



ERICSSON

# Ericsson 5G Transport

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



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

Are you setting up your networks to bring 5G to life or evolving it for higher capacity and coverage? As a trusted partner, Ericsson delivers what our customers need while reducing complexity and cost. As service providers roll out or evolve 5G networks across all markets, Ericsson supplies future-proof and scalable transport solutions. Transport has and will continue to play an important role in meeting future capacity needs cost-efficiently. Ericsson is committed to helping our customers to prepare for all network scenarios, including Cloud RAN. With our Transport portfolio, you can 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.

# 5G requires superior transport – enable your network evolution with transport



# A comprehensive 5G Transport portfolio

What makes the 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 or beyond. 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. It is an integrated 5G transport solution that includes fiber- and microwave-based fronthaul and backhaul as part of our Ericsson Radio System. We also have best-in-class partners to complement our in-house products. Ubiquitous coverage is achieved by combining microwave, router, and optical solutions. 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.

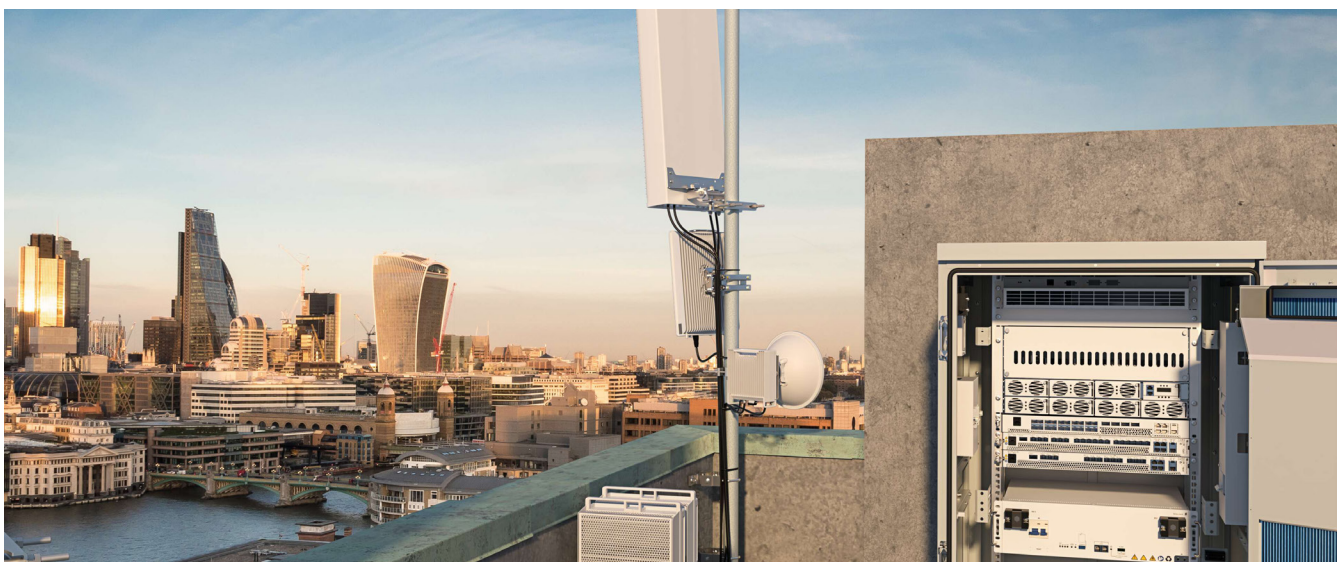
## Industry-leading performance with Ericsson Radio System

Our portfolio of transport solutions 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, 4G, and

5G. 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 with a reduced cost of operation by automating tasks such as monitoring, service provisioning, software management, and initial deployment. ENM allows for SDN-based management with open and standard interfaces, a framework for policy-driven automation, and end-to-end orchestration to support the efficient roll-out of 5G services. The Ericsson Orchestrator (EO) connects RAN, Core, and Transport to enable end-to-end network slicing. The Service Orchestrator in EO is the glue between the transport and the cloud domains for both intra- and inter-data center connectivity.



## 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 WDM solution for Ethernet, CPRI, and eCPRI transport, separately or together. It offers market-leading 25G port density and no additional latency and delivers leading-edge 5G radio performance, even in the densest deployment areas, where RAN centralization plays the most important role.



- Complete portfolio, passive and active, integrated with Ericsson radio solutions
- Colored optics at 10G, 25G and 100G available as fixed or tunable, considerable savings in OPEX
- 48x fiber saving: up to 24 services from RRU to BBU over a single fiber strand, with optional D-OTDR
- Leading throughput per single fiber usage: 600Gbps with optional 1+1 line 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 - 80GHz
- High capacity with 4x10Gbps multi-band links and 4x25GE interfaces in a single node
- 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 4.8Tbps 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

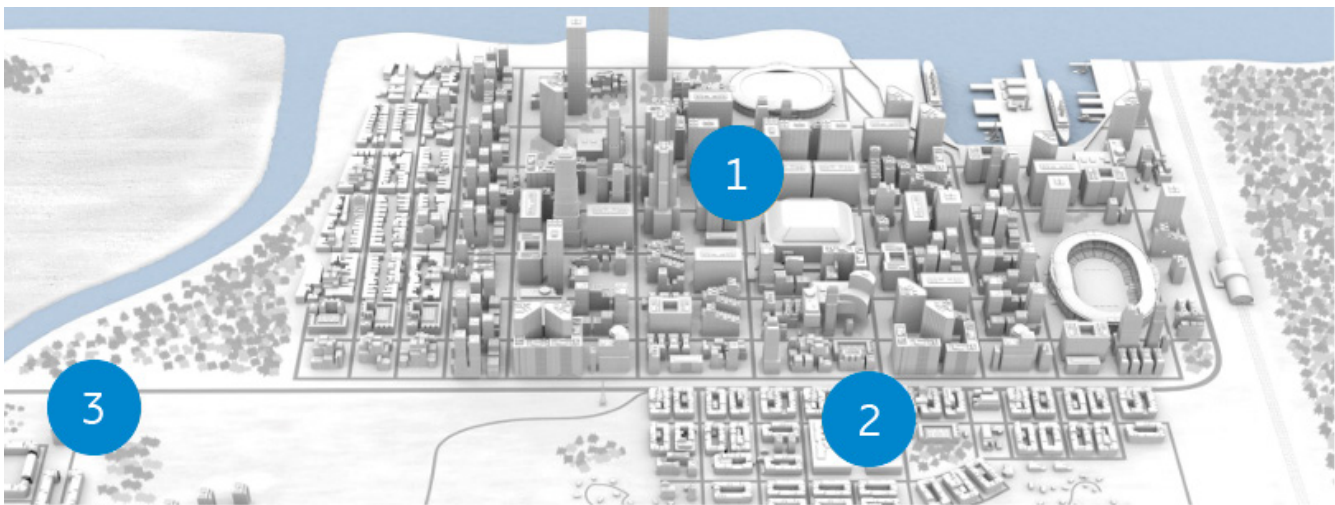
# Making 5G Transport ubiquitous

## 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. These features include spectrum sharing, carrier aggregation, higher modulation, massive MIMO, and beamforming. Because of that, we will see RAN densification in addition to small cells and 5G radios increasingly being deployed in different locations. This calls for a new approach to RAN architecture and the underlying transport network. Intelligent 4G/5G interworking, along with automated coordination between RAN, transport, and mobile core networks, 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.



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### 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 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

# 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 RAN. We reduce complexity and provide market-leading capacity and interface density using open and standardized interfaces to ensure full interoperability in multivendor 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 enables us to effectively help service providers move quickly and efficiently and transition to the next generation 5G Transport network, capturing the full value of connectivity.



Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans the following business areas: Networks, Cloud Software and Services, Enterprise Wireless Solutions, Global Communications Platform, and Technologies and New Businesses. It is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's innovation investments have delivered the benefits of mobility and mobile broadband to billions of people globally. Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.