

CASE STUDY

Nokia and Elisa advance
commercial Cloud RAN to
deliver high-performance
networks

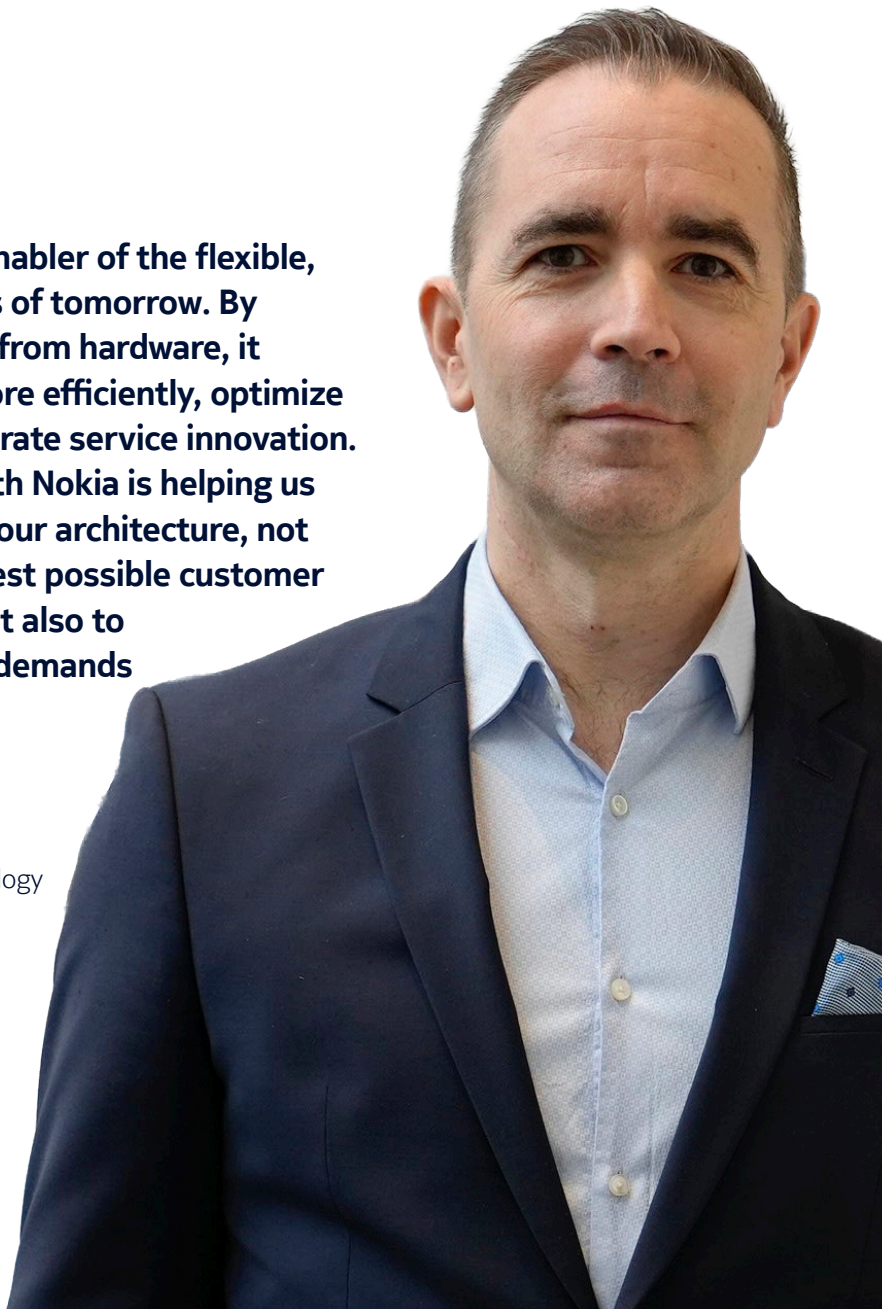
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Cloud RAN is a key enabler of the flexible, automated networks of tomorrow. By separating software from hardware, it allows us to scale more efficiently, optimize resources and accelerate service innovation. Our collaboration with Nokia is helping us continuously evolve our architecture, not only to deliver the best possible customer experience today, but also to prepare for the new demands of Advanced 5G.”

Kalle Lehtinen

CTO, Vice President, Technology
& Architecture at Elisa



Elisa, a Finnish market leader and one of Europe's most advanced digital service providers, has long embraced innovation to stay ahead in an increasingly competitive landscape. Known for pioneering unlimited mobile data with speed-based pricing, Elisa operates one of the world's highest data-usage networks and continues to set benchmarks for next-generation connectivity.

Elisa's forward-thinking approach extends beyond connectivity. From 5G service leadership to distributed energy storage solutions, the operator constantly explores new ways to drive customer value, improve sustainability and enhance operational efficiency. A hallmark of its success is its early adoption of automation and AI. Elisa began its automation journey 15 years ago and has since reduced customer-impacting incidents by 80%, all while improving perceived network quality.

Today, Elisa continues to push the boundaries of telecom innovation with Nokia as a trusted partner, advancing Cloud RAN, distributed edge cloud and centralized RAN architectures to support its ambitions for 5G and beyond.

OBJECTIVE

Build a future-ready, cloud-native 5G network

Elisa's strategic vision is clear: lead the market in digital service innovation while driving network performance, sustainability and operational excellence. A long-standing pioneer in telecom, Elisa aims to remain at the forefront of 5G leadership. It was the first operator in Europe to commercially launch 5G Standalone (SA) services for both consumers and enterprises, an achievement that now underpins its latest Cloud RAN evolution.

Key to Elisa's objectives is transforming its network architecture to become more open, cloud-native and sustainable. The company has embarked on a progressive journey, from purpose-built hardware to Cloud RAN, distributed edge cloud and centralized RAN, enabling greater agility and future-proof scalability.

Another pillar of this strategy is automation and AI. Having invested early in these capabilities, Elisa has already reduced customer-impacting incidents by 80%, enhancing both efficiency and service quality. The next phase involves advancing AI-driven network management, lifecycle automation and intelligent energy management to support continued growth in traffic volumes and services.

Through its partnership with Nokia, Elisa set out to deploy a commercial Cloud RAN solution that meets these ambitions: delivering end-to-end performance, enabling rapid service innovation and supporting multi-vendor cloud environments alongside greater operational automation.



SOLUTION

Commercial Cloud RAN deployment with Nokia AirScale portfolio and AI-powered network automation

Our latest milestone with Elisa marks one of the most advanced commercial Cloud RAN deployments in Europe. The end-to-end 5G voice and data services were successfully completed using our industry-leading 5G Cloud RAN solution. This included AirScale Massive MIMO radios, high-performance baseband software and our AI-powered MantaRay network management platform, enabling intelligent automation and continuous network optimization.

At the heart of the solution is our Cloud RAN architecture, designed to integrate seamlessly with any leading cloud and server infrastructure. While Elisa's current deployment follows a distributed model, the solution supports a gradual shift toward increased centralization, with the

long-term goal of improving energy efficiency. For this deployment, Elisa utilized Dell XR8620 servers and Red Hat OpenShift to support cloud-native RAN functions across its network. The integration with Red Hat OpenShift empowers Elisa to flexibly scale its 5G network footprint and accelerate the launch of innovative new services.

The commercial rollout also verified critical performance indicators, including capacity, end-to-end performance, feature readiness, lifecycle management, automation capabilities and energy management. This collaboration demonstrates the maturity and readiness of our Cloud RAN to deliver both high-performance connectivity and sustainable network operations.

RESULTS

Operational excellence and seamless customer experience with cloud-native 5G

Our Cloud RAN deployment with Elisa has delivered strong results, both technically and operationally, while offering valuable insights for the operator's future network strategy. By adopting a cloud-native and open architecture, Elisa is building an essential foundation for autonomous network operations, greater versatility and openness through the separation of software and hardware.

With live Cloud RAN now integrated into its commercial network, Elisa is exploring key operational advantages such as infrastructure synergies, centralization benefits, pooling gains, high availability and an increased level of automation. The deployment used a centralized architecture with all

virtual Distributed Units (vDUs) hosted at the same aggregation site, and the virtual Central Unit (vCU) centralized in the data center.

Critically, Cloud RAN performance met or exceeded expectations. Benchmarking confirmed that our Cloud RAN achieved feature parity and performance on par with Nokia's trusted purpose-built RAN, even with significant distance between radio sites and the virtual Distributed Unit (vDU). This underscores its maturity and readiness as a complementary option within a broader, hybrid network strategy. For Elisa customers, this translates to a seamless experience, with no discernible difference in network quality.





GLOBAL PERSPECTIVE

Cloud RAN shaping the network evolution worldwide

Operators are continuing to evolve their networks for the cloud era, prompted by growing data demand, emerging 5G use cases and increasing expectations for customizability, sustainability and service agility. Cloud RAN is emerging as a critical enabler of this transformation, allowing operators to decouple software from hardware, optimize resource utilization and accelerate innovation.

Elisa's and Nokia's Cloud RAN deployment provides an important reference for the global telecom industry. It demonstrates that Cloud RAN is now commercially viable, with performance and feature parity matching traditional RAN, even in complex, real-world environments. The project also highlights how cloud-native architectures can support future autonomous network operations, high levels of automation and dynamic resource management.

By leveraging a multi-vendor cloud infrastructure (with Nokia Cloud RAN, Dell servers and Red Hat OpenShift), Elisa is helping define best practices for open, flexible deployments that can scale across diverse network environments. The insights gained from this project will inform not only Elisa's continued evolution of 5G, but also broader industry efforts to shape next-generation mobile networks.

As operators around the world explore their path to Cloud RAN, Elisa's work with Nokia offers a valuable blueprint, proving that cloud-native, AI-driven networks are not just the future, but a reality today. This deployment reinforces Nokia's technology leadership in cloudification and showcases our commitment to building open, flexible network architectures in collaboration with the industry's leading ecosystem partners.

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NOKIA

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs, which is celebrating 100 years of innovation.

With truly open architectures that seamlessly integrate into any ecosystem, our high-performance networks create new opportunities for monetization and scale. Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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