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Arqit and Sparkle achieve quantum-resistant encryption at the speed of light

LONDON, Dec. 03, 2025 (GLOBE NEWSWIRE) -- Arqit Quantum Inc. (NASDAQ: ARQQ, “Arqit”), a global leader in quantum-safe encryption, and Sparkle, a Tier 1 global telecoms operator, have successfully demonstrated quantum-resilient data transmission across Sparkle’s optical network in Greece.

The proof of concept (POC), implemented over Sparkle metropolitan optical ring in Athens, shows how Arqit’s encryption technology can be embedded directly into the optical transport layer, protecting high-capacity networks against future quantum threats without impacting performance.

Sparkle validated that sensitive data can be secured at the physical network layer without compromising performance. Following the deployment of Arqit’s technology, end-to-end encryption was successfully applied to multi-100G optical links. This demonstrated that quantum-resistant protection can be delivered at the speed of light, ensuring ultra-secure data transmission without compromising performance.

Key Highlights:

- **Optical-Layer Quantum-Safe Encryption:** Sparkle’s Quantum-Safe over Internet (QSI) solution operates directly on optical transponders, integrating Arqit SKA-Platform™ encryption into the physical layer (L1).
- **High-Capacity and Scalable:** supports multi-100G optical links and scales with growing network demands.
- **No physical changes to optical hardware:** offers a practical, ready-to-deploy solution that doesn’t require expensive optical hardware changes. The quantum-safe symmetric encryption key was injected from VM and universal CPE appliances, connected to ETSI14 Interface and managed via the Orchestration platform.

Advancing Quantum-Safe Network Innovations:
This collaboration marks a significant step toward securing next-generation telecoms infrastructure. By combining Sparkle’s QSI leadership, Arqit’s quantum-safe encryption, and high-performance optical capabilities, the project demonstrates a scalable, real-world solution for quantum-resistant optical networking. This lays the groundwork for more resilient data networks worldwide.

“Securing the world’s data networks against emerging threats requires solutions that are both effective and practical,” said Andy Leaver, CEO of Arqit. “Telecom operators are looking for proven, low-disruption paths to quantum-safe security, and this POC demonstrates a ready-now path. It shows that quantum-safe encryption can be embedded directly into existing optical infrastructure, protecting high-capacity data links without disrupting performance or operations.”

For more details on Arqit’s quantum-safe networking technology, visit www.arqitgroup.com.

Notes to Editors

About Sparkle

Sparkle is TIM Group's global operator, first international service provider in Italy and among the top worldwide, offering a full range of infrastructure and global connectivity services – capacity, IP, SD-WAN, colocation, IoT connectivity, roaming and voice - to national and international Carriers, OTTs, ISPs, Media/Content Providers, and multinational enterprises. As a leading player in the submarine cable industry, Sparkle owns and manages a network of more than 600,000 km of fiber stretching across Europe, Africa, the Middle East, the Americas, and Asia. Sparkle's sales team has a global presence, with representatives in 32 countries.

Find out more about Sparkle following its X and LinkedIn profiles or visiting the website tisparkle.com

Media Contacts:

sparkle.communication@tisparkle.com
X: @TISparkle

About Arqit

Arqit Quantum Inc. (Nasdaq: ARQQ, ARQQW) supplies a unique encryption software service which makes the communications links of any networked device or cloud machine secure against both current and future forms of attack on encryption – even from a quantum computer. Compatible with NSA CSfC Components and meeting the demands of NSA CSfC Symmetric Key Management Requirements Annexe 1.2. and RFC 8784, Arqit's Symmetric Key Agreement Platform uses a lightweight software agent that allows end point devices to create encryption keys locally in partnership with any number of other devices. The keys are computationally secure and facilitate Zero Trust Network Access. It can create limitless volumes of keys with any group size and refresh rate and can regulate the secure entrance and exit of a device in a group. The agent is lightweight and will thus run on the smallest of end point devices. The product sits within a growing portfolio of granted patents. It also works in a standards compliant manner which does not oblige customers to make a disruptive rip and replace of their technology. Arqit has been recognised as an IDC Innovator for Post Quantum Cryptography (2024) and is a multi-award-winning leader in quantum-safe security, including two GSMA Global Mobile Awards. For more information, visit www.arqitgroup.com.

Media relations enquiries:
Arqit: pr@arqit.uk

Investor relations enquiries:
Arqit: investorrelations@arqit.uk

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Source: Arqit