QOSiLICIOUS

Quantum-Optic Silicon as a Commodity

Newsletter
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Launching a New Era in Quantum Communications:
QOSiLICIOUS @ Kick-Off Meeting

The kick-off meeting took place on the February 17-18 at the AIT headquarters in Vienna and brought together leading researchers and industry experts from the wider European region.


Source: AIT

The QOSiLICIOUS consortium is led by AIT and brings together several prominent partners: Nvidia (Israel), IHP – Leibniz Institute for High Performance Microelectronics, and the University of Glasgow. The meeting agenda was designed to ensure a comprehensive understanding of the project's objectives, scope, and implementation plan.

The session began with the "road to QOSiLICIOUS," followed by introductions where partners shared their background expertise. Roles and responsibilities were clearly defined, and the project timeline along with key milestones were highlighted. Communication and dissemination strategies were also addressed. The meeting concluded with the definition of clear next steps. Overall, the kick-off meeting established a strong foundation for the QOSiLICIOUS project, fostering collaboration and aligning all partners towards the common goal of advancing quantum communication technology.

Enabling Technology:
All-silicon QKD transmitter

The recent paper on the world's first monolithic SiGe QKD transmitter chip, which was accepted as a post-deadline paper at the OFC Conference, presents a significant advancement in quantum communication technology. This innovative transmitter, fabricated on a silicon platform, achieves secure-key generation over 45.9 km of field-deployed fiber and operates across 32 WDM channels wit hout the need for III-V materials. The transmitter utilizes silicon-germanium technology to achieve high performance and reliability, making it suitable for integration into existing telecom infrastructure. It employs advanced photonic and electronic integration techniques to ensure efficient and stable operation. The ability to function across multiple WDM channels demonstrates its versatility and potential for scaling up quantum communication networks. This breakthrough showcases the feasibility of developing compact and cost-effective QKD systems, paving the way for widespread adoption of quantum communication networks

Building on this enabling technology, the QOSiLICIOUS project capitalizes on a strong collaboration between IHP and the University of Glasgow to extend the all-silicon approach to the receiver. The project also incorporates an all-silicon QRNG, with Nvidia and AIT providing optimal use cases for these technologies. Together, these efforts are pushing the boundaries of quantum communication, ensuring robust and secure data transmission.

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Extending the Trust Continuum till the Edge of ICT Networks

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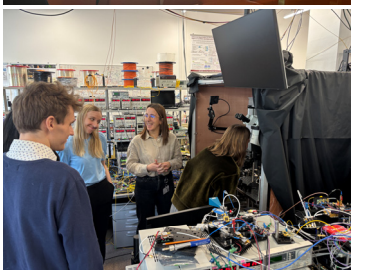
Highlights from Recent Events:
QOSiLICIOUS in Action

The QOSiLICIOUS project has been actively showcased at several key events recently. At the Quantum Austria Networking Event in Vienna, Bernhard Schrenk highlighted the project's innovative approach to quantum technology, connecting with industry leaders and exchanging ideas. During the Quantum Satellite Workshop organized by the European Space Agency, Mariana Ramos presented the project's potential to revolutionize quantum communications. The Quantum Career Day for students, organized by Photonics Austria, featured an inspiring talk by Mariana Ramos, motivating students to pursue careers in quantum technology, complemented by a demonstration of a QKD system by AIT Austrian Institute of Technology. On World Quantum Day 2025, Martin Stierle represented QOSiLICIOUS in a panel discussion on the latest developments in quantum research, organized by FFG Austrian Research Promotion Agency. Additionally, the project was highlighted during lab visits by the Director for Prosperity of the EU Commission, and an Austrian member of the European Parliament. These events have collectively reinforced the project's commitment to advancing quantum communication technology and fostering collaboration within the quantum community.



Meet the QOSiLICIOUS Team

Stay connected with the latest updates and breakthroughs from the QOSiLICIOUS project! Follow our journey in advancing quantum communication technology by visiting our website and LinkedIn page. Don't miss out on the exciting developments and collaborative efforts driving the future of quantum communications. Follow us today!

www.linkedin.com/company/qosilicious-qkd/

https://qosilicious.eu/

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