Nokia AirScale Cloud RAN
Begin your cloud-based radio network journey today
A cloud RAN that offers all the options

From today’s well-established 4G deployments, 4.5G, 4.5G Pro and 4.9G will be progressively rolled out to deliver higher network performance and better customer experiences, culminating in commercial 5G services.

Deploying a Cloud RAN today will give you the business agility, scalable capacity, network efficiency and technology flexibility you need as you prepare for the diverse demands of the Internet of Things (IoT) and 5G.

The multi-layer Cloud RAN

Nokia AirScale Cloud RAN matches every need and environment. Radio functions can be run in large centralized data centers or smaller distributed sites, or a combination of both. Yet, all components are efficiently managed as a single cloud.

The solution supports existing and future interfaces and can use multiple fronthaul types, including Ethernet. In addition, Nokia’s fixed broadband, IP and optical networks range offers flexible and cost-effective fronthaul and mid-haul for any situation.

Working with legacy infrastructure, AirScale Cloud RAN easily migrates to new processing platforms when network functions are modernized, network layers are built, or services are deployed.

Implement Nokia AirScale Cloud RAN to meet your needs, such as bandwidth or latency performance, based on available assets like aggregation sites or transport infrastructure, or in line with your strategy.

Nokia AirScale Cloud RAN fits your business so you don’t have to restructure to gain the benefits of the telco cloud.
Nokia AirScale Cloud RAN

Unique multi-layer architecture

X-Haul

Controllers

2G 3G 4G 5G

Baseband

EPC MEC

Running on AirFrame Data Center

Management & Services
How Nokia AirScale Cloud RAN will change the way you do things

It will make your business more agile
With Internet-like continuous software delivery, Nokia AirScale Cloud RAN runs short software and innovation cycles for rapid deployment of services and continuous Quality of Experience (QoE) improvement. Multi-access Edge Computing (MEC) runs on the same cloud servers as the RAN to seamlessly integrate new applications and plug-ins for services based on real radio conditions.

It will meet any traffic demand
Dynamic scaling of processing capacity according to demand is a major cloud benefit. AirScale Cloud RAN lets you meet any demand, eliminating the costly practice of over-dimensioning local RAN sites for expected peaks. The cloud-based radio network controllers offer scalability and greater automation. Meanwhile, faster data rates boost the customer experience.

It will create new ways to use spectrum
Maximize the use of your radio assets by blending licensed and unlicensed spectrum through a range of multi-connectivity technologies. Nokia AirScale Cloud RAN gives you full control over your evolution from a legacy RAN to a multi-layer scalable RAN, with optimized Total Cost of Ownership (TCO).

It will help you be ready for 5G
Be ready to deploy new 5G access technologies as soon as your business needs them. Protect investments by reusing 4.5G and transport infrastructure and eliminate the need for individual RAN deployments. Nokia AirScale Cloud RAN also supports new 5G services, such as ultra-reliable and low-latency IoT services.

It will deliver maximum performance with minimum costs
Introducing a functional split between real-time (RT) and non-real-time (NRT) traffic balances processing and transport costs as it enables much longer backhaul latency to be tolerated and permits the use of Ethernet-based backhaul transport. Time-critical functions are performed at the cell site, enabling the existing transport to be used, while centralized software performs non-real-time functions. In addition, Nokia is introducing new Cloud RAN architectures to answer to operator needs flexibly.

• Automatically scale network capacity as demand changes
• Launch exciting new services in days or even hours, not months
• Run real-time services based on what’s happening locally around your customers
• Meet any demand with capacity from anywhere in the network to anywhere it’s needed
• Re-use your existing 4.5G network transport assets for 5G services
A future-proof investment
The foundation for the cloud deployment is the powerful Nokia AirFrame Data Center platform. This is designed from scratch to meet the stringent reliability, performance, real-time and latency needs of telecom operators, which go beyond the capabilities of conventional IT cloud servers.

Nokia AirScale Cloud BTS Server (a cloud-based base station) and Nokia AirScale RNC and AirScale BSC (cloud-based radio network controllers) run on the AirFrame platform.

AirScale RNC and AirScale BSC put radio resource control into the cloud, providing flexibility, automation and scalability.

Management of legacy networks and AirScale Cloud RAN is fulfilled by our Nokia NetAct and Nokia CloudBand™ solutions for a single management view to simplify telco cloud transformation.

Nokia AirScale Cloud RAN is part of our next-generation AirScale Radio Access. Building on our proven Nokia Single RAN and centralized radio solutions, the solution provides a step-by-step route to a fully cloud-based radio access deployment based on your existing network infrastructure. Your current investments are used to the full as you prepare for the 5G future.

Backed by telco cloud expertise
Nokia cloud wise services plan, design and implement cloud-based RAN solutions. The services encompass design, planning, deployment, optimization, operations and lifetime support. You can reduce the cost, complexity and time needed to deploy a cloud-based RAN and benefit from a single point of contact for smooth operations.
World’s first in a commercial network

Nokia AirScale Cloud RAN has been developed with several operators and is proven in global trials to pave the way to RAN virtualization and the functional split of the LTE eNodeB for seamless, 5G multi-connectivity.

The solution has also achieved the world’s first deployment of Cloud RAN in a commercial network, for SKT in Korea. Experience in the field has shown the solution to be ready for diverse market needs, ready for future network requirements and ready to support operator telco cloud modernization.

Nokia AirScale Cloud Base Station functional NRT/RT architecture split is field proven, and SK Telecom has already put 350 km between the RT and the NRT time functions with excellent KPIs, equivalent to those of legacy LTE.

AirScale RNC, Nokia’s cloud-based radio network controller for 3G, is commercially available and deployed.

With Nokia AirScale Cloud RAN, you have a proven and comprehensive, high-performance solution that will guide your journey through the years ahead.

“Nokia has been a leader in driving and commercializing Cloud RAN innovations. The timely launches of Nokia AirScale and AirFrame solutions give it an edge in this space, and its proactive moves to develop Multi-access Edge Computing technology – earlier than most rivals – give it added credibility.”

Ed Gubbins, Senior Analyst, Wireless Infrastructure, Current Analysis