Quantum Communication and Sensing Application Lab

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Abstract: The goal of the Quantum Communication and Sensing Application Laboratory is to transform the potential of quantum physics into concrete and accessible solutions.

The Quantum Joint Lab has the goal to bridge the gap between research and real-world impact, creating a supportive environment in which quantum technologies can evolve into practical, scalable, and actionable solutions. The Quantum Joint Lab can play a pivotal role of enabler for the generation of impact of quantum technologies. It is focused on generating impact and not on reproducing yet another agency, incubator, accelerator, or a venture capitalist club.

The Quantum Joint Lab is an inclusive environment where all the available resources for the promotion of quantum technologies can be amplified with the goal to generate impact in the day-by-day life of citizens, starting from the European Union towards the World.

Our central focus is: How can we transform research in quantum technologies into a successful and profitable venture?

The quantum communication and sensing technologies covered by this project concern the most promising areas of quantum physics and promise to bring significant benefits to everyday life. Several commercial products are already available on the market. However, the large-scale adoption of Quantum Communication and Quantum Sensing is still limited by several challenges, including interoperability, the lack of concrete commercial applications and the high costs of access and use of the technology. In this context, the QSC_AppLab project represents a strategic element for the development of quantum technologies in Italy, and therefore in Europe.

The presence of a joint laboratory facilitates collaboration between different actors, promotes innovation and accelerates technology transfer, ensuring that scientific discoveries can be translated into concrete and accessible solutions, with a tangible impact on the economy and society. The QCS_AppLab Joint Lab plays a strategic role in connecting research, technology and the market and intends to become an attractive reality of interests, infrastructures and skills that, starting from the second year of life, will be able to self-sustain its activities. The objectives of the project concern:

1. Establishment of the quantum ecosystem of the Joint Lab, starting from the establishment of an interdisciplinary working group.
2. Design and implementation of Quantum Communication and Quantum Sensing applications to be transferred to the market.
3. Dissemination of the results obtained both as a quantum ecosystem and with regard to the applications created