Start of IBERIANQCI, the quantum communications infrastructure of the EuroQCI program for Spain and Portugal

The IberianQCI project combines terrestrial and space components to interconnect the quantum infrastructures of Spain and Portugal, enabling secure quantum communications with other European countries including non-neighboring ones. The project, coordinated by Indra Space, establishes a cross-border quantum link between Portugal and Spain, lays the groundwork for national QCI developments along both countries' backbones, and deploys optical ground terminals to seamlessly interconnect the EuroQCI space segment with national networks

July 22, 2026

The Iberian Quantum Communications Infrastructure (IberianQCI) project, a strategic initiative integrated into the European EuroQCI Programme (European Quantum

Communication Infrastructure), has been officially launched in May of 2026 in Lisbon. Coordinated by Indra Space, the initiative brings together leading scientific, technological and industrial partners from both Portugal and Spain with the aim of interconnecting infrastructures developed and deployed by the national initiatives EuroQCI Spain and PTQCI (the Portuguese Quantum Communication Infrastructure).
IberianQCI represents the south-western European segment of the future European quantum communications network, designed to ensure highly secure communications between European Union Member States and protect critical infrastructures and sensitive information through technologies resilient to future threats. With a duration of more than three years, the project pursues two complementary lines of action.
On one hand, IberianQCI will implement a cross-border quantum communication link using QKD between the northern border of Portugal and Spain. This will lay the groundwork for the further development of the Portuguese QCI (PTQCI) along the vertical backbone of the country encompassing all its major cities.
On the other hand, IberianQCI will implement four Optical Ground Terminals (OGTs), one in Portugal and three in Spain, to establish the seamless interconnection between the EuroQCI space segment and the terrestrial QCI networks, PTQCI and EuroQCI-Spain, thanks to the ESA demonstrator satellite EAGLE-1. This will overcome the intrinsic limitation of long-distance quantum communication due to fibers losses and will connect the two neighboring countries, also complementing the national initiatives of deploying quantum-safe links between very distant EuroQCI hubs in the peninsula, as between Madrid and Barcelona. Eventually, these capabilities will lead to interconnections between Portugal, Spain and all EU Member States through the EuroQCI space segment, and especially through the ESA SAGA program's foreseen constellation.
In Barcelona, the installation and commissioning of an Optical Ground Station equipped with a QKD Ground System for the Optical Ground Terminal (OGT) is led by ICFO - the Institute of Photonic Sciences - whose expertise in procuring and deploying QKD systems of different technology types across various locations in the Barcelona area (demonstrated through its coordinated actions in the project EuroQCI-Spain), makes it the ideal partner to fulfill these tasks. Partially funded by the Generalitat de Catalunya, through the Secretariat for Digital Policy at the Ministry of Business and Labour, the OGT will deliver ultra-high-speed and ultra-secure global scale connectivity: its integration into the Barcelona Quantum ring, a city-wide testbed for research and public services in quantum communications, will make Barcelona a gateway between space and terrestrial quantum networks.

When connecting with space, the OGT will host multiple satellite missions, including ESA's EAGLE-1 and SAGA, as well as quantum payload prototypes developed in Catalonia. This will help establish the region as a hub for photonics innovation and global-scale quantum-secure communications, fully aligned with the Catalan Space Strategy 2030, aiming at leadership

and industrial growth in space technologies. With this, space-based quantum communications across cross-border projects will dramatically boost EU cybersecurity and resilience in delivering secured public services across the European Union.

Overall, these quantum communication services will support real-world use cases, including critical infrastructure applications, as part of national and international security initiatives, extending the successful deployments and demonstrations of use cases within the EuroQCI Spain and PTQCI networks. The combination of satellites links, laser communications, quantum technologies and optical fibers, all in a single hybrid architecture, will facilitate the wider large-scale adoption of advanced quantum networks and systems, combining the best of quantum and classical security technologies with the high-degree of connectivity fostered by satellites, and therefore, removing geographical barriers between EU member states.

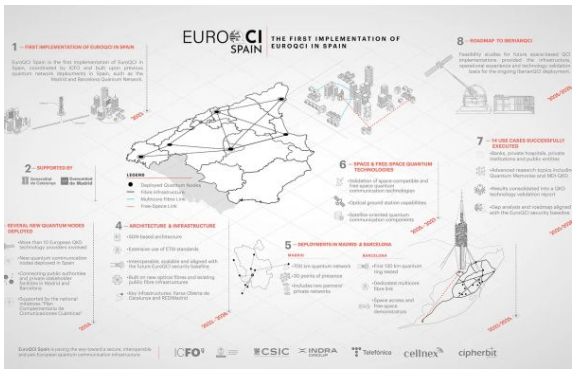
Finally, the project will also take into account the specific characteristics of private companies or public institutions that can help address Portugal, Spain and Europe's strategic and industrial priorities within the EuroQCI domain, as well as contribute to European technological autonomy and sovereignty.

The IBERIANQCI Consortium

IberianQCI brings together a consortium of leading scientific, technological and industrial entities.

From Portugal: Infraestruturas de Portugal, IP Telecom, Instituto de Telecomunicacoes, Altice Labs and Instituto Superior Tecnico.
From Spain: Universidad Politecnica de Madrid (UPM), Telefonica, Consejo Superior de Investigaciones Cientificas (CSIC), ICFO - The Institute of Photonic Sciences of Barcelona, Galicia Supercomputing Centre and the University of Vigo.

The project is coordinated by **Indra Space**, which is responsible for its operational management and technical implementation, building on previous activities in quantum communications in the Iberian Peninsula under EuroQCI and national initiatives such as PTQCI.


EUROQCI SPAIN
THE FIRST IMPLEMENTATION OF EUROQCI IN SPAIN
1 — FIRST IMPLEMENTATION OF EUROQCI IN SPAIN
2 — SUPPORTED BY
LEGEND
Deployed Quantum Nodes
Fibre Infrastructure
Multicore Fibre Link
Free-Space Link
4 — ARCHITECTURE & INFRASTRUCTURE
5 — DEPLOYMENTS IN MADRID & BARCELONA
MADRID
BARCELONA
6 — SPACE & FREE-SPACE QUANTUM TECHNOLOGIES
7 — 14 USE CASES SUCCESSFULLY EXECUTED
8 — ROADMAP TO IRIS4QCI
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