Press Release

Geneva, September 1st 2021

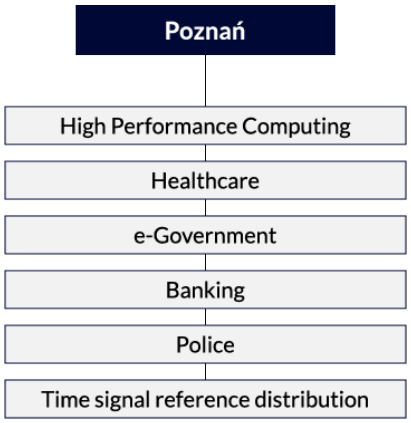
Poznań Supercomputing and Networking Center (PSNC) and ID Quantique (IDQ) collaborate to provide the first Quantum Key Distribution (QKD) services on an operational network in Poland and the world's first cross border QKD connection

As part of OPENQKD, a collaborative European project that installs and runs testbeds in several European locations to showcase Quantum Key Distribution (QKD) solutions under a variety of different use cases, PSNC together with IDQ have recently completed two major implementations.

1. The first QKD infrastructure on an operational network in Poland

QKD – aka Quantum cryptography – is a technology that uses quantum physics to secure the distribution of symmetric encryption keys in motion. This technology uses a fundamental property of quantum physics: observation causes perturbation. This means that if the encryption keys are intercepted 'in motion', the sender is alerted and can decide not to use them.

PSNC together with IDQ have established a QKD infrastructure in Poznań (Poland) to provide and support various QKD use cases based on existing PSNC services, such as High Performance Computing (HPC), e-health and local administrations. The goal is to make QKD fully operational on Poznań and Pioneer networks first and to further extend to intercity links and services at a later stage.



PSNC QKD use cases under OPENQKD project

QKD is already used successfully as part of the OPENQKD project in Geneva, where it provides ultra-secure digital asset safekeeping for financial institutions such as central banks, global custodians, cryptocurrency exchanges and asset managers.

2. The world's first cross border QKD connection

The first international inter-city QKD link connects Cieszyn in Poland to Ostrava in Czech Republic. The implementation is the result of a cooperation between Poznań's Supercomputing and Networking Center, CESNET, IT4Innovations and the National Supercomputing Center at VSB - Technical University of Ostrava academic network.

The quantum channel established between two Cerberis 3 QKD systems from IDQ is exchanging keys since

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July 1st 2021, on a 75-kilometer fiber-optic route. It provides the highest security and confidentiality for a number of HPC and other services between Poznań and Ostrava (VSB).

New era of safe services

Quantum technologies now provide safe services to users. Innovative quantum solutions are currently being tested and introduced in the best research centers in Europe and in the world.

Quantum communications are undoubtedly the future – also in everyday's life. Quantum Key Distribution technology is already widely used by leading companies in Asia. Sending QKD keys to third party cryptographic systems is an example of the safest known method of communication. Quantum technology can be used today for securing internet connections, from smartphones and computers to datacenters.

> *Quantum communication is another milestone in the development of IT infrastructure, not only in science. Today we know for sure that secure data transmission between processing centers such as PSNC is a global challenge. Safe exchange of information on health, crisis situations or financial markets is the first application of this scale that we will implement*
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> Cezary Mazurek, director of the Poznań Supercomputing and Networking Center

> *We feel honored to support Poznań University to build up a Quantum Competence hub and the first cross border installations, which will be the basis for the EU QCI in Eastern Europe.*
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> Axel Foery, EVP Quantum-Safe Security at ID Quantique

Piotr Rydlichowski – Project coordinator at PSNC

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