Telefónica leads the application of quantum technologies with its ‘Quantum Telco’ proposal at MWC

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Telefónica presents ‘Quantum Telco’ at this year’s Mobile World Congress (MWC), a comprehensive range of solutions that puts quantum technologies at the service of real-world scenarios in a practical and applied way.

This initiative reaffirms the operator’s technological leadership and reflects its goal of transforming quantum complexity into tools that improve the security and competitiveness of companies and administrations in their day-to-day operations, with users as the ultimate beneficiaries of these advances.

The proposal is based on four strategic pillars that visitors can see and experience at the company’s stand thanks to the presentation of real hardware and direct applications.

The first set of solutions relates to Quantum-Safe communications, which currently protect sensitive information (medical records, confidential documentation, etc.) against possible future quantum attacks, guaranteeing the integrity of the information. Telefónica is a leader in this type of solution and is positioned as the first operator to launch commercial communications services protected by the new post-quantum cryptography standards. In this regard, it is worth highlighting, for example, ‘CPD Interconnection’, a service that uses cryptography to protect the future confidentiality of critical and sensitive information that can be exchanged between data processing centers and corporate headquarters.

At its stand at MWC, which is being held in Barcelona from March 2 to 5, Telefónica will showcase three Quantum-Safe solutions, developed respectively with hardware from Adtran (Data Center Interconnection Service), Fortinet (Q-Safe office communication service), and Luxquanta (Quantum Key Distribution -QKD-).

A second pillar that Telefónica is presenting at MWC in relation to its quantum strategy is the creation of quantum ecosystems. One of Telefónica's commitments is to contribute to the birth and strengthening of quantum ecosystems in Spain through initiatives such as the creation of the Javier Echenique Talent and Technology Center, dedicated to quantum technologies and integrated into one of the most advanced quantum hubs in Europe, BIQAIN in Bilbao. With this pioneering center in Europe, Telefónica marks a milestone for the industry by integrating Fujitsu's Digital Annealer technology to drive quantum-inspired optimization solutions.

During MWC, Telefónica will make real-time requests to the Digital Annealer located in Bilbao to showcase the logistics optimization services developed in collaboration with Würth and the data network optimization and design services developed at Telefónica.

Another line of action for Telefónica is applied quantum computing, which consists of developing projects that respond to the specific needs of customers. At its stand, Telefónica will exhibit one of the world's most advanced quantum computers, the 54-qubit IQM Radiance system, a European technology designed to integrate with classical supercomputing centers, which Telefónica and IQM will provide to the Supercomputing Center of Galicia (CESGA)

In this regard, the advances in the cancer drug research project recently announced by Telefónica in collaboration with the Vithas Group and the Francisco de Vitoria University (UFV) will be presented. a pioneering initiative that uses quantum computing for the intelligent design of oncological drugs, optimizing the search for molecules to combat specific mutations such as BRAF V600E much more efficiently than with traditional computing.

Telefónica will also present its Quantum-Safe Cryptographic Hub proposal, which helps organizations protect their data by developing cryptography that is resistant to advances in quantum computing and aligned with European security standards. Telefónica will also showcase the IBM LinuxONE server at its stand, a hardware solution ready for post-quantum environments that Telefónica Tech is using to migrate organizations' IT infrastructures to new cryptographic algorithms, ensuring the long-term resilience and reliability of their digital infrastructure.

In this demo, Telefónica will showcase five real-world use cases that

reflect how it supports organizations in their transition to the quantum era, helping them anticipate the risk that cybercriminals are stealing encrypted data today using traditional techniques in order to store and decrypt it in the future with quantum computers that can compromise current cryptography. The first of these use cases focuses on the identification, inventory, and analysis of cryptographic risk; the second addresses the adoption of cryptography-as-a-service and cryptoagility models to facilitate the agile evolution of algorithms; and the third is geared toward digital sovereignty and external key management. In addition, a use case will be presented for the protection of information even during processing, and another focused on cryptographic hybridization, where the combination of conventional and post-quantum algorithms facilitates a progressive transition to cryptography that is prepared for current and future threats.

Juan Cambeiro, Head of Applied Quantum Projects at Telefónica Spain, points out:

> ‘Quantum Telco’ demonstrates that quantum technologies are no longer a promise for the future, but a reality that Telefónica is making available to its customers today to meet their needs to be more secure, efficient, and competitive companies, which ultimately results in more beneficial use by society.

Quantum Telco will be on display at Telefónica’s stand at MWC, and will also be presented on Tuesday, March 3, from 9:30 to 10:00 a.m. at Telefónica’s Agora, at the round table discussion

> Telefónica Quantum Telco: your partner of choice for applied quantum technology.

These advances at MWC 2026 add to a track record of projects already in operation that demonstrate Telefónica’s ability to apply quantum technology in critical environments such as the aforementioned CPD Interconnection service, which shields the exchange of sensitive information between data centers, and in the field of health, the collaboration with the Vithas Group and the UFV for the development of cancer drugs.

Also as a result of the collaboration between Vithas and Telefónica, both entities, in collaboration with Luxquanta, presented a pioneering healthcare cybersecurity project that consisted of the deployment of ‘Quantum-Safe’ solutions to connect the Vithas Madrid Arturo Soria

and La Milagrosa hospitals in Madrid in an ultra-secure manner, thus shielding critical data, such as medical records, medical images, and vital sign monitoring, against the future computing power of quantum computers.

For more information: Telefónica.com/en/ MWC

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