



Press Release

Geneva, July 21st 2020

Services Industriels de Genève (SIG) collaborates with ADVA and ID Quantique to secure their links between datacenters with leading edge quantum cryptography for the 1st time

Services Industriels de Genève (SIG), Geneva’s utility company, ID Quantique (IDQ), the world leader in quantum-safe security solutions, and ADVA, a leader in secure open optical networking solutions, announced today the implementation of the first quantum encrypted datacenter interconnection. After a fruitful collaboration, this first step is important for the development of data network security using quantum technology.

Since September 2019 and as part of the European project OPENQKD¹, SIG has been pioneering the use of quantum technologies to secure the links between its datacenters to provide long-term protection of sensitive data in motion. A revolution in the world of cybersecurity, quantum cryptography is a direct response to the potential threats posed by the development of quantum computers.

Quantum Key Distribution (QKD) is a technology that exploits a principle of quantum physics – observation causes perturbation – to exchange cryptographic keys over optical fiber networks with ultimate security. A Quantum Random Number Generator (QRNG) embedded in the QKD system is used to provide a high degree of entropy (randomness) for key generation.

Long-term data security for SIG is made possible thanks to innovative, standard-based encryption and quantum key distribution solutions from ADVA and IDQ. Working in partnership, ADVA and IDQ deliver secure data exchange with guaranteed confidentiality and authenticity.

“We have been working with ADVA for many years” says Grégoire Ribordy, CEO and co-founder of ID Quantique. “Combining secure Layer 1 encryption with QKD provides the best security for data in motion. Sensitive data is increasingly in danger from the growing threat of cyberattacks and more and more companies, especially banks and governments, are highly concerned by this issue. We are honoured to work with SIG and ADVA on this QKD secured datacenter interconnection project.”

SIG is delighted with the positive results of this ambitious project. Christian Brunier, Managing Director of SIG shares: *“Thanks to this new technology, SIG now benefits from an advanced quantum cryptography solution which guarantees optimal security during the transfer of data. For SIG, innovating is essential to meet the expectations of tomorrow’s world.”* This innovation makes it possible to secure the SIG network and data transmission at the highest level.

¹ Funded by the EU with €15 million, the purpose of the [OPENQKD](#) research project is to create, and test, a resilient communications infrastructure with a built-in quantum element. Utilizing Quantum Key Distribution (QKD), it will lay the groundwork for a pan-European quantum communication infrastructure that uses satellite as well as ground-based solutions. OPENQKD will boost the security of critical applications in the fields of telecommunication, finance, healthcare, electricity supply and government services. To do so, the EU has selected 38 organizations from 13 countries across the continent to work on specific use cases related to their respective sectors of activity. ID Quantique provides the QKD systems for the use cases in Geneva and many others in Europe.

“QKD is a method to secure the key exchange against quantum computer attacks. We were the first to implement the ETSI key delivery API² on a commercial high-speed optical networking product. Through our partnership with ID Quantique, we can leverage their technology and expertise to provide a new level of long-term security in data transport” says Jörg-Peter Elbers, Senior Vice President of Advanced Technology, Standards & IPR, ADVA.

► [Read the use case](#)

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² https://www.etsi.org/deliver/etsi_gs/QKD/001_099/014/01.01.01_60/gs_qkd014v010101p.pdf