

Arteria and Nokia set optical transmission record of 1Tb/s between Lyon and Toulouse

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Arteria, a subsidiary of RTE (Réseau de Transport d'Electricité), and Nokia announce the successful completion of a 1Tb/s long-distance transmission test between Lyon and Toulouse, over an optical route of more than 500 km.

This trial leveraged Nokia's innovative sixth-generation Photonic Service Engine (PSE) super-coherent optics (PSE-6s), demonstrating exceptional performance and scalability, across all types of fiber infrastructure, including aerial cables.

Using VIAVI ONE LabPro™ solutions, the test simulated client traffic, including one 800Gbps and two 100Gbps data streams over a single wavelength operating at 1 Tbps, and demonstrated error-free transmission with an average round-trip latency of 4.99ms over 24 hours, providing the flexibility required for future-proof applications.

Arteria's fiber-optic network, known as "Air Force WAN," leverages RTE's high-voltage infrastructure, comprising 25,000 km of fiber and 3,000 electrical substations across France. This innovative network offers exclusive aerial transmission routes as an alternative to traditional terrestrial networks, ensuring exceptional speeds, ultra-low latency, and enhanced data sovereignty.¹

A major breakthrough for professional and strategic uses

This demonstration of 1Tb/s transmission highlights the potential of Arteria's network to meet the growing connectivity needs of public and private stakeholders. Telecom operators, businesses, and local authorities will benefit from speeds ranging from 10G to 1Tb/s, supported by infrastructure designed for critical applications requiring low latency, such as massive data processing, cloud services, and industrial IoT systems. This record is also a testament to the robustness and reliability of "Air Force WAN", enhanced by advanced security options such as quantum-secure encryption.

"Thanks to Nokia's optical technologies, we are demonstrating that it is possible to combine sovereignty, performance and reliability without compromise," said Gilles Calligaro, President of Arteria. "This advancement allows us to offer unparalleled connectivity solutions tailored to the strategic needs of enterprises and institutions."

Matthieu Bourguignon, Senior Vice President and Head of Europe for Network Infrastructure business at Nokia, added : *"This successful trial highlights the strength of Nokia's optical technologies in delivering innovative solutions for long-distance connectivity. By integrating our Optical Transport Network (P-OTN) switching platforms and Reconfigurable Optical Add-Drop Multiplexer (ROADM) technologies, we enabled Arteria to push the boundaries of network performance and scalability. This milestone marks a significant step forward in ensuring France's digital infrastructure can meet the growing demands of tomorrow's applications with unmatched speed, efficiency and security."*

News release

Towards an interconnected national grid

The deployment of "Air Force WAN" continues with the installation of Nokia equipment in electrical substation sites. . Our major national loop connects the main French data centers, and our network is now extending to regional infrastructures, allowing optimized and ultra-efficient connectivity throughout the country.

With this new technological demonstration, Arteria and Nokia are paving the way for a future where sovereignty, reliability and performance become essential pillars of connectivity in France, serving businesses, communities, and citizens.

About Arteria

Arteria offers a unique telecom infrastructure throughout France. Our network is based on the French ultra high voltage electricity transmission grid, providing unequalled reliability, sovereignty and diversity. With more than 25,000 km of optical fiber, nearly 3,000 electrical substations and more than 70,000 available pylons, Arteria provides to customers :

- Ultra-high-speed links up to 800GbE "Arteria Waves" to meet the growing needs of data exchange
- Dark fibre optic links (FON) and connection services
- Hosting telecom antennas (TowerCo)
- Hosting sites intended for IT uses (Edge Datacenters) or telecom operators

Find our network map and additional information on <https://arteria.fr>

About Nokia

At Nokia, we create technologies that help the world work 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.

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.

Resources and additional information : [Nokia's power utilities webpage](https://www.nokia.com/industries/power-utilities/)
<https://www.nokia.com/industries/power-utilities/>

About VIAVI Solutions

VIAVI Solutions is a global leader in telecommunications test and measurement and optical technologies. VIAVI enables customers to innovate in industries as diverse as communications networks, hyperscale and enterprise data centers, consumer electronics, avionics, transportation, aerospace, and anti-counterfeiting systems. www.viavisolutions.com. Follow us on [VIAVI Perspectives](#), [LinkedIn](#) and [YouTube](#).

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