IP/Ethernet network. An important consideration was the ability to ensure high-quality voice service over a packet-based network in the face of increased-bandwidth data services while utilizing existing IP/Ethernet QoS mechanisms. Another consideration was the need for a solution that could be easily upgraded to support not only 2G and 2.5G but also 3G services. This mandated a single access platform at the BTS/Node B that could handle the HDLC- and Frame Relay-based data traffic of GPRS, and also the ATM traffic as UMTS services are rolled out. The requirements also necessitated an access device that supports the 50 ppb clock synchronization requirements of the 3G NodeB.

Axerra Networks' solution

Our expertise in the aggregation, adaptation, and IP service interworking of any voice or data mobile service, whether 2G, 2.5G, or 3G, to IP, IP/MPLS, and Ethernet networks enabled us to offer an efficient, cost-effective solution. By deploying our AXN Pseudo-Wire Gateways and Access Devices™ in the Radio Access Network, we were able to efficiently backhaul multiservice traffic from BTS and NodeB cell sites back to Base Station Controllers and Radio Network Controllers over the IP/Ethernet infrastructure.

Our AXN Pseudo-Wire Gateways and Access Devices control the latency, jitter, and packet loss that are critical for reliable voice applications over packet-based networks. We also addressed the challenge of providing accurate clock synchronization between the BTS/NodeB and the BSC/RNC, a key requirement for the successful transport of voice and data over an IP/Ethernet packet network, especially as networks migrate to 3G services.

Key benefits

- Substantial OpEx savings in the RAN
- Efficient transport of voice and data services
- Scalability for future expansion to 3G networks