



# One network, countless journeys

IP Anyhaul designed for your 5G world

**NOKIA**





# Transform with IP Anyhaul

While the move to 5G holds exciting opportunities for communications service providers (CSPs), it remains a significant challenge.

Network demands including low latency, high reliability, increased efficiency, and support for both extreme bandwidth and growing device numbers are a significant increase on the requirements of past mobile generations.

As a result, successfully delivering a flawless mobile experience with 5G requires more than an evolution in your radio access and mobile core. It demands architectural changes at the underlying transport layer, which aggregates and interconnects mobile data.

For 5G you need a truly smart IP networking fabric with advanced routing features and end-to-end operational simplicity. You need the agile, flexible network architecture that Nokia 5G Anyhaul can provide. Here's how IP Anyhaul is designed for your 5G world.



# Flawless services

People today expect their apps and pixel-perfect content to travel with them, and be available on any device, on-demand.

As exciting new 5G and IoT applications emerge, this expectation will only increase. Fortunately, an effective IP Anyhaul solution can help operators take on anything the 5G future brings.



Be ready

## High capacity

To support high bandwidth, high-speed interfaces and high-port densities.

## Low latency

Ultra-reliable connectivity for delay-sensitive and mission-critical applications.

## Sophisticated quality of service (QoS) capabilities

Customize and optimize services to accommodate the demanding requirements of new applications.



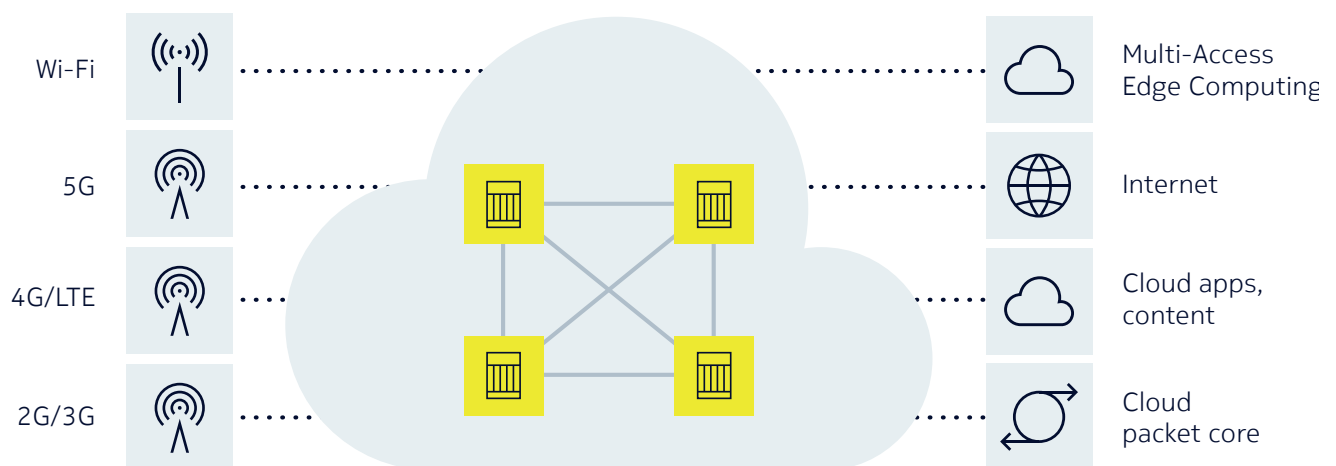
# Dynamic interconnectivity

Ultimately, a variety of RAN architectures will be necessary to support all mobile generations, and balance latency and throughput.

The network must accommodate dynamic traffic exchange between cell sites and

centralized hubs, and bring distributed core and content geographically closer to users.

At Nokia, we use our leadership in IP/MPLS to address these interconnectivity needs and offer a variety of platforms to provide the best fit for every network location. Our expanded IP Anyhaul portfolio interworks with existing systems to maximize their useful life, protecting your current investments.



## Smooth your path to 5G

### 5G Anyhaul

Get ready for a new 5G RAN and core. Enable next-generation, Ethernet-based fronthaul.

### Converged transport

Continue to support legacy protocols and mobile generations while you roll out 5G services.

### MEC and mobile cloud

Create a robust new transport architecture suitable for interconnectivity of Multi-Access Edge Computing and mobile data centers. Unlock the power of your network for the content delivery era.

### Fixed-mobile convergence

It is embedded into every platform, enabling service providers to optimize traffic flows, maximize resource usage and improve QoS.

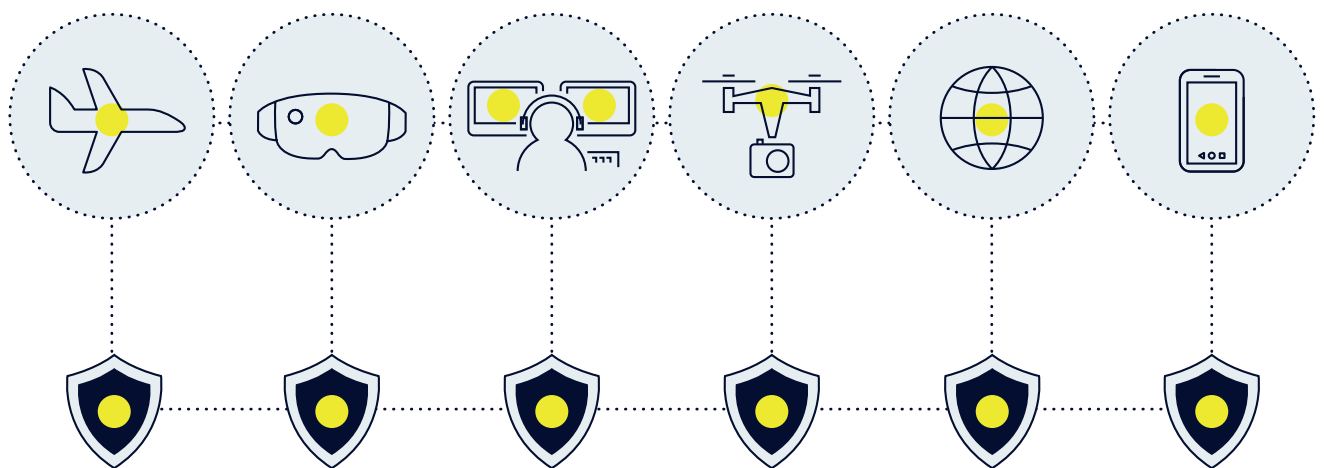


# Built-in resilience

5G use cases are emerging and many are already in trials – although the big winners have not yet been determined. When they do start to roll out, the network will need to be ready.

Massive scale will demand performance and manageability like never before. And as the number of connected users and devices increases, so does the number and severity of network threats.

At Nokia, built-in resilience forms an integral part of our IP Anyhaul solution. It is embedded into every platform, enabling service providers to optimize traffic flows, maximize resource usage and improve QoS.



## Prepare for the future

### Secure

Protect the network's much larger attack surface by surgically filtering out harmful traffic at the perimeter.

### Synchronized

Support the most demanding services and network technologies with a robust, flexible set of timing options.

### Adaptable

Respond and react immediately, and self-optimize to deliver seamless user experiences.



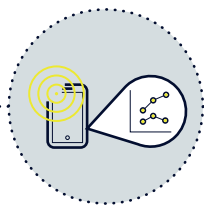
# Insight-driven automation

Our IP Anyhaul solution delivers the multi-dimensional insight you need to increase subscriber satisfaction, reduce churn, optimize traffic flows and secure your networks from today's highly-complex security threats, such as DDoS attacks.

To provide flawless user experiences, operators need end-to-end service management capabilities that minimize OPEX while making it easier to design, optimize and deploy new services. They need to stitch together a fully programmable transport fabric capable of building for a 5G future. They need Nokia 5G Anyhaul.



Programmability



Insight



Efficiency

Make your network part of the solution

## Programmability

With a programmable network, you can use techniques such as network slicing to quickly implement new services while optimizing critical control, data and management planes.

## Insight

With security and intelligence embedded in Nokia routers, your network can obtain real-time insight from big data analytics and intelligently route services based on current network conditions and user demands.

## Efficiency

As networks become more dynamic and complex, management and service delivery need to be easier than ever. Our Network Services Platform, which is common across all elements in our IP and optical domains, automates the delivery of services and guarantees the most optimal use of network assets.





# Discover how IP Anyhaul is designed for your 5G world.

[Go to whitepaper](#)

[Go to case study](#)

## About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry's most complete, end-to-end portfolio of products, services and licensing. From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in virtual reality and digital health, we are shaping the future of technology to transform the human experience.

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