An Open European Quantum Key Distribution Testbed

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Abstract

Quantum Key Distribution (QKD) offers unprecedented security even in the quantum age. So far, this technology has only be demonstrated on a technological level. We present here the OPENQKD project, which aims to demonstrate QKD application in many industry sectors across Europe to support take-up and increase visibility. The testbed also acts as a pilot for a future European Quantum Communication network.

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Objectives

- Open, robust, reliable, modular and fully monitored testbed facility
- Operation of use-cases deriving from Secure Societies needs
- Demonstration of Interoperability and enhanced network functionality
- Standardization and security certification
- Foundations for a Pan-European Quantum Network
- Kick-start a competitive European QKD industry

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Use-cases

Demonstration of more than 30 use-cases in **field demos with end-users**.

- Critical infrastructure protection
- Post Quantum - QKD Hybrid
- QKD as a cloud service
- Security in e-health services
- High Performance Computing
- Client, Network and Data Center Applications

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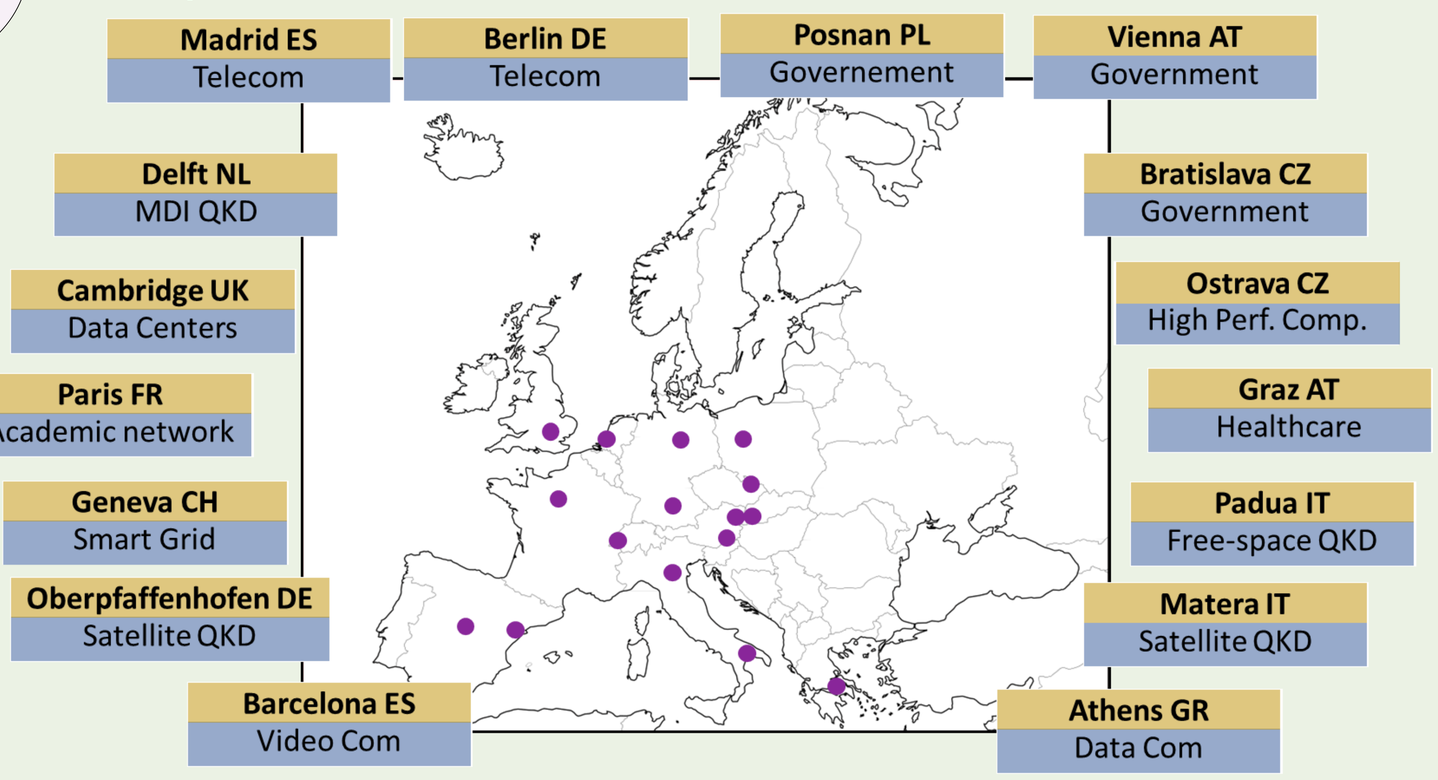
Partners – The consortium

A broad range of partners spanning the whole QKD value chain

- **QKD suppliers**
- **QKD R&D partners**
- **QKD network developers**
- **Telecom operators**
- **Suppliers of network encryption**
- **Aerospace and satellite industry**
- **Standardisation institutes**
- **Fiber infrastructure operators**
- **Early adopters**

16

European testbed sites



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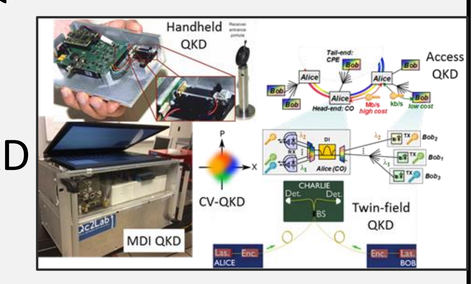
QKD links

25 industrial QKD links from IDQ and Toshiba. More than 30 hardware encryptors (layer 2 and 3).

Development of next generation QKD:

- Long distance QKD
- MDI QKD
- Twin Field QKD
- Low cost CV-QKD
- Hand-held QKD
- Access QKD



Get in touch

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Find information on https://openqkd.eu/

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