

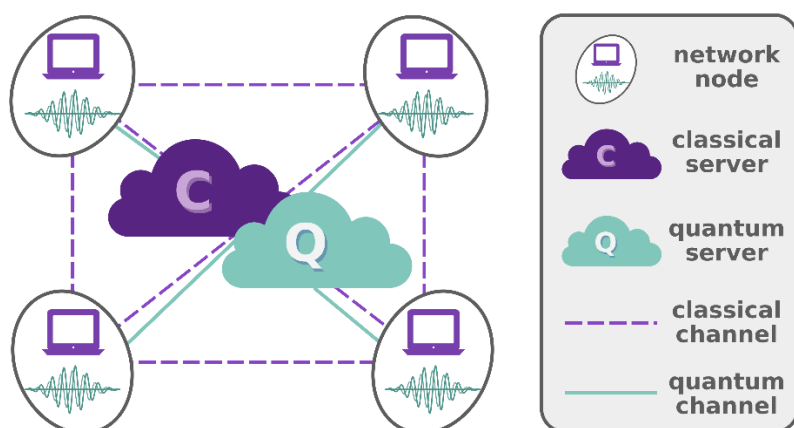
FOR IMMEDIATE RELEASE

Quantum B Secures European Patent for Quantum Conference Key Agreement Protocol Supporting Consensus in Distributed Systems

ŁÓDŹ–LUBLIN, September 14, 2026 – Quantum B, Inc. (formerly Quantum Blockchains) announced that the European Patent Office (EPO) has granted the company a patent covering its Quantum Conference Key Agreement protocol and its application in distributed systems. The invention enables networks of independent nodes to reach consensus on shared data by leveraging randomness generated through quantum-entangled states, thereby reducing reliance on exclusively classical cryptographic assumptions.

Scope of the Patent

The patent claims (<https://register.epo.org/application?number=EP23461579>) describe a system that generates time-bin encoded photons and transforms them into time-bin GHZ states. They also cover a method in which network nodes receive measurement outcomes derived from qubits distributed by a quantum server while communicating with one another over classical Internet channels.



Based on its local measurement results, each node derives bit values and subsequently computes and shares an additional bit value used in the agreement procedure. A node performs an operation on a shared data block when its locally calculated value agrees with the majority of corresponding values received from the other nodes. Agreement is declared once the resulting processed data block is consistent across the participating nodes.

The result is a distributed consensus mechanism that incorporates quantum conference key-agreement techniques and quantum-derived correlations into the consensus process, rather than relying exclusively on classical consensus mechanisms such as proof-of-work or classical voting.

Why It Matters

Distributed systems: from blockchain networks to multiparty data-sharing platforms, require independent nodes to agree on a single, consistent version of shared data, even when the participants do not fully trust one another.

Quantum B's approach introduces quantum-distributed states and the resulting correlated measurement outcomes into this agreement process. This creates a path toward distributed-consensus protocols in which part of the coordination mechanism originates from quantum correlations, rather than being based exclusively on classical cryptographic assumptions and classical sources of randomness.

Continuing Research and Development

"This patent is the result of work we began some time ago, but our research has advanced significantly since then," said Mirek Sopek, CEO of Quantum B. "Since filing the patent application, we have continued to develop both the protocol itself and new approaches to distributed consensus. Today, our work has progressed well beyond the solutions described in the granted patent, and we are developing new results that we intend to share as they mature. This is an important milestone, but not the endpoint of our research."

"When many participants in a system need to agree on a common result, classical approaches typically require complex communication between them. In our research, we investigated whether quantum entanglement could simplify this process by enabling multiple participants to obtain correlated outcomes simultaneously. The granting of the patent for our solution confirms the innovative nature of the concept and supports the research direction we have chosen," said Miriam Kosik, co-inventor.

Quantum B is simultaneously developing a broader portfolio of post-quantum and quantum-security solutions, including its pQKD hardware platform, and is actively participating in research projects funded by the European Union. These include POSEIDON, a project focused on post-quantum security for European digital identity platforms.

About Quantum B

Quantum B, Inc. (quantumb.io) develops quantum-cryptography migration systems and quantum-security solutions, including hardware for emulating Quantum Key Distribution and protocols designed to protect data and communications against both classical and quantum threats.

Media Contact:

Ewa Poławska

Strategic Communication Officer

media@quantumb.io

+48 502 257 465