REDIMadrid Launches End-to-End Quantum Secure Data Transport Project with Ciena

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Delivering next-generation high-speed security for research and education in Madrid

HANOVER, Md. & MADRID--(BUSINESS WIRE)--Sep. 9, 2025-- REDIMadrid, the research network of Comunidad de Madrid, managed by IMDEA Software, recently collaborated with Ciena (NYSE: CIEN) on the optical network foundation required to launch its End-to-End Quantum Secure Data Transport Project. The project leverages Ciena's 6500 photonic line system, which allows a quantum channel to operate seamlessly alongside existing Dense Wavelength Division Multiplexing (DWDM) traffic on the same fiber. This marks a significant milestone in the realm of quantum secure data transport by demonstrating the ability to use Quantum Key Distribution (QKD) technology over existing optical fiber networks.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20250909880414/en/

Key highlights:

- REDIMadrid is designed to serve the research and high education network community of Madrid. This project helps address the escalating need for developing secure communication solutions in the face of quantum computing threats.
- A key benefit of using Ciena's 6500 photonic line system is the ability to provide the spectral isolation required between the quantum and optical DWDM channels for successful co-propagation of the quantum channel on the C-band over the same fiber, eliminating the need for a dedicated fiber to carry the quantum channel.
- This approach takes advantage of using existing fiber infrastructure with QKD technology to ensure the confidentiality of critical in-flight data against current and future cyber threats.

"This collaboration demonstrates how we can help our customers stay ahead of the threats posed by quantum computing to today's cryptography; whether it's using our proven photonic line systems to eliminate the need for additional fiber to carry the quantum channel, or by using our Waveserver 5 optical encryption solutions that are designed to interwork with any QKD system and to support Post-Quantum Cryptography (PQC) algorithms," said Paulina Gomez, Senior Product Marketing Advisor, Ciena.

This integration enables REDIMadrid to lay the groundwork for a communication architecture that meets the evolving needs of the research and academic community—ensuring confidentiality, integrity, and long-term security of data in a future shaped by quantum technologies.

"Working alongside Ciena, we are confident that this effort will pave the way for widespread adoption of quantum-secure networks, while strengthening the capabilities and reliability of REDIMadrid's infrastructure in the MadQCI network," said David Rincón, Chief Network Engineer REDIMadrid IMDEA Software. "This represents a significant milestone in the advancement of quantum-secure data transport. By integrating Quantum Key Distribution technology with optical infrastructure, we are taking a crucial step toward building next-generation networks that are not only more secure, but also highly scalable and resilient."

Ciena and REDIMadrid are collaborating with Axians, a technology partner specialized in digital and network infrastructures, to ensure a seamless implementation and integration process for this project.

About REDIMadrid

REDIMadrid, managed by the IMDEA Software Institute, is devoted to advanced research, education and the research of innovative solutions in telecommunications. By collaborating with industry leaders, REDIMadrid drives initiatives aimed at creating a more secure and connected digital landscape. More info at REDIMadrid website.

About IMDEA Software

The IMDEA Software Institute is a research center promoted by the Madrid Regional Government, focused on the development of reliable, secure, and efficient software, addressing key scientific challenges in this strategic area. It is a public foundation advised by an independent international board and is funded through regional support, competitive research projects, and industry collaborations. The Institute participates in major European and international programs and hosts top-level researchers from around the world, fostering advanced training and global networking opportunities for its PhD students. Its main research areas include **Logic, Verification, Programming Languages, Software Engineering, Security and Cryptography**. All research is conducted following ethical principles and a commitment to scientific excellence. More info about IMDEA Software at IMDEA Software website, LinkedIn and X.

About Ciena

Ciena is the global leader in high-speed connectivity. We build the world's most adaptive networks to support exponential growth in bandwidth demand. By harnessing the power of our networking systems, components, automation software, and services, Ciena revolutionizes data transmission and network management. With unparalleled expertise and innovation, we empower our customers, partners, and communities to thrive in the AI era. For updates on Ciena, follow us on LinkedIn and X, or visit the Ciena Insights webpage and Ciena website.

Note to Ciena Investors

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and other announcements. From time to time we exclusively post material information to this website along with other disclosure channels that we use. This press release contains certain forward-looking statements that are based on our current expectations, forecasts, information and assumptions. These statements involve inherent risks and uncertainties. Actual results or outcomes may differ materially from those stated or implied, because of risks and uncertainties, including those detailed in our most recent annual and quarterly reports filed with the SEC. Forward-looking statements include statements regarding our expectations, beliefs, intentions or strategies and can be identified by words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "should," "will," and "would" or similar words. Ciena assumes no obligation to update the information included in this press release, whether as a result of new information, future events or otherwise.

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