ERICSSON

Ericsson 5G Transport

A breadth of solutions for 5G Transport to connect services everywhere

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Are you setting up your networks to bring 5G to life or evolving it for higher capacity and coverage? Regardless of your objective, Transport has and will continue to play an important role in meeting future capacity needs cost-efficiently. As a trusted partner, Ericsson delivers what our customers need while reducing complexity and cost to help them prepare for various network scenarios, including Cloud and Open RAN. With our future-proof and scalable transport portfolio, you can effectively build for the future in today's networks.

Scaling up bandwidth and capacity

More bandwidth and capacity have been key since the first deployments of mobile networks. New NR spectrum, better utilization of available spectrum, and coordination features increase the bandwidth and lead to a higher demand for capacity in the transport network.

Low latency

Low latency is essential for coordination features over the new radio interfaces in both 5G deployments and for certain use cases, such as critical IoT. Transport is crucial in meeting the new 5G requirements for enhanced performance and for making the most efficient use of the radio access spectrum.

Add more connections and new interfaces

As radio functions, such as packet processing and radio control, are pushed higher up in the network, new packet interfaces are introduced in the transport domains. Virtualization, centralization, and cloudification also come into play. These new radio interfaces all have different characteristics in terms of bandwidth and latency. The transport network, therefore, needs to evolve to take full advantage of all radio capabilities and increase 5G performance.

Provide security end-to-end

Security needs to be distributed and scalable across the whole network. Transport networks play a vital role in this: transmission secured end-to-end is crucial for many new services that 5G caters to. The demarcation between trusted and untrusted domains must be part of the security solution.

Sync support

Synchronization support in mobile backhaul is crucial to enabling TDD-based 5G radio networks and guaranteeing radio performance. Backhaul routers and microwave nodes are used to efficiently distribute time, phase, and frequency sync as part of the overall sync solutions for enhanced radio coordination and 5G use cases.

Assured Quality of Service (QoS) and automated operations

The demand for guaranteeing service quality in all traffic types will increase. The shift from dominant mobile broadband to multiple services supported by network slicing drives the need to manage different QoS requirements and to do this dynamically. Intelligent, automated coordination between RAN, transport, and mobile core networks is central to any robust, sustainable 5G solution. Building a service-based network with an intelligent and agile infrastructure enables service providers to take advantage of network automation.

Energy efficiency and other cost advantages

5G networks benefit from purpose-built and energy-efficient transport systems that support simplicity, scalability, and flexible solutions, at any bit rate and for any protocol. To ensure flexibility and reduce implementation costs, service providers can deploy a combination of fiber and microwave transport technologies.

A comprehensive 5G transport portfolio

The transport network is the fabric of RAN and is a foundation for meeting higher demands with much greater data volumes and a range of new requirements. What makes Ericsson 5G Transport offering unique is the breadth of solutions that will help service providers meet the massive increase in traffic as the industry rapidly moves to 5G and beyond. It encompasses microwave, routing, and optical solutions, coupled with AI-driven analytics and SDN automation for high-performing RAN-near transport. Our 5G Transport portfolio delivers the capacity, latency, and reliability needed to build and evolve 5G networks everywhere.

Flexible and modular transport solutions for any deployment scenario

Varying network requires demand-tailored solutions. This increases the need for flexible solutions that scale without high up-front costs and ensures the required reliability. Scalable, flexible, and cost-efficient fiber- and microwave-based solutions provide superior performance and support various RAN architectures like D-RAN, C-RAN and Cloud RAN, interfaces, and transport media.

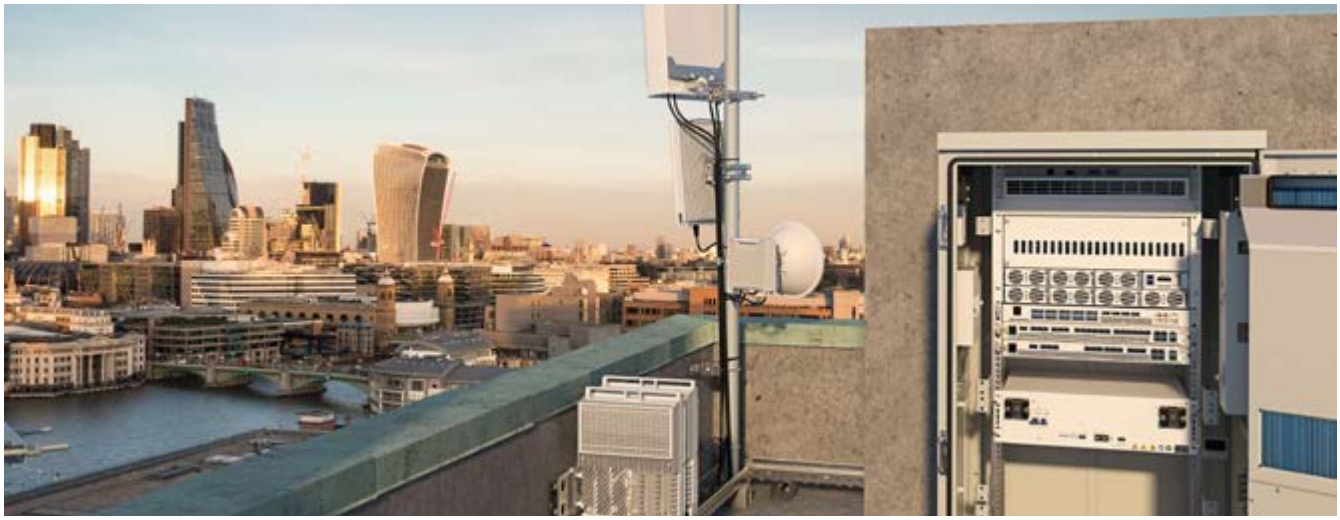
Industry-leading performance with Ericsson Radio System

Our transport solutions portfolio is part of the Ericsson Radio System, thus ensuring a smooth evolution path. Ericsson Radio System is designed to fit all site types and traffic scenarios, even as networks grow in scale and complexity, from 2G, 3G, and 4G, to 5G and beyond. It delivers industry-leading performance on the smallest site footprint with the lowest energy consumption.

Superior performance with common management from radio to core

With Ericsson Network Manager (ENM), all network technologies can be handled in a single management platform. The solution provides a single interface for managing the complete mobile network, including monitoring, service provisioning, software management, and initial deployment. ENM allows for end-to-end orchestration to support efficient roll-out of 5G services.

Complementing ENM, Ericsson Transport Automation Controller provides real-time observability, frequent data collection, and AI/ML-driven analytics and automation of the transport network, delivering improved network performance, energy efficiency, and reduced operational costs.



Fronthaul 6000

Fronthaul 6000 serves all RAN connectivity with a superior, future-proof, and purpose-built 5G optical portfolio. It is a flexible and cost-efficient passive WDM solution for Ethernet, CPRI, and eCPRI transport, separately or together. It grants no impact on synchronization, latency or extra power consumption, to deliverleading-edge 5G radio performance, even in the densest deployment areas, where RAN centralization plays the most important role.

- Complete passive portfolio, indoor pizzaboxes and remote enclosures integrated with Ericsson radio solutions
- Colored optics at 10 G and 25 Gavailable as fixed or full auto tunable, considerable savings in OPEX
- 48x fiber saving: up to 24 services from RRU to BBU over a single fiber strand
- Leading throughput per single fiber, up to 600 G with optional 1+1 protection

MINI-LINK 6000

MINI-LINK is the market-leading microwave family for cost-efficient mobile transport networks. With unmatched flexibility, MINI-LINK 6000 provides the right solution for each part of the network, all deployment scenarios, and site types, enabling sound investments in line with the service providers' needs. MINI-LINK 6000's superior system gain ensures longer hops, higher capacities, or smaller antennas, reducing OPEX. High capacities with wide channels, multi-carriers, multi-band links, low latency, and advanced synchronization support are all key enablers for 5G services.

- All building practices – outdoor, indoor, and split-mount in all frequencies, 5 – 80 GHz
- High capacity with up to 25 Gbps in multi-band configurations and 25 GE interfaces
- Superior power efficiency, 40 % lower than the industry average, considerable savings on OPEX
- Superior system gain enabling reduced TCO

Router 6000

With cost-efficient and scalable routing, the Router 6000 series responds directly to service providers' challenges in the IP backhaul/aggregation domain. It supports exponential traffic growth, increased network connectivity, and the need for synchronization and security in a complete, scalable, and cost-efficient router portfolio. The Router 6000 family contains purpose-built routers with optimized throughputs and high 10/25/100GE port densities to meet the needs of transport networks. The portfolio also includes packet fronthaul capabilities, converting CPRI to eCPRI, using integrated RAN Compute functionality. SRv6 functionality is available in several Router 6000 products, intending to provide even more scalable and efficient networks.

- Scalable solutions with up to 4.8 Tbps capacity
- Advanced synchronization support with high accuracy
- Up to 60-80 % bandwidth savings with eCPRI conversion in Packet Fronthaul deployments
- Native SRv6 for maximum performance

Transport automation controller

Ericsson Transport Automation Controller is a cloud-native, AI-powered solution designed to optimize the efficiency and performance of transport networks. It utilizes AI and machine learning to automate and analyze microwave, IP, and optical networks, enabling service providers to streamline network operations, reduce complexity, and ensure high service quality and operational resilience. The transport controller is flexible, scalable, and supports third-party OSS products and transport devices using open and standard interfaces, helping service providers secure their transport networks for the future through automation and AI.

The transport controller works through three main actions:

- **Observing:** provides real-time visibility, data collection, and monitoring of the transport network via an intuitive web-based user interface
- **Analyzing:** identifies network problems and prevents potential disruption and downtime before they impact users with AI/ML predictive analytics
- **Acting:** applies intelligent automation to keep the transport network running smoothly and efficiently

Making 5G Transport ubiquitous

Performance and new architectures supporting growth

New radio technologies are designed to make our customers' current spectrum allocations more efficient and to take advantage of new 5G spectrum allocations. Configurations and designs will vary across different types of radio sites. In addition, the shift toward more open and interoperable networks calls for a new approach to RAN architecture and the underlying transport network. High-performing, intelligent and flexible transport solutions that cater to any site type and RAN architecture are central to any robust, sustainable 5G solution.

Evolving the 5G network

Differing network requirements for urban, suburban, and rural roll-outs will lead to increasing but varying needs for backhaul capacity. By 2027, rural requirements will be close to the demands that we currently see in suburban areas. Increased Fixed Wireless Access (FWA) deployment will further boost capacities in selected suburban and rural areas, increasing necessary backhaul capacities. To maximize the 5G network potential, a staged implementation is required.

1

Boost the transport network in dense urban areas

Add IP routers with high-capacity interfaces and strict sync support

Use E-band and multi-band to boost microwave backhaul capacity

Densify with WDM outdoor enclosures for zero footprint solutions

Build and upgrade fronthaul to support high capacities and packet fronthaul

2

Build capacity in suburban areas

Build high-capacity interfaces, supporting network legacy evolution

Boost microwave capacity with 112/224 MHz channels, E-band, multi-band, and multi-carrier solutions

Add FWA to existing sites and increase capacity with E-band or Multi-band if fiber is not available

Leverage on existing PON infrastructure by overlaying extra DWDM connectivity for C-RAN

3

Evolve rural coverage and capacity

Use fiber for new 5G radio sites if available, or use microwave for fast time to market

Increase microwave capacity with 112/224MHz channels, XPIC, Carrier aggregation, and multi-carrier solutions

Use radio deep sleep functions in multi-carrier deployments to reduce power use and save energy

The full advantage with Ericsson as your partner for 5G Transport

Different transport requirements are driven by a variety of factors, from new use cases, demand for lower costs, and new RAN architectures and interfaces to expectations for high capacity, low-latency, reliable, and secure communications. With Ericsson 5G transport, service providers can establish technology leadership in new markets, prepare for fast 5G services introduction and evolution, and run the network with optimized network performance.

As the leader in 5G we know transport

Ericsson is committed to helping service providers take full advantage of 5G with a strong transport portfolio, developed in conjunction with the Ericsson Radio System radio portfolio to support all 5G deployment scenarios including Cloud and Open RAN. We reduce complexity and provide market-leading capacity and interface density using open and standardized interfaces to ensure full interoperability in multi-vendor networks.

Turn on and evolve 5G quicker

The high level of serviceability in our 5G Transport portfolio together with Ericsson's unparalleled experience with large deployments enable us to help service providers move quickly and efficiently and transition to the next generation 5G Transport network, capturing the full value of connectivity.

Ericsson's high-performing, programmable networks provide connectivity for billions of people every day. For nearly 150 years, we've been pioneers in creating technology for communication. We offer mobile communication and connectivity solutions for service providers and enterprises. Together with our customers and partners, we make the digital world of tomorrow a reality.

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