



NEWS RELEASE

Quantum Corridor, Ciena, and Toshiba Complete World's First 1.6 Tb/s Quantum-Safe Optical Encryption Milestone on Live Commercial Network

2026-08-04

Trial combines high-speed optical encryption with post-quantum cryptography (PQC) algorithms and quantum key distribution (QKD) to ensure data confidentiality in the quantum era

HAMMOND, Ind. & HOUSTON & HANOVER, Md.--(BUSINESS WIRE)-- **Quantum Corridor**, **Ciena** (NYSE: CIEN) and **Toshiba** have completed a successful trial of high-speed quantum-safe networking on Quantum Corridor's live commercial network in the Midwest United States. The trial demonstrates how organizations can immediately protect critical in-flight data with Ciena's **WaveLogic 6 Extreme (WL6e)** 1.6 Tb/s quantum-safe encryption capabilities, which support a hybrid security approach using NIST-certified PQC algorithms and seamless interworking with Toshiba's QKD technology.

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The trial comes as governments and enterprises accelerate planning for the post-quantum era. Governments across the globe are issuing mandates to ensure quantum-readiness to transition information systems to **NIST-approved PQC standards**, reinforcing the urgency for critical infrastructure operators and businesses to begin preparing the migration now.

Conducted across Quantum Corridor's live production network between data centers in Chicago and Hammond,

Ind., the trial successfully validated 1.6 Tb/s of encrypted connectivity using Ciena's **Waveserver** platform powered by WL6e, alongside existing **WaveLogic 5 Extreme** (WL5e) 800G encrypted traffic running on the same RLS photonic line system. The trial also showcased interworking with **Toshiba's QKD servers**, which provide quantum-generated keys to both Ciena's optical encryption systems.

By supporting both PQC and QKD, the solution gives network operators flexibility in how they mitigate the threat of quantum computers to today's encryption solutions, particularly from "harvest now, decrypt later" attacks. For enterprises and service providers, this approach offers a practical migration path to **quantum-safe networking** without requiring a wholesale replacement of existing infrastructure.

"Quantum-safe networking is no longer a 'future' discussion," said Ryan Lafler, President & CTO, Quantum Corridor. "By validating 1.6 Tb/s encrypted connectivity with both PQC and QKD on our live network, we're demonstrating how we can help customers transition to a quantum secure solution while continuing to support the bandwidth demands of AI, cloud, and mission-critical applications."

Ciena's Waveserver platform delivers always-on, wire-speed, optical-layer AES-256-GCM encryption and supports NIST-certified PQC algorithms straight out of the box as part of its quantum-safe encryption solution. The trial also highlights that customers already deploying Ciena's WL5e 800G encryption solution can benefit from the same level of data protection with support for PQC algorithms through a simple software upgrade, helping extend the value of current network investments.

"The shift to quantum-safe communications is no longer optional for organizations handling sensitive data," said Dino DiPerna, Senior Vice President, Global Research and Development, Ciena. "This major milestone highlights how high-speed optical encryption with PQC and/or QKD interworking can be easily deployed in real-world network environments to help customers protect critical data today while preparing for the threat of quantum computers."

"Preparing for the quantum era requires a layered approach to cybersecurity," said Terry Cronin, Vice President, Toshiba Corporation. "Quantum Key Distribution complements post-quantum cryptography by adding a physical layer of security that strengthens the protection of critical communications. These complementary technologies can be deployed together in high-speed optical networks, giving organizations a practical path to quantum-safe communications while protecting today's most sensitive data."

Quantum Corridor's network is carrying customer traffic between its various data centers nodes, providing quantum-safe connectivity with encrypted channels secured via a co-propagating QKD system. The trial underscores how it can migrate to a NIST-compliant PQC solution and scale capacity and security together as customers adopt bandwidth-intensive applications and face growing cybersecurity requirements.

Additional Resources

- [How a World-First 1.6 Tb/s Trial Advances Quantum-Safe Networking](#)
- [Quantum Corridor, Toshiba Demonstrate First Cross-State Quantum Key Distribution Over Live Commercial Metro Fiber Network](#)
- [1.6T quantum-safe encryption: Protecting critical data at scale](#)

About Quantum Corridor Inc.

Quantum Corridor Inc. was formed by Chicago-area technology innovators to drive technology infrastructure to Indiana and create an information-sharing platform for institutions such as Chicago Quantum Exchange, defense contractors, research hubs and universities. It is a member of the Bloch Tech Hub, a coalition of industry, academic, government and nonprofit stakeholders led by Chicago Quantum Exchange, one of 31 U.S. Regional and Innovation Technology Hubs designated for quantum technologies. Quantum Corridor Inc. was named a Chicago Quantum Exchange member in April 2024. Generally targeted to the largest research and education centers and to entities that can use high bandwidth, the Quantum Corridor network will stretch 263 miles and be the nation's largest quantum computing superhighway. Visit www.quantumcorridor.com for more.

About Toshiba International Corporation (TIC)

Toshiba International Corporation, a Toshiba America Inc. Group company and a wholly owned subsidiary of Toshiba Corporation, encompasses diverse range of divisions and business units, including Motors & Adjustable Speed Drives, Power Electronics, Automotive, Transportation, Digital Solutions, Quantum Key Distribution and Transmission & Distribution.

Headquartered in Houston, Texas, TIC provides application solutions to a wide range of industries including the energy sector, general industrial, data centers, automotive, medical and more.

About Ciena

Ciena is the global leader in high-speed connectivity. We build the world's most advanced networks to support exponential growth in bandwidth demand. By harnessing the power of our networking systems, interconnects, 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](#) or visit the [Ciena website](#).

Note to Ciena Investors

You are encouraged to review the **Investors section** of our website, where we routinely post press releases, SEC filings, recent news, financial results, 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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Source: Ciena Corporation