Leap in **A**dvancing of cr**I**tical **Q**uantum key distribution-sp**A**ce components.

Project Launch

The implementation of LaiQa project was officially inaugurated with the kick-off meeting that took place on 11th and 12th of January 2024. The eight (8) members of the consortium participated in a two-day productive hybrid meeting which was held at the premises of Netherlands Organization for Applied Scientific Research, TNO, in Delft. During the hybrid event, LaiQa's vision and workplan has been analyzed in depth, the role of each partner in the project's deployment specified in detail and the next actions towards the achievement of project's objectives defined.

LaiQa comes as a technology intensive research and innovation action aiming to develop and advance critical components and technologies necessary to build a global spaced-based quantum network.

LaiQa envisions to realize unconditionally secure quantum communications over long distances bringing functional QKD components together with advanced system integration techniques towards deployable space-QKD systems.

The project's objectives will include the development of space-deployable, high-brightness 1550 nm entangled photon pair source (EPPS), a space-suitable Decoy State - BB84 Prepare and Measure (P&M) source, a photonic integrated EPPS for next generation on-board sender stations, a quantum memory for long-distance entanglement distribution, an advanced fiber coupling/adaptive optics system for converged space/terrestrial QKD segments, and software components towards the optimization of LaiQa architecture.

The project will demonstrate P&M- and entanglement based QKD systems both in lab/terrestrial FSO testbeds and in field demonstrations in Helmos optical ground station (OGS).

LaiQa will also mobilize its consortium to prioritize standardization activities that focus on space components for P&M- and entanglement- QKD, consider interfaces and parameters for them to propose specification standards and potentially trigger new standardization activities within EU.

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LaiQa project comprises eight (8) partners from five (5) countries among which:

1 Applied Scientific Research Organization: Netherlands Organization for Applied Scientific Research, (TNO, NL);

2 SMEs: Quantum Technology Laboratories (QTLABS, AU) (NL) and Quantum Space Systems (QSSYS, DE);

1 National Observatory: National Observatory of Athens (NOA, GR);

1 Industrial Aerospace Organization: Thales Alenia Space (IT);

3 Academic organizations: Technical University of Eindhoven (TU/e), National Technical University of Athens (NKUA) and the Institute of Communications & Computer Systems of the National technical University of Athens (GR) that coordinates the action.

Project facts

Topic: HORIZON-CL4-2023-SPACE-01-62 Quantum Communication Technologies for space systems (RIA)
Project no: 101135245
Start date: 1 January 2024
Duration: 36 Months
Total cost: €2,499,718.56, **EU contribution**: €2,499,718.56
Beneficiaries: 8 Partners from 5 countries

For more info, visit LaiQa website https:// laiqa-horizon.eu/

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