Unlock fronthaul efficiencies in the evolving RAN landscape

Unlock fronthaul efficiencies in the evolving RAN landscape

As mobile networks evolve toward more open, flexible, and high-performing architectures, the fronthaul segment is undergoing a significant transformation. Ericsson RAN Connect is a unified, high-capacity fronthaul solution that addresses these changes — offering scalable, on-demand performance, enhanced RAN Compute power, and significantly lower operational costs for next-generation RAN deployments.

Accelerate your journey to high performance with Ericsson RAN Connect.

Drivers for RAN Connect

As mobile networks continue to become more flexible, scalable, and open, the RAN evolution will change the Fronthaul part of the network, creating new opportunities. This drives the need for a new portfolio to cater to the requirements of Open Fronthaul − Ericsson RAN Connect.

Evolution to packet
A notable change is the use of packet technology in eCPRI instead of time-division multiplexing (TDM) in CPRI. By utilizing a packet network in fronthaul, the bandwidth needs will be reduced through statistical multiplexing gains, while introducing more architectural flexibility.

Evolution toward open networks
Open fronthaul is a crucial element of a high-performing, programmable network, allowing interoperability with equipment from other vendors and supporting a competitive ecosystem. By adopting open interfaces, Ericsson encourages collaboration and innovation in the industry.

RAN Compute evolution
As the baseband portfolio becomes more capable in handling more cells, it´s possible to aggregate multiple radios onto the basebands. This requires advanced solutions for port extension, especially for centralized use cases.

Evolution to flexible connections
Today's static point-to-point connections between radio and baseband are becoming inefficient, limiting network flexibility and resilience. New any-to-any connectivity is introduced to aggregate more radios into available baseband ports. Moving from static to dynamic connections will enable robust, flexible and high-performing networks with simplified operation.

Latency evolution
The latency tolerance is projected to rise from today's 100 microseconds to 150 microseconds, corresponding to a distance of 20−30 kilometers between radios and baseband. This change will allow for the implementation of centralized RAN architecture with many antennas sites served from a single hub.

Ericsson RAN Connect portfolio

Ericsson RAN Connect enables communications service providers (CSPs) to aggregate radio traffic onto a high-capacity fronthaul interface, unlocking the full potential of modern RAN Compute capabilities.

RAN Connect 6381
An all-outdoor solution supporting 600 Gbps capacity with high scalability and efficiency:

- 600 Gbps capacity
- 3x25 GE + 18x50 GE + 2x200 GE interfaces
- Outdoor, 14 kg
- RAN-centric sync features
- 48 W typical*

RAN Connect 6681
A versatile 600 Gbps indoor option optimized for a wide range of interface configurations:

- 600 Gbps capacity
- 6x25 GE+18x50 GE+2x200 GE interfaces
- 1 RU, 19", 340mm depth
- RAN-centric sync features
- 53 W typical*

RAN Connect 6682
A high-capacity fronthaul solution with up to 1.2 Tbps throughput, ideal for large-scale deployments:

- 1.2 Tbps capacity
- 1x25 GE+31x50 GE+4x200 GE +2x400 GE interfaces
- 1 RU, 19", 290mm depth
- RAN-centric sync features
- 56 W typical *

* Typical power consumption without transceivers

Benefits of Ericsson RAN Connect

Ericsson RAN Connect provides extensive performance and operational advantages for your RAN, supporting the increasing requirements for dynamic capacity and computing resources.

By centralizing compute resources, Ericsson RAN Connect enhances efficiency, scalability, and overall network optimization for advanced C-RAN deployments. Additionally, it enables communications service providers to implement agile, adaptable, and high-performing D-RAN sites that facilitate effective network adjustment and support investment protection.

Optimize your RAN performance with Ericsson RAN Connect, and take advantage of these key benefits:

Efficiency
Unleash the full potential of RAN Compute through improved utilization of the compute power. Ericsson RAN Connect enables up to 33% more radios per RAN Compute.

Resilience
Leverage an industry-leading sync solution with RAN-centric sync features and simultaneous fronthaul and backhaul sync support, providing up to 15x longer hold-over for TDD radios.

Simplified operations
Connect radios to different RAN Compute remotely with a click—no need for fronthaul recabling. This dramatically improves operational efficiency, reduces costs, and enables agile network reconfiguration.

Future-proof
Enable an easy evolution to Cloud RAN and Centralized RAN deployments by aggregating radio traffic to a high-capacity fronthaul interface, opening up options for new architectures and higher traffic volumes.

Radio to specific
baseband interface

Aggregate radios to a high-capacity fronthaul interface

Simple evolution
to Cloud RAN

Simple evolution
to Centralized RAN