

Building a Prototype Quantum Network

Scarlett Gauthier^{1,2}

¹*The Quantum Internet Alliance*

²*QuTech, TU Delft, 2628CJ, Delft, The Netherlands*

The Quantum Internet Alliance (QIA) is building a full-stack prototype quantum network, made in Europe. This requires not only advanced individual subsystems, such as quantum processing end nodes and a quantum repeater chain capable of bridging long distances, but also photonic interconnections between these subsystems to enable end-to-end entanglement generation. Successful integration of heterogeneous systems demands substantial innovation, spanning both engineering and fundamental physics. This talk presents the capabilities of individual network subsystems demonstrated in QIA's first project phase and outlines the integration requirements being addressed in the ongoing second phase.

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