Call 2017

SQUARE

Silicon Photonics for Quantum Fibre Networks

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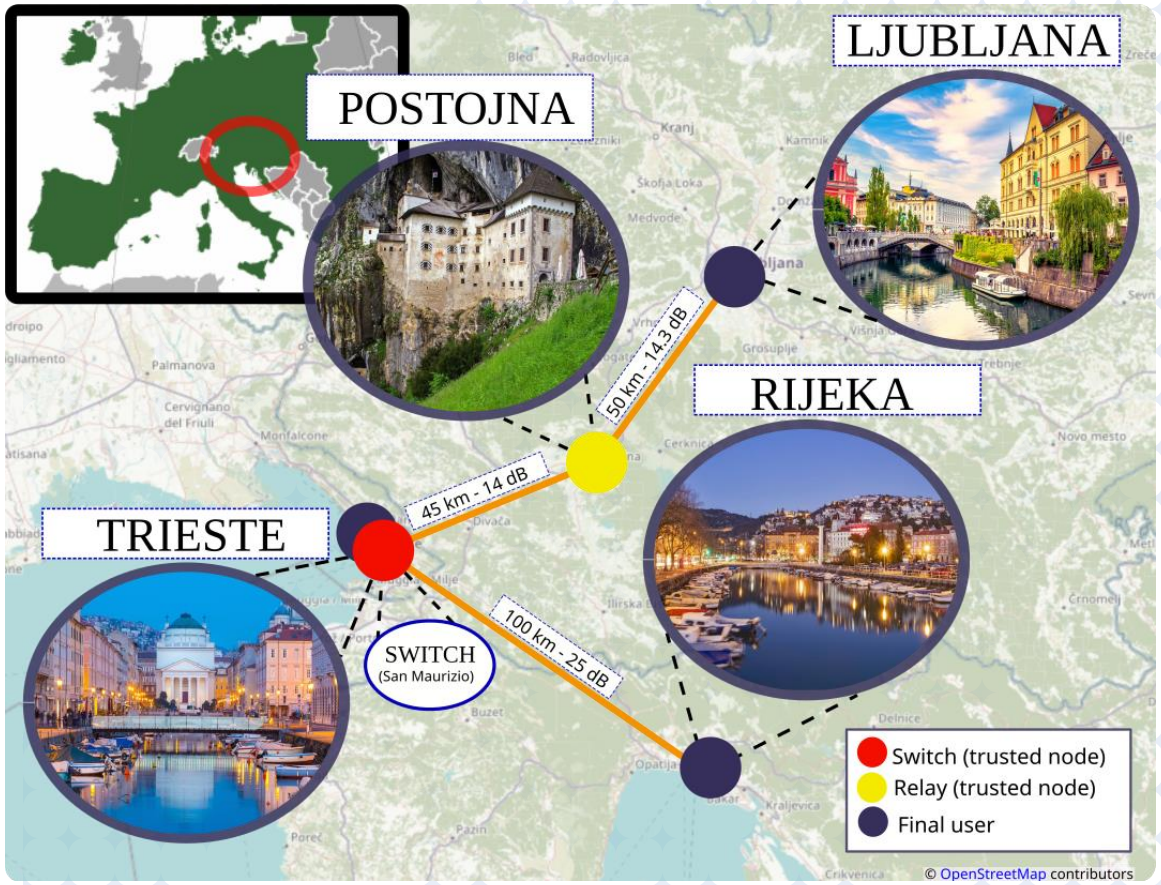
Social Media

SUCCESS STORY (highlights)

CHALLENGE – Demonstrate breakthroughs for bringing quantum communication from the lab to the field e.g processing of quantum – states, bits and keys. Specifically, entanglement swapping, frequency conversion of quantum states and generation of random numbers

SOLUTION – application of integrated silicon photonics, improved protocols for quantum key distribution, co-existence of classical communication channels and quantum information

PLANNED AND SURPRISING/UNPLANNED OUTCOMES – Demonstration of inter-European quantum communication network between Trieste, Rijeka and Ljubljana – public demonstration of QKD @ G20 digital ministers meeting in Trieste



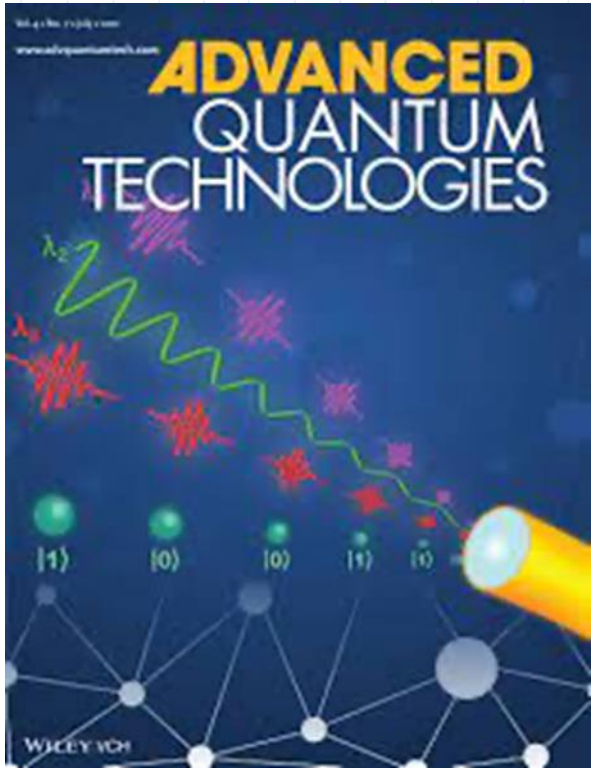
IMPACT (RRI aspects)

GENDER: A mix. of male and females were funded by the project – at all levels from research-management to PhD students. It is noted that one of the female students B. Da. Lio was awarded a poster price at the International conf. on Integrated Quantum Photonics.

OPEN SCIENCE: More than 16 publications resulted from the project. One conference was planned to be held in Copenhagen (cancelled due to COVID19)

SCIENCE EDUCATION: several students were educated in projects affiliated with the project. In addition, partners participated in national efforts on bringing science to the people e.g. culture night in Copenhagen

PUBLIC ENGAGEMENT: One outcome – an inter-European quantum communication network between Trieste, Rijeka and Ljubljana was demonstrated to the public in relation to the G20 digital ministers meeting in Trieste



IMPACT (potential users)

RELEVANT INDUSTRY BRANCH,

SQUARE have assisted companies to develop quantum technologies

KEY COMMERCIALLY RELEVANT APPLICATIONS

Quantum communication sciences

EXISTING/POTENTIAL END USERS

Companies have used knowledge developed in SQUARE:

NLIR (dk), www.nlir.com

QTI (Italy): www.qticompany.com

QTI QUANTUM TELECOMMUNICATIONS ITALY

nlir NLIR | Mid-Infrared Sensors

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 731473.