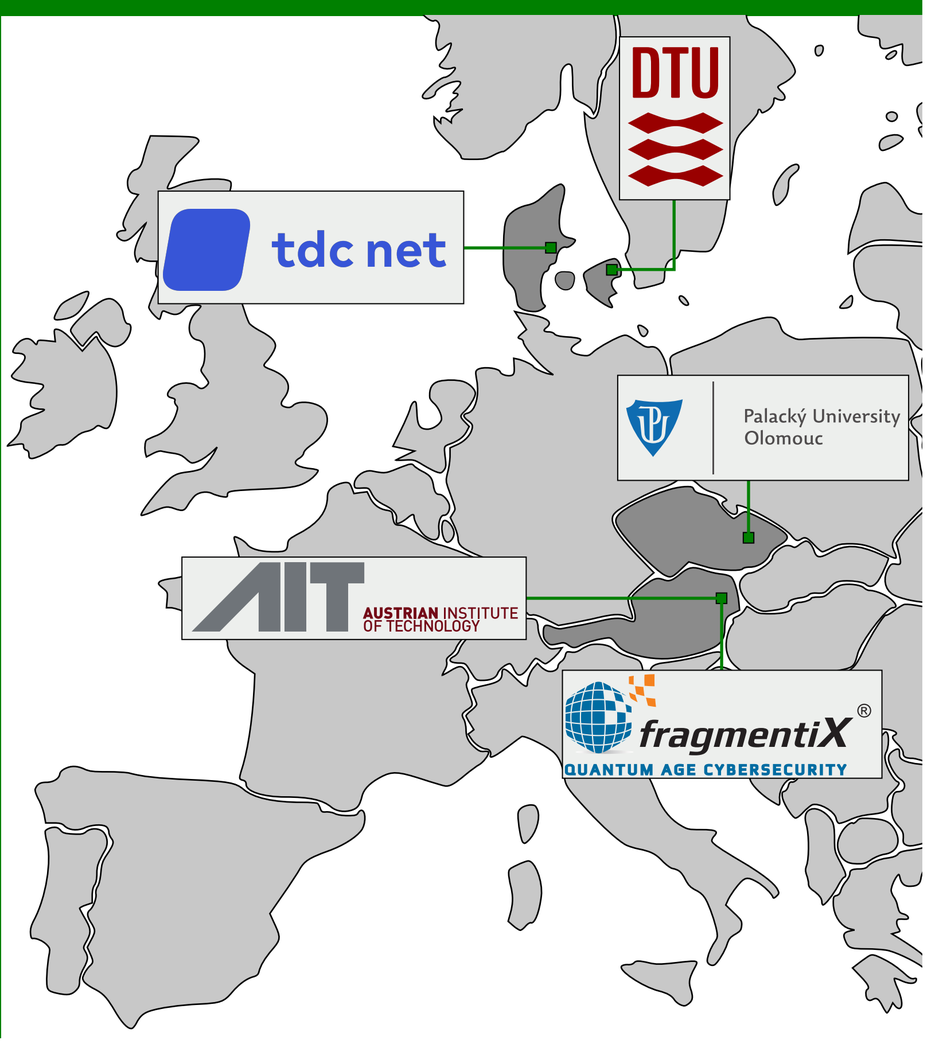
This project was funded within the QuantERA II Programme that has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 101017733.

CVStar

quantera.eu/cvstar

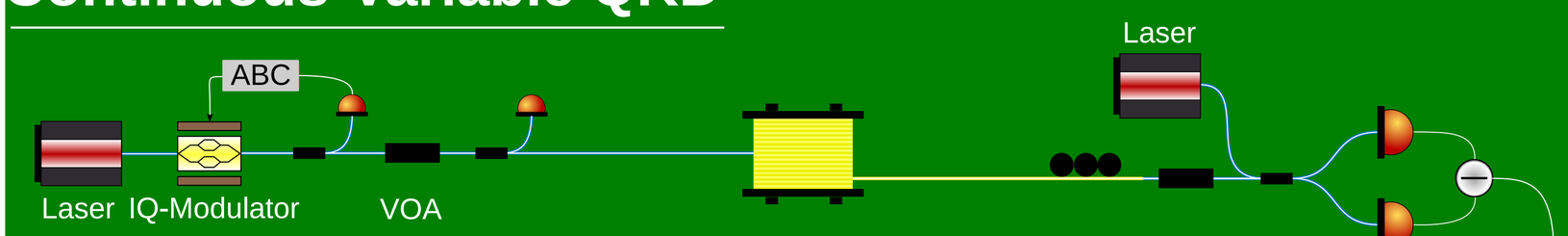
Consortium



Project Vision

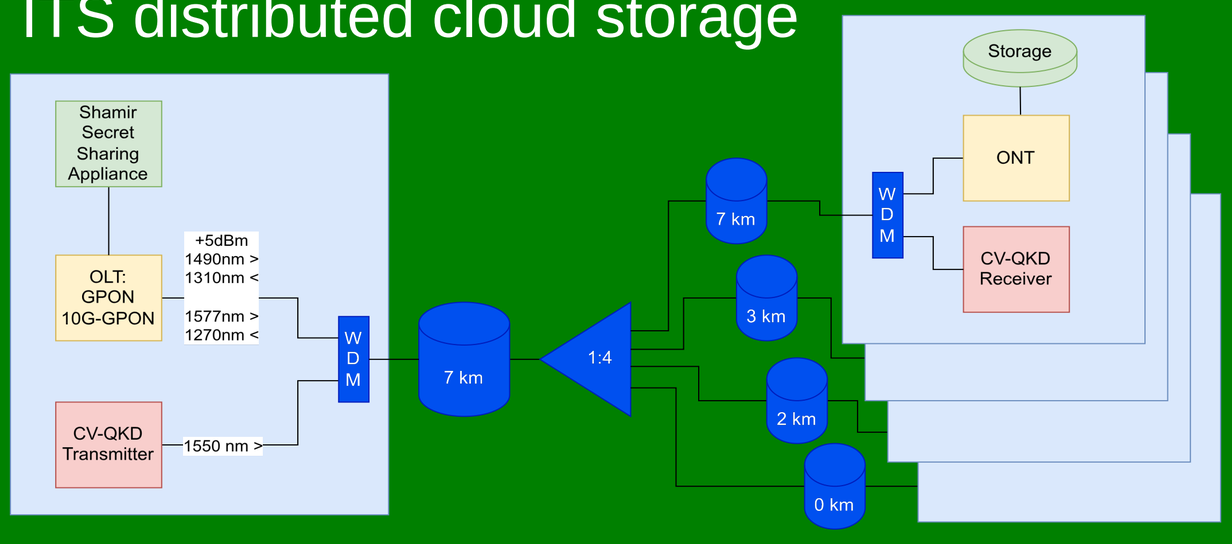
- Development of multi-user quantum key distribution:
  - coherent and squeezed states
  - different collaborative scenarios
  - security proofs
  - prototypes
- Use-case demonstrations:
  - passive-optical networks
  - ITS distributed cloud storage

Continuous-Variable QKD



Main Results

CV-QKD multiplexed with passive-optical network equipment, ITS distributed cloud storage



Facts

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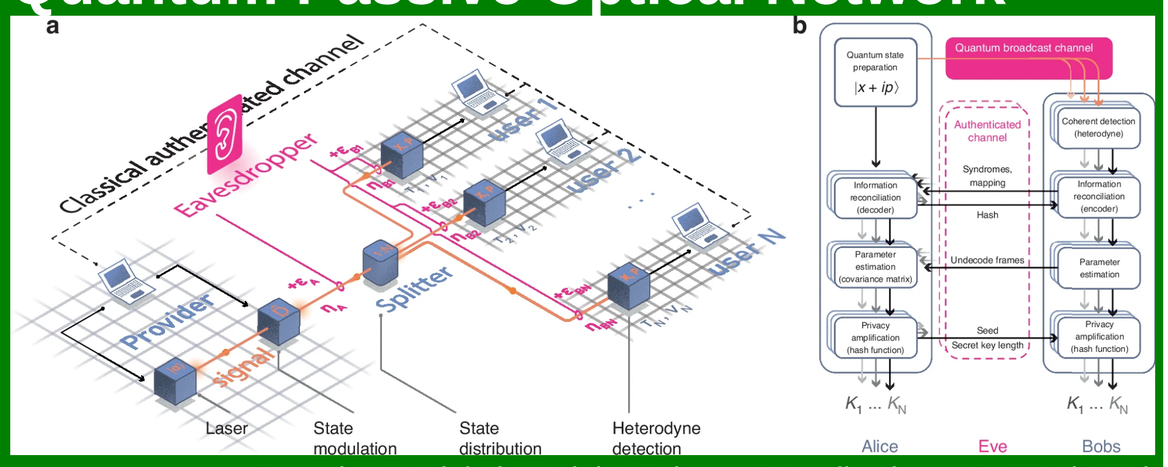
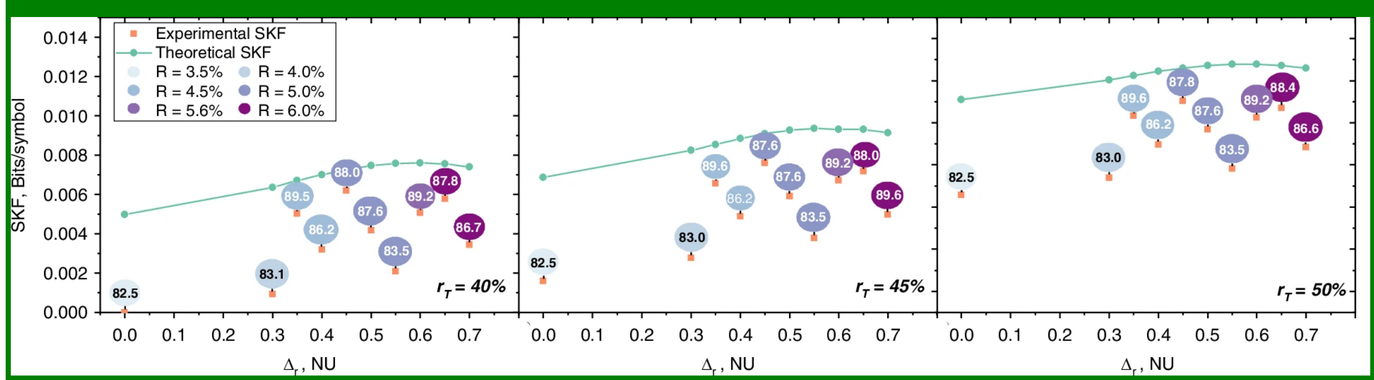
Continuous-Variable Quantum Passive Optical Network



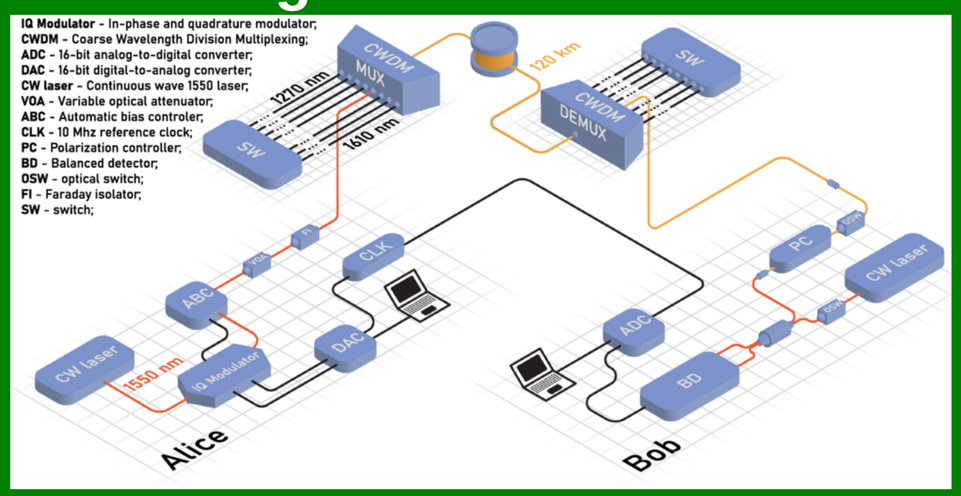
Gaussian Modulation: Light: Science & Applications 13, 291 (2024)
Discrete modulation: arXiv:2406.14610

Composable Security with discrete modulation (QPSK)



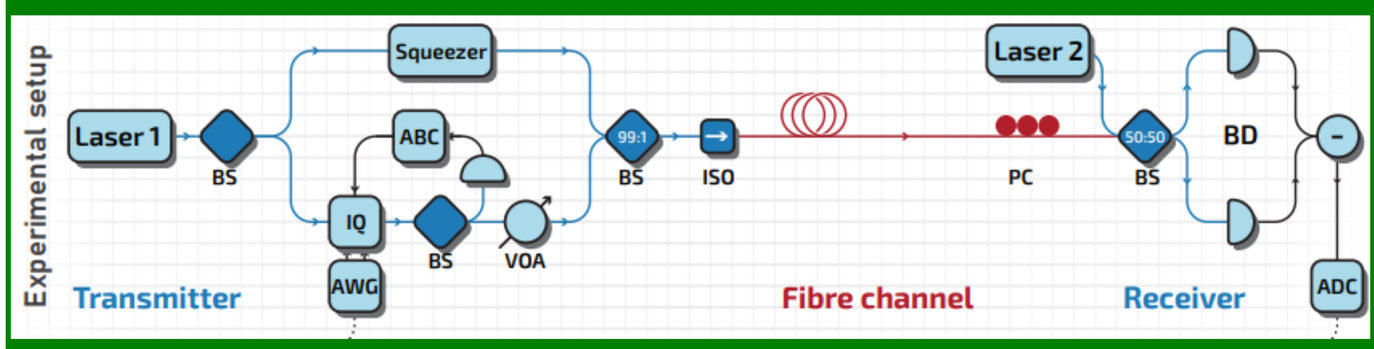
Light: Science & Applications 14, 255 (2025)

CV-QKD over 120km coexisting with data transmission



Phys. Rev. Lett. 135, 170804 (2025)

CV-QKD with squeezed light



arXiv:2506.19438 (2025)
npj Quantum Information 11, 71 (2025)