

THE GOALS

CiViQ aims to make QKD a mainstream technology for telecom networks and critical infrastructures securing individuals, industries and institutions on a wide scale.

Requirements and specifications driven by telecom industry partners (Equipment Manufacturers & Carriers):

01



Build flexible, modular, network-aware.

- Standardized components interface.
- Open Development Platform (ODP).
- SDN-enabled systems and network.

02



Validate and benchmark over datacenter and telecom infrastructures.

- Production network environments.
- End-to-end security.

03



Develop GHz modulation rate systems and explore distances beyond metro

- Strengthened WDM Coexistence.
- Cost-effective scalable system design.
- Photonic integration of components.

04



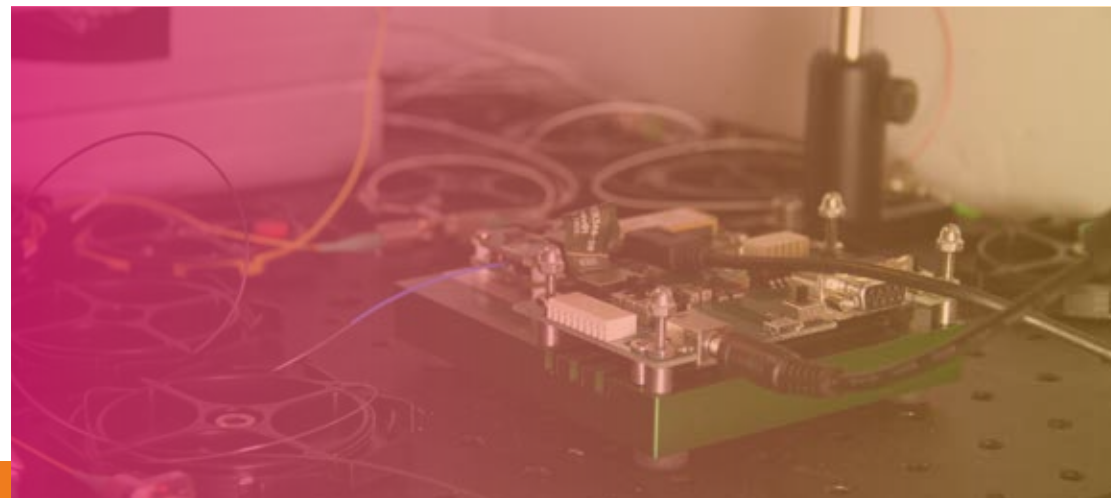
Prepare for next-generation quantum communication systems and networks.

- Add new CV quantum crypto functionalities.
- Novel CV-QKD protocols and security proofs.
- Interfaces with satellite and quantum repeaters.

THE PROJECT

The goal of the CiViQ project is to open a radically novel avenue towards flexible and cost-effective integration of quantum communication technologies, and in particular Continuous-Variable QKD, into emerging optical telecommunication networks.

- ➔ Provide systems made of mass production components and optical telecommunication equipment following user defined requirements.
- ➔ Validate the capability to seamlessly operate within flexible and dynamic networks.



QKD TECHNOLOGY

Quantum key distribution (QKD) is a powerful technology for strengthening the security of critical information in modern network infrastructures.

01

ROAD
BLOCKS

- QKD today relies on point-to-point featuring:
- Poor flexibility.
 - Inability to operate in carrier-grade telecommunication networks.
 - No certification for use-cases at application level.
 - High cost.

02

REQUIRE-
MENTS

- Enhance the security of telecom network infrastructures.
- Extend security to telecom network services.
- Apply technologies less invasive to current existing systems, and adapt them to these technologies.

03

ENABLING
TECHNOLOGIES

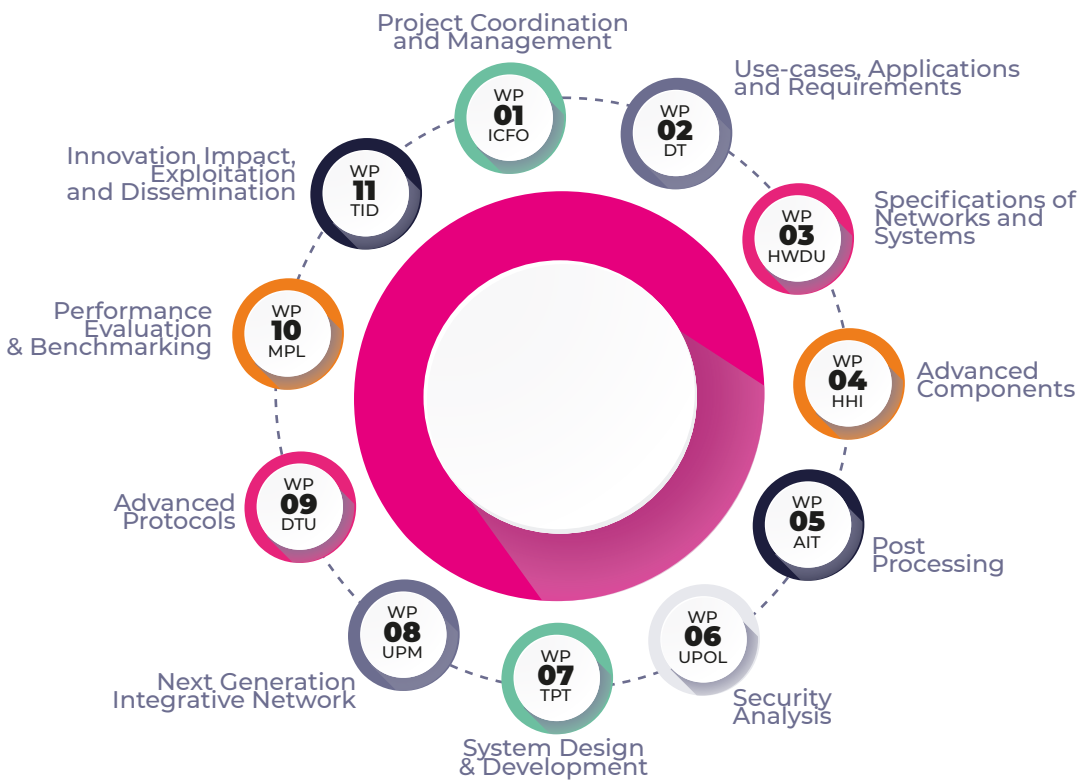
- Flexible QKD systems: integration in modern carrier infrastructures.
- Photonic integration ideal for large-scale production and cost-effective QKD systems.

04

CONTINUOUS-
VARIABLE
QKD

- Use of coherent states and coherent detection.
- No need of single-photon technology.
- Chip-level integration.
- Compatibility with modern optical telecommunication.

HOW CIVIQ WORKS



THE PARTNERS

CiViQ unites for the first time a broad interdisciplinary community of 21 partners with unique breadth of experience, involving major telecoms, integrators and developers of QKD.



CONTINUOUS-VARIABLE QUANTUM COMMUNICATIONS

CiViQ



QUANTUM
FLAGSHIP

civiquantum.eu
#civiq_quantum



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