



Quantum-safe data center interconnects

A practitioner's guide

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XIV Jornadas REDIMadrid 2019



ADVA at a glance



Background

- Headquartered in Munich, Germany
- Funded in 1994, >1,850 employees
- Over EUR 0.5 billion turnover



Our vision

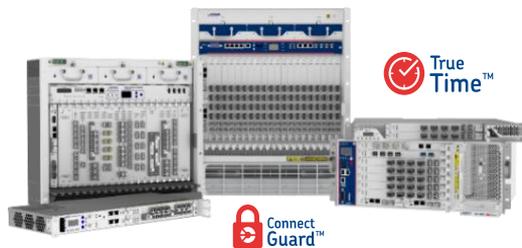
Virtualization and software are keys to differentiated solutions, but hardware will remain strategically important



Our mission

Being your trusted partner for connecting, extending and assuring the cloud

Open optical networking



Packet edge & NFV

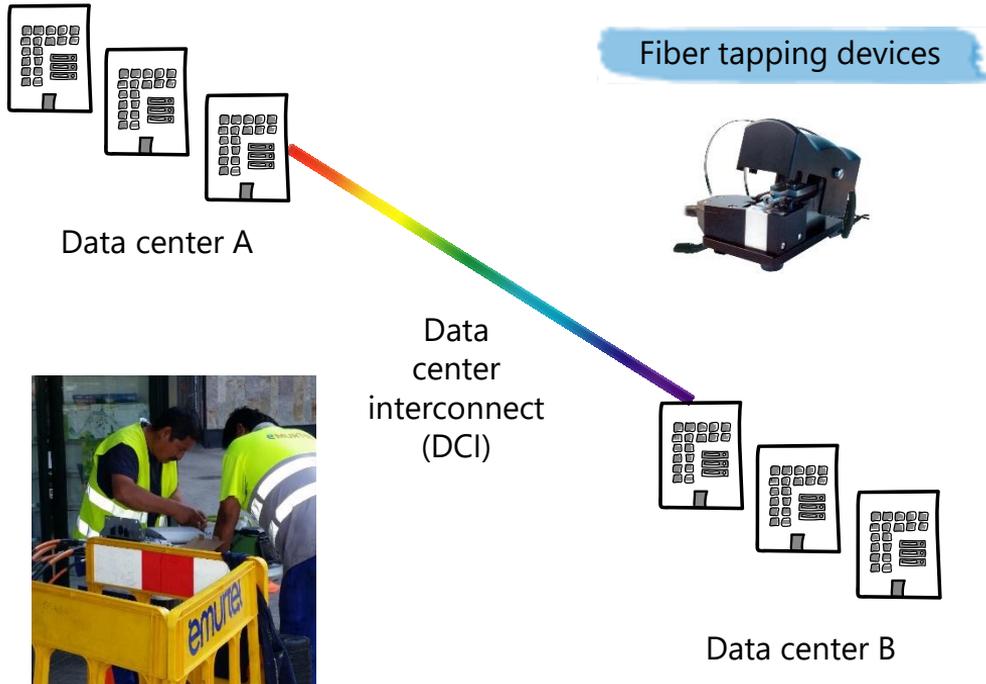


Network synchronization



Innovation – speed for customers – trusted partner

Why do we care?



Fiber tapping devices

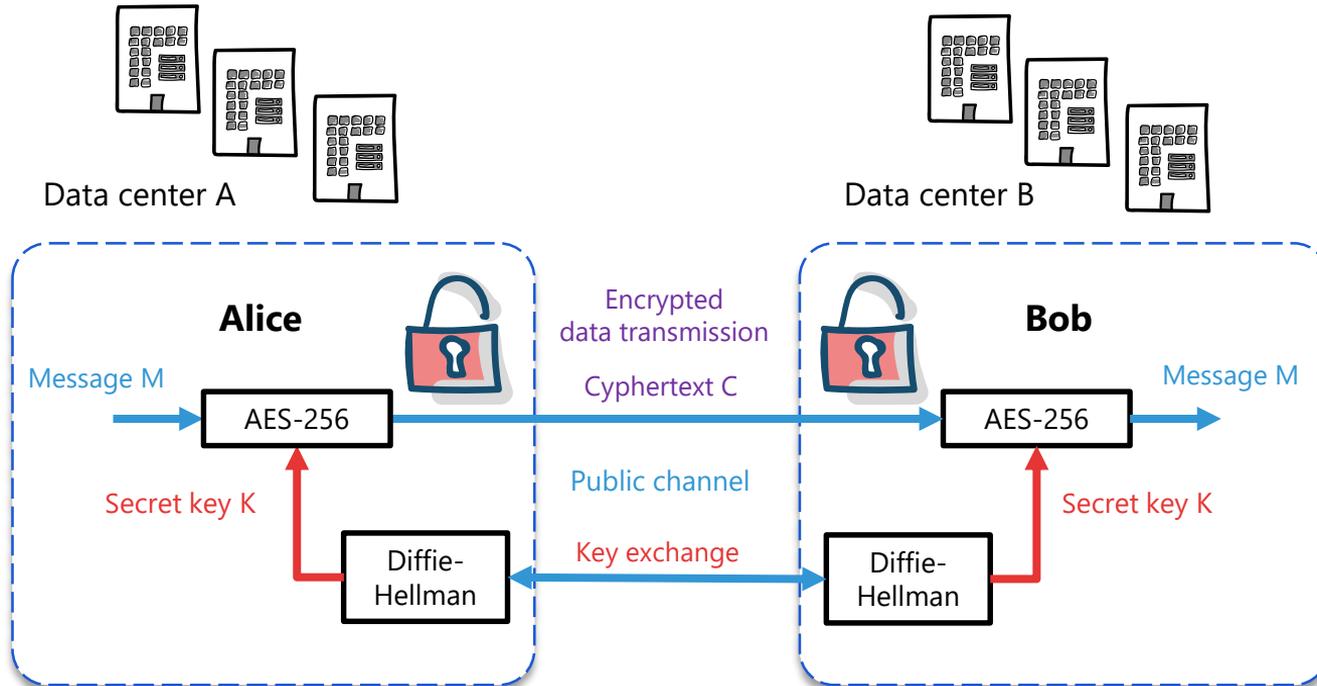


DWDM interception devices
10...100 Gb/s, direct detect & coherent



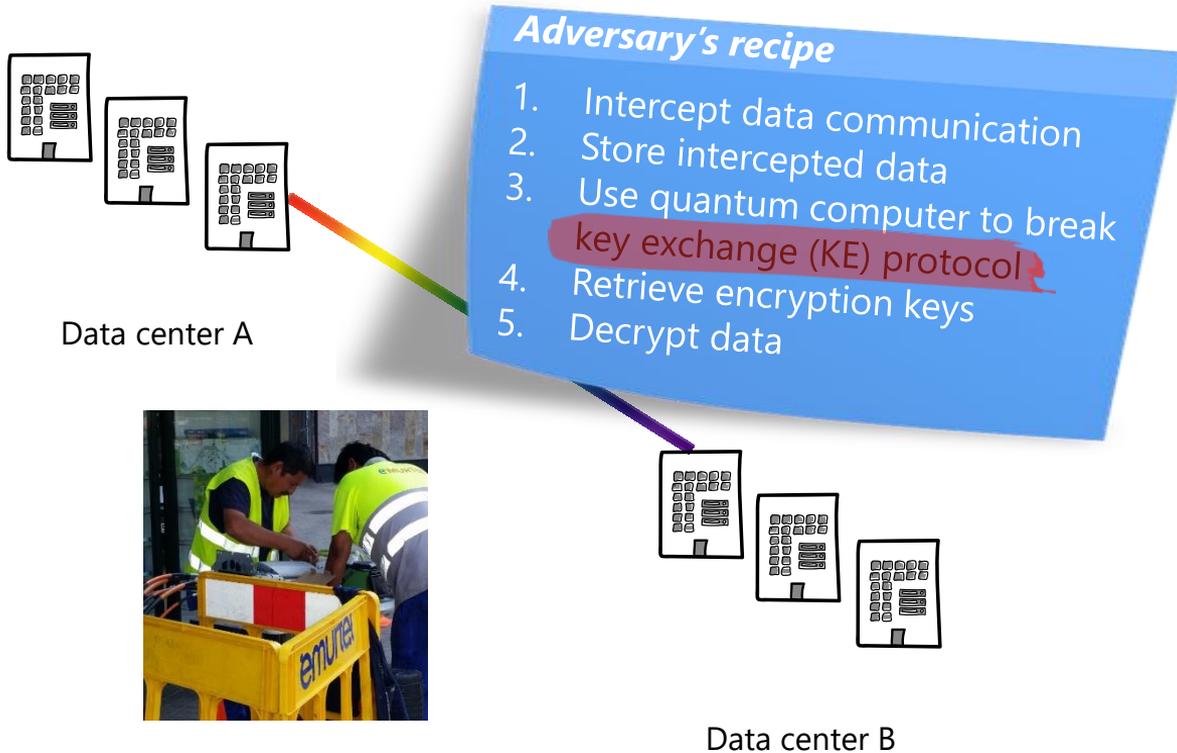
Intercepting data center traffic is easy and can reveal a vast amount of critical data

What can we do?



On-the-fly encryption **secures** data communication over **insecure** channels

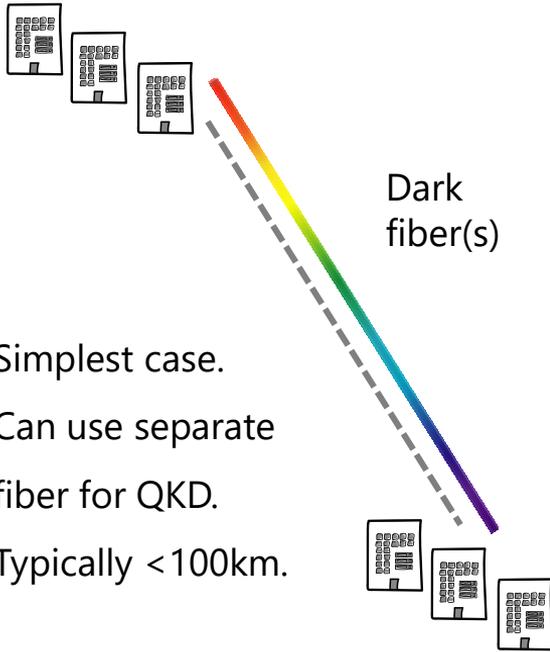
What changes with quantum computers?



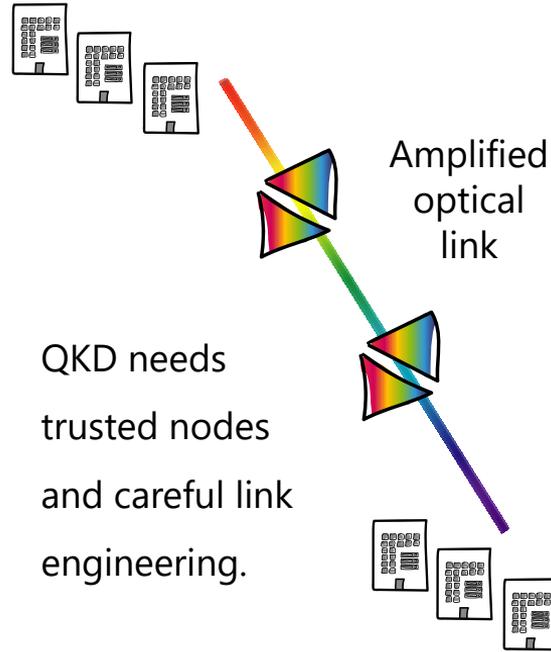
Quantum computers put secrecy of encrypted data communication at risk

What are practical DCI deployment scenarios?

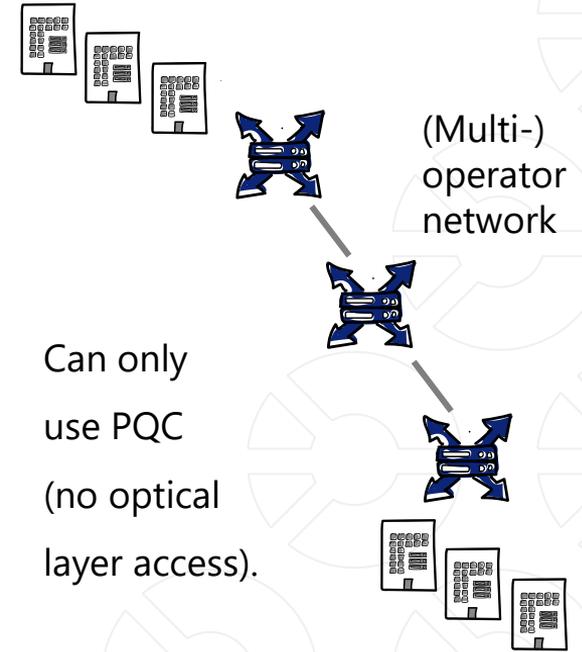
Metro DCI link



Long-haul DCI link

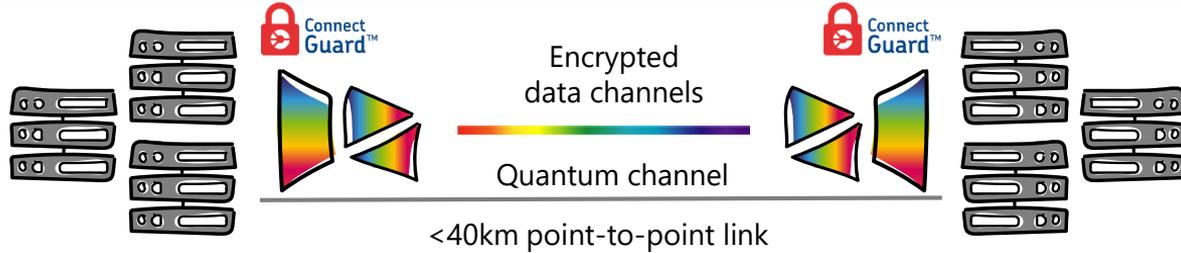


DCI via layer 1 VPN

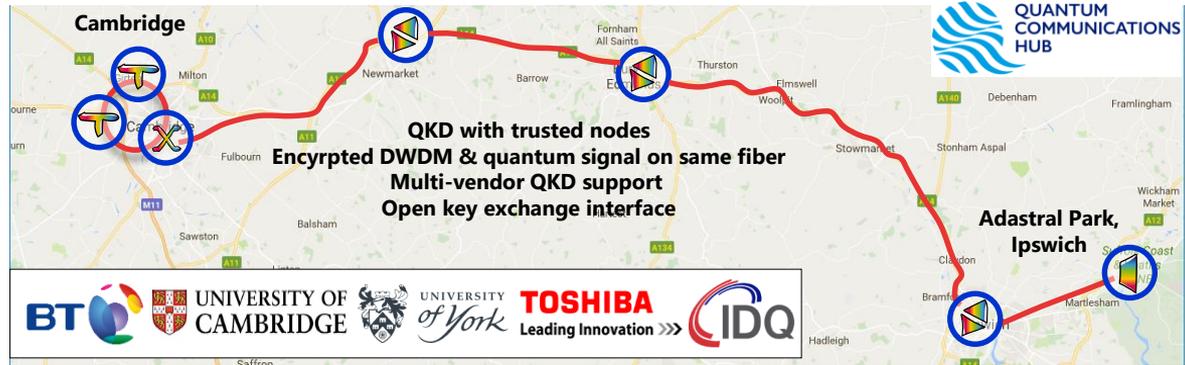


Some quantum-safe deployment examples

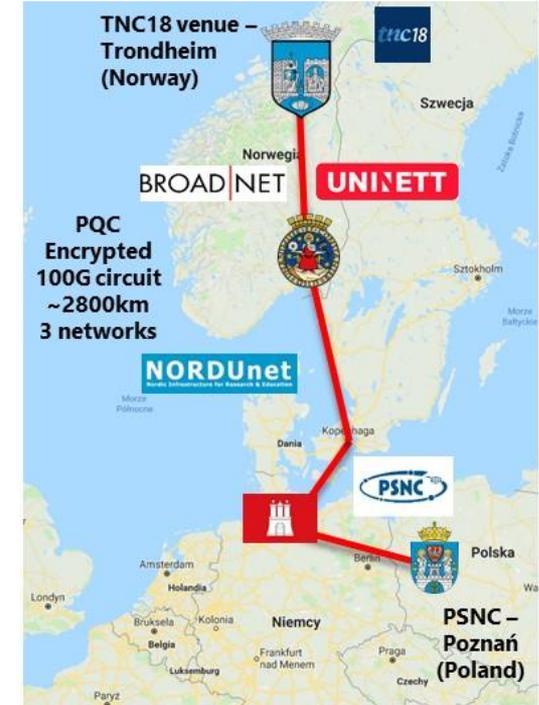
Financial institution



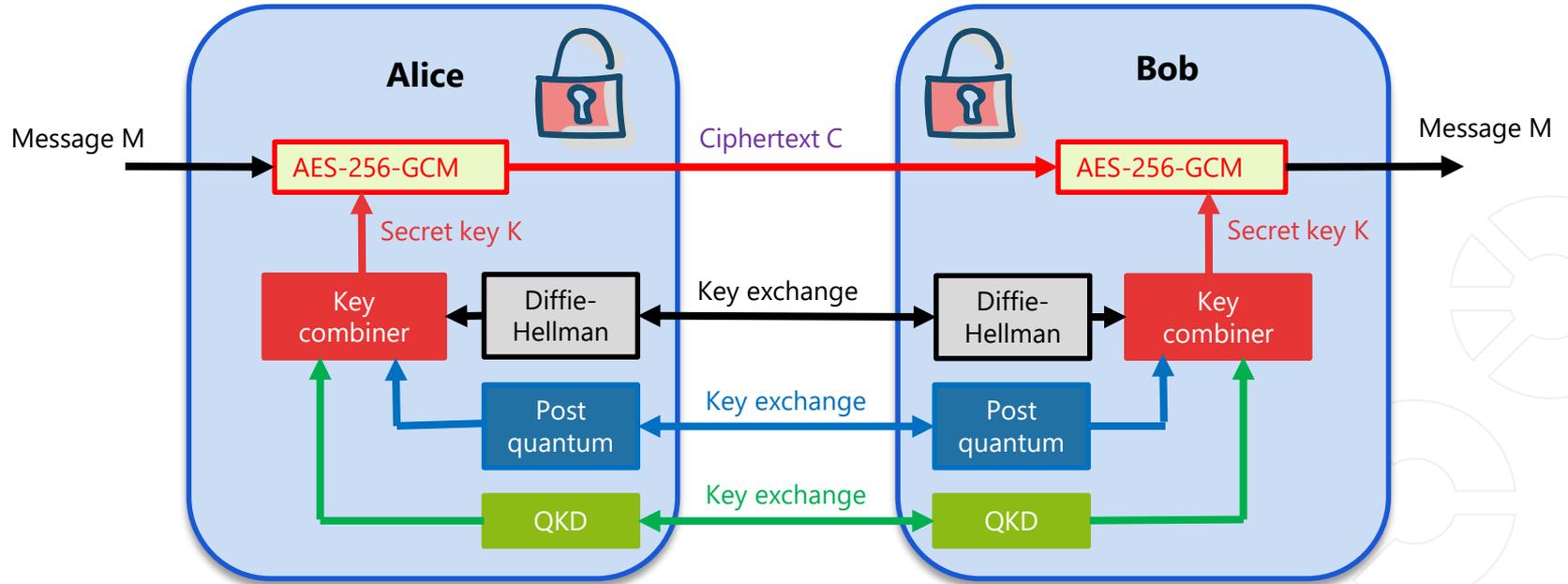
UK regional network



EU research network

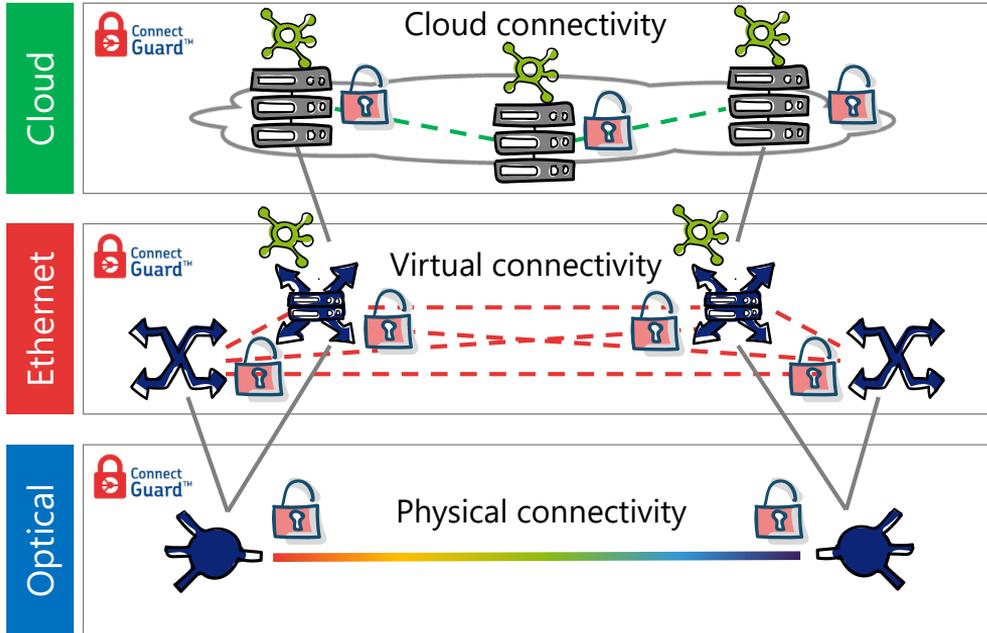


Do I need to decide for one KE scheme?



Key exchange schemes can be combined to provide robust quantum-safe solutions

ConnectGuard™ portfolio evolution



Open ETSI key delivery API
(secure [quantum] key insertion)

Post-quantum key exchange
(McEliece, NIST PQC compliant)

Crypto-agility and ease-of-use



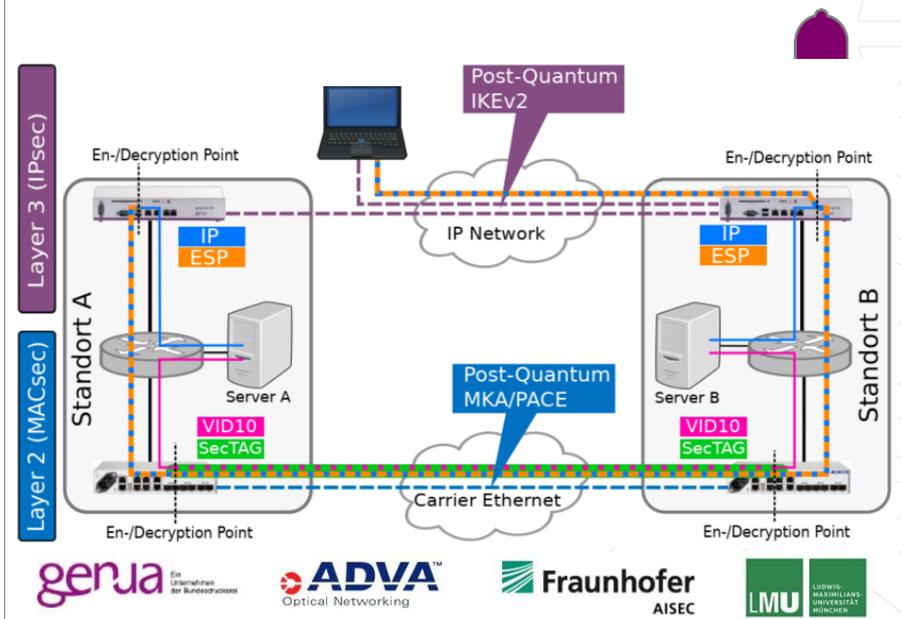
Future-proof, secure connectivity solutions

Collaborative research & innovation @ ADVA

Open EU Testbed for Metro-QKD

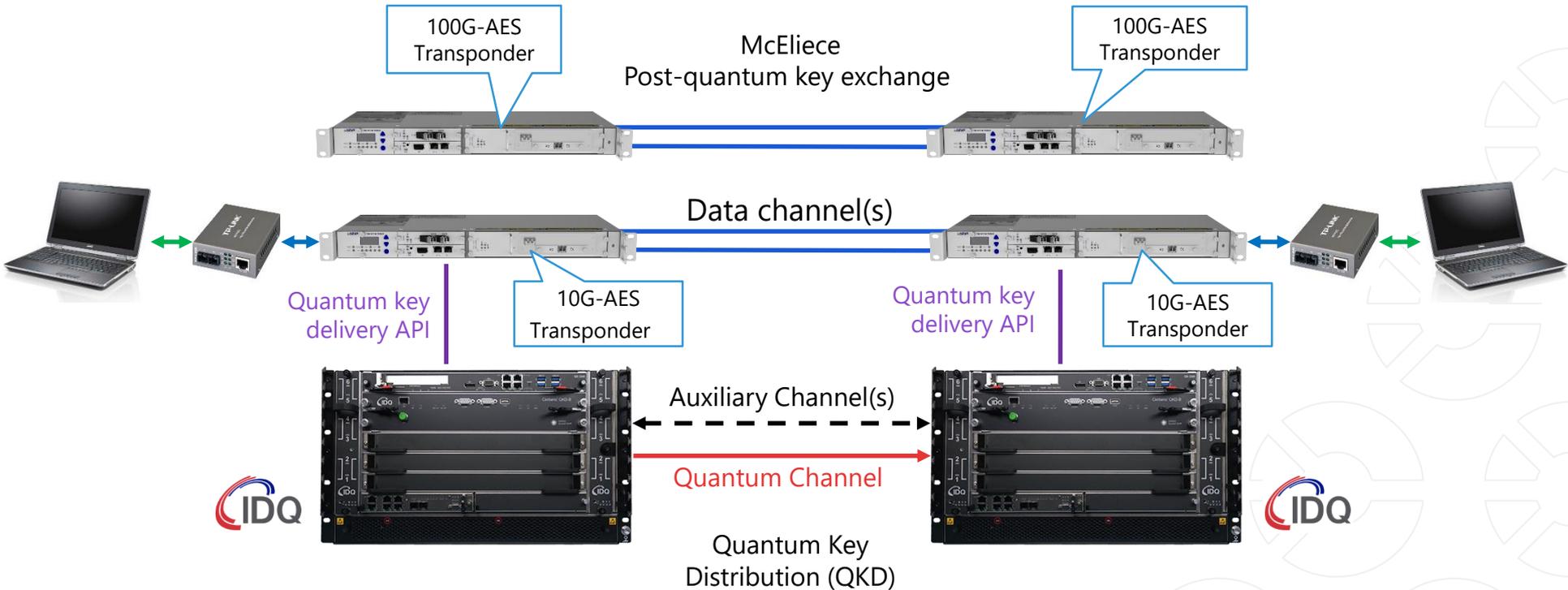


PQ key exchange for layer 2 & 3



Bringing quantum-safe communication into operation

Quantum-safe communication in action



Have a look at our demos!



Thank you

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