



ID Quantique's perspectives on the use of quantum technologies for security

ITU Workshop on Quantum Information Technology (QIT) for Networks

Matthieu LEGRE, 06th June 2019, Shanghai, China

ID Quantique Company Profile

Company Profile



Founded in 2001



By 4 quantum physicists from the University of Geneva



Geneva, Switzerland
Seoul, South Korea

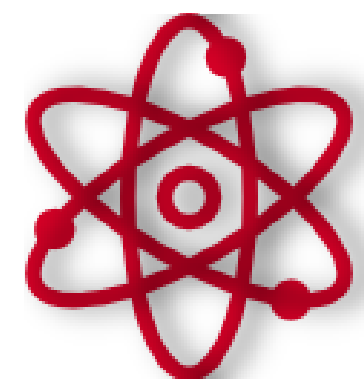


100 employees, including 50 engineers/scientists

Washington & Boston (USA)
Bristol, UK



Investments in 2018 by SK Telecom & Deutsche Telekom



Develops technologies and products based on quantum physics within 2 business units:
- Quantum-Safe Security
- Quantum Sensing

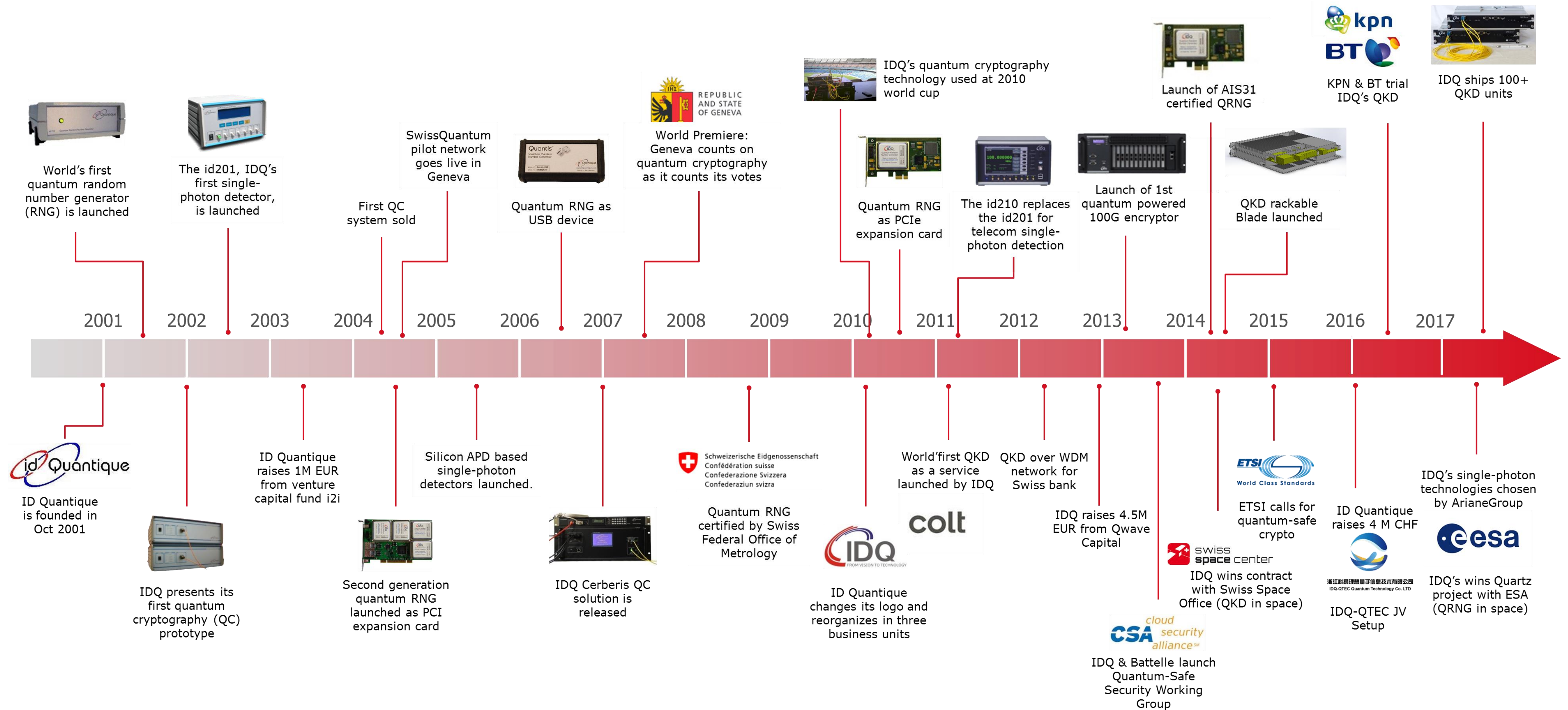


Performs R&D, production, professional services, integration, support



Clients: Governments / Banks / Gaming Industry / Universities / IT Security

2001-2019: 18+ Years of Quantum Innovation



2018 Investments by SKT and DT



LATEST NEWS PRESS RELEASES

Deutsche Telekom plans to make a strategic investment in ID Quantique

ID Quantique SA (IDQ) today announced a strategic investment plan from Deutsche Telekom, the German telecom giant. The investment is part of a joint agreement between SK Telecom, a majority investor in IDQ, and Deutsche Telekom to strengthen their competitiveness in 5G and offer specialised highly...

[DISCOVER MORE](#)

The investment is part of a joint agreement between SK Telecom, a and Deutsche Telekom to strengthen their competitiveness in 5G and offer specialized highly secure 5G services

The investment will strengthen ID Quantique's position as the global leader in quantum safe cryptography and quantum sensing solutions.

ID Quantique and SK Telecom join forces to form the global leader in quantum communications and quantum sensing technologies

26th February 2018

ID Quantique SA (IDQ) today announced a strategic investment plan of US\$ 65 million from investor SK Telecom (NYSE:SKM), the South Korean telecom giant. The investment will strengthen ID Quantique's position as the global leader in quantum safe cryptography and quantum sensing solutions.

[DISCOVER MORE](#)

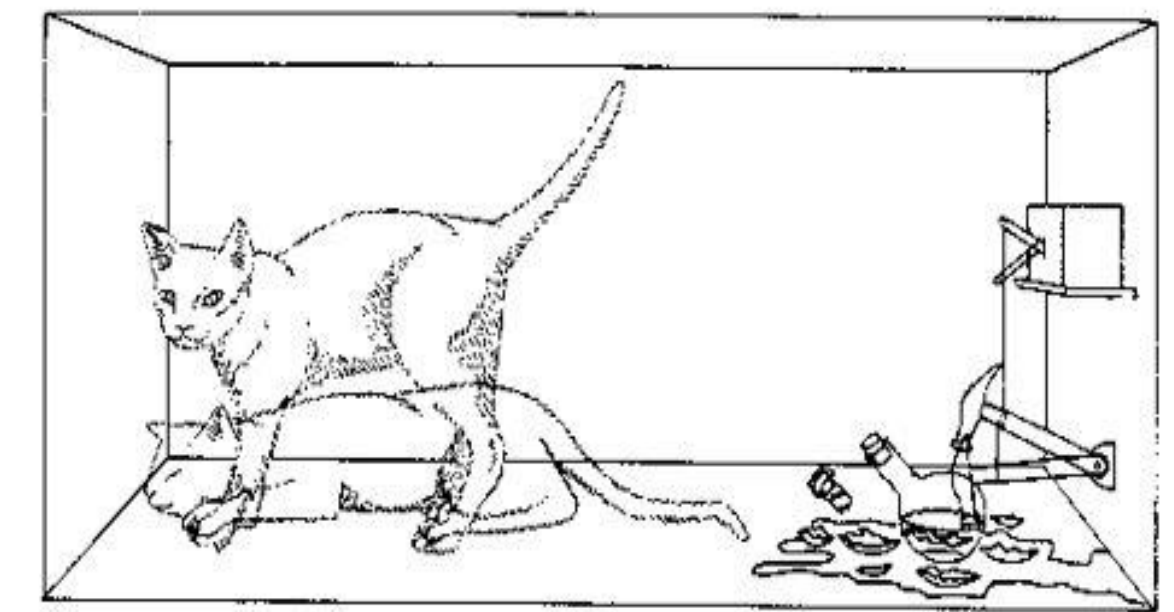


Quantum-Safe Security

The Threat: The Quantum Computer

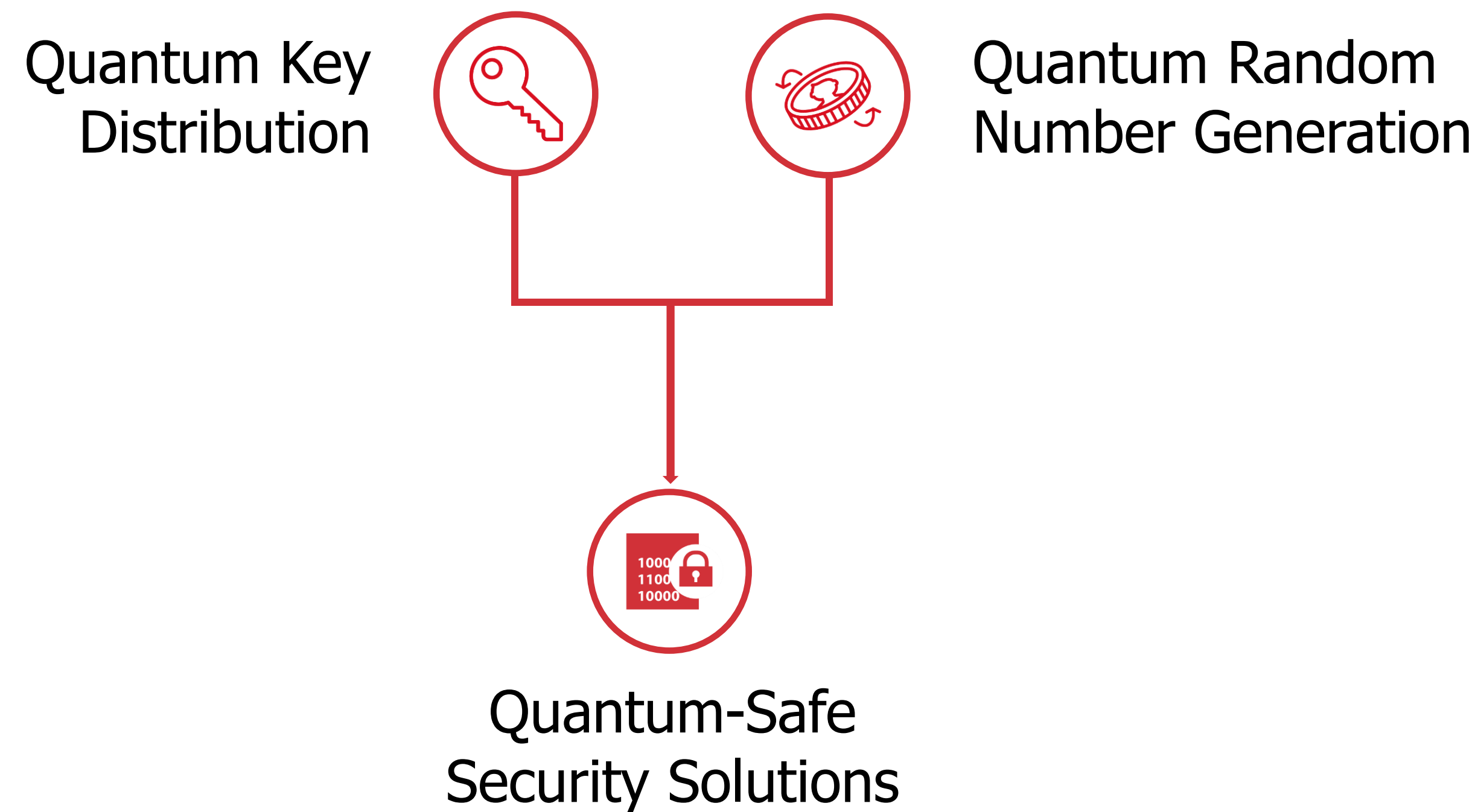
- Computation with **Qubits**
- Main difference: build coherent superposition of states
- Behaves like a massively parallel computer
- Some “intractable” computations become feasible
- Threat: it will break today’s widely used public key cryptographic primitives (RSA, ECC...)
 - ↳ This is why Quantum Computing is now discussed in Information Security

Schrödinger’s Cat



Protecting mission-critical data for the long-term future

Protecting mission-critical data for the long-term future



5G

MACROTRENDS

Unlimited possibilities
Unlimited data transfer
Interconnected world

IoT



Self-driving cars, virtual reality, smart cities, smart homes, networked robots

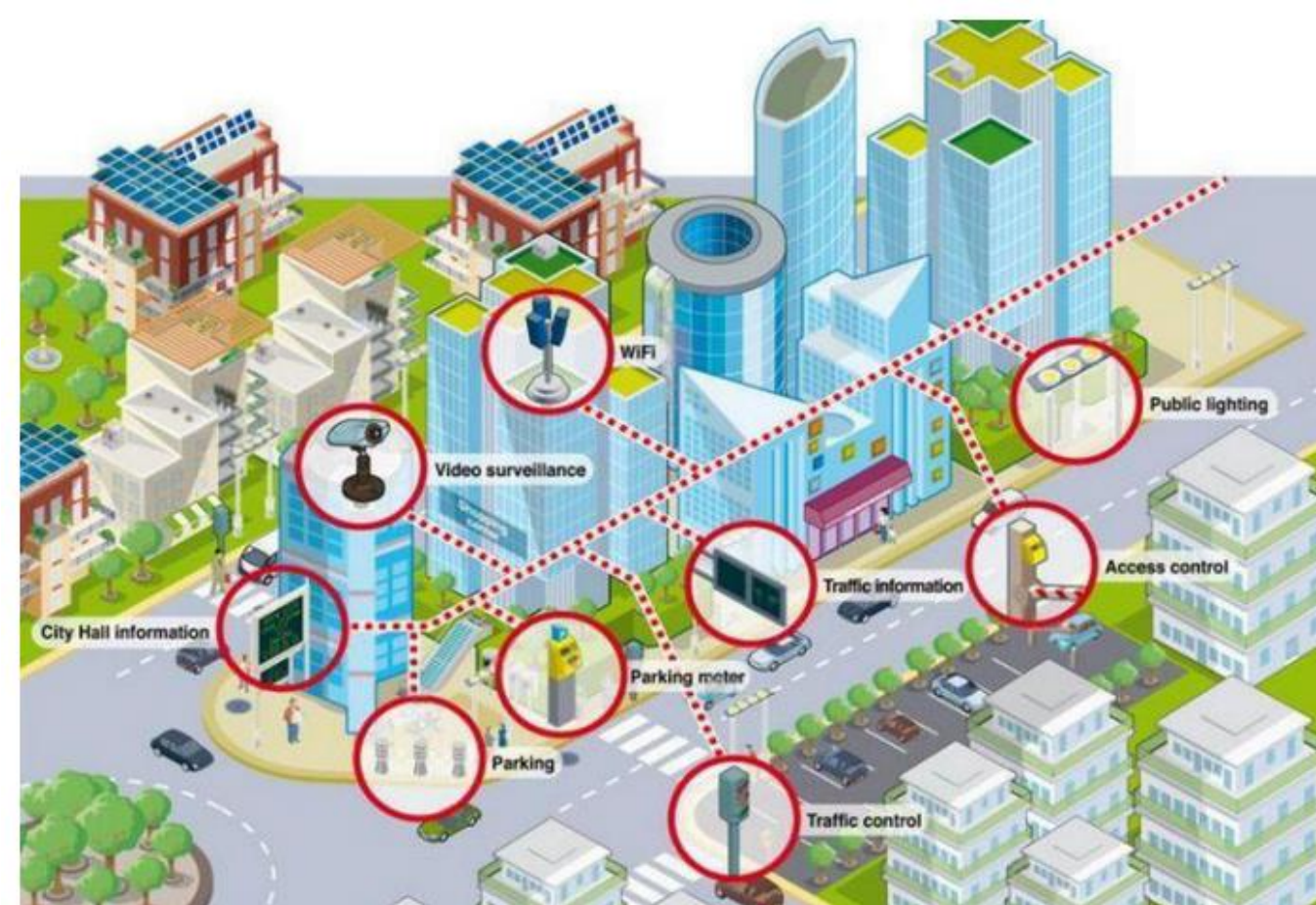
5G

MACROTRENDS

Unlimited possibilities
Unlimited data transfer
Interconnected world

IoT

Need for greater security

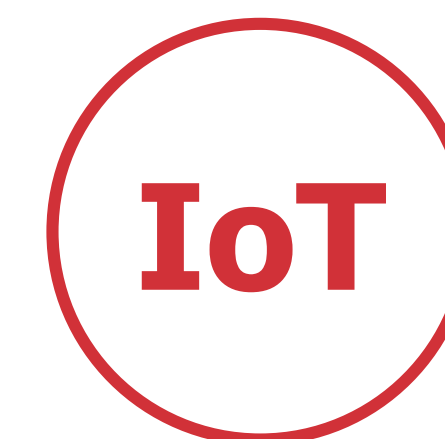


Self-driving cars, virtual reality, smart cities, smart homes, networked robots



MACROTRENDS

Unlimited possibilities
Unlimited data transfer
Interconnected world



Need for greater security



IDQ and SKT are present at ITU and ETSI to standardize the use of quantum technologies to support long-term security of those new types of networks.



Self-driving cars, virtual reality, smart cities, smart homes, networked robots

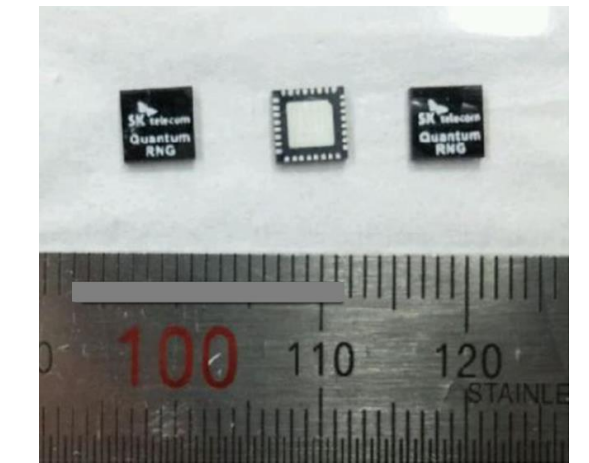
QRNGs today



- Current generation



- Next generation IoT QRNG chip



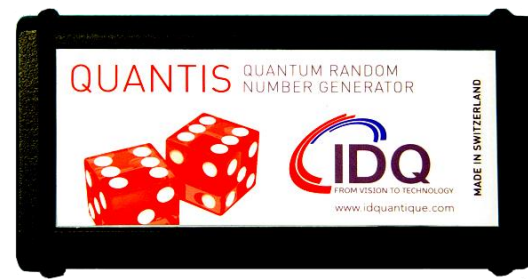
SPL_CLK	— <input type="checkbox"/> SCK	SDI	— <input type="checkbox"/> SPL_DI	
SPL_DO	— <input type="checkbox"/> SDO	SCS	— <input type="checkbox"/> SPL_CS	
IF_SEL	— <input type="checkbox"/> IS	QRNG	VI	— <input type="checkbox"/> VST_INFO
I2C_SCL	— <input type="checkbox"/> ISC	IDA	— <input type="checkbox"/> I2C_SDA	
VDD_A	— <input type="checkbox"/> VA	VS	— <input type="checkbox"/> VSS	



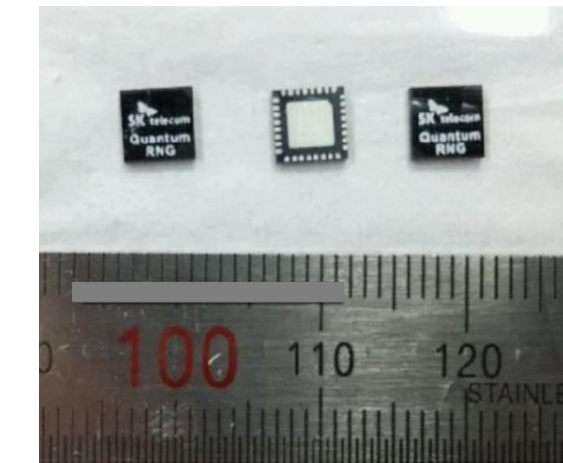
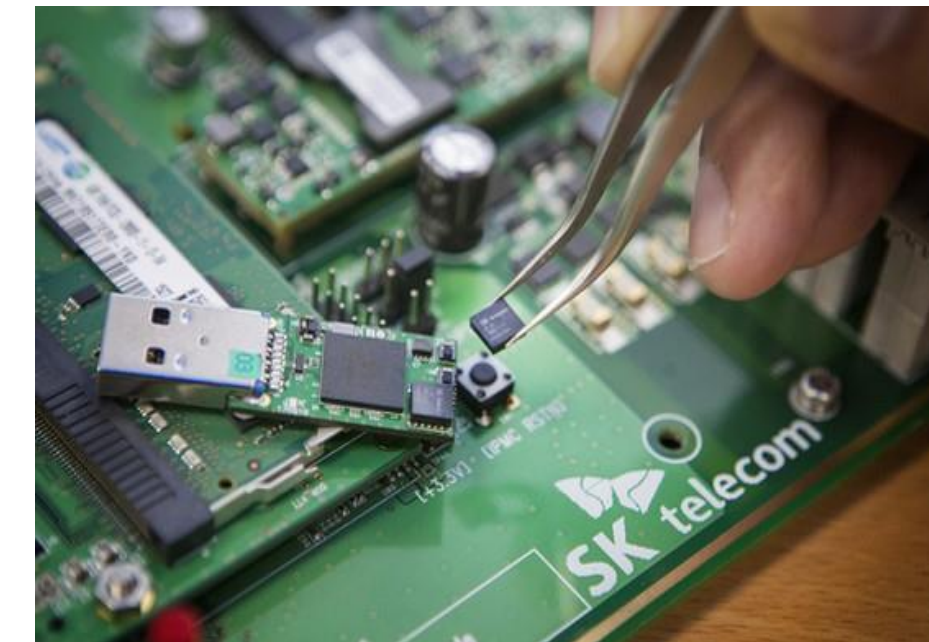
QRNGs today



- Current generation

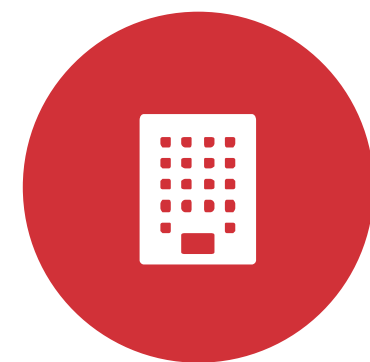


- Next generation IoT QRNG chip



SPL_CLK	— <input type="checkbox"/> SCK	SDI	— <input type="checkbox"/> SPL_DI	
SPL_DO	— <input type="checkbox"/> SDO	SCS	— <input type="checkbox"/> SPL_CS	
IF_SEL	— <input type="checkbox"/> IS	QRNG	VI	— <input type="checkbox"/> VST_INFO
I2C_SCL	— <input type="checkbox"/> ISC	IDA	— <input type="checkbox"/> I2C_SDA	
VDD_A	— <input type="checkbox"/> VA	VS	— <input type="checkbox"/> VSS	

Applications



Banking



Datacentre
Telco/MSP



Gaming



Cryptography



Critical
Infrastructure



IoT



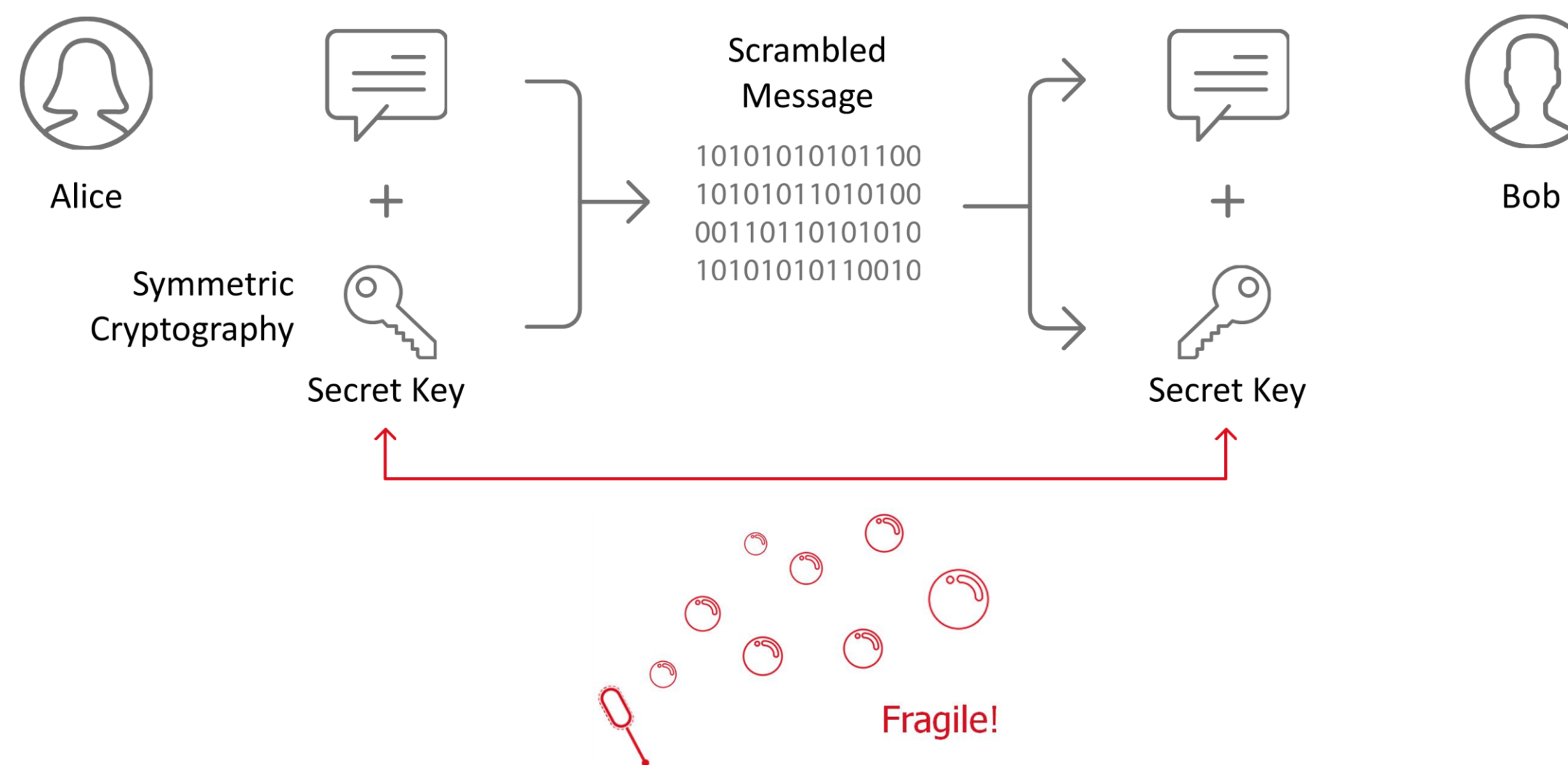
Quantum Key Distribution: Overview

- Current generation

Cerberis 3



Clavis3 R&D Platform



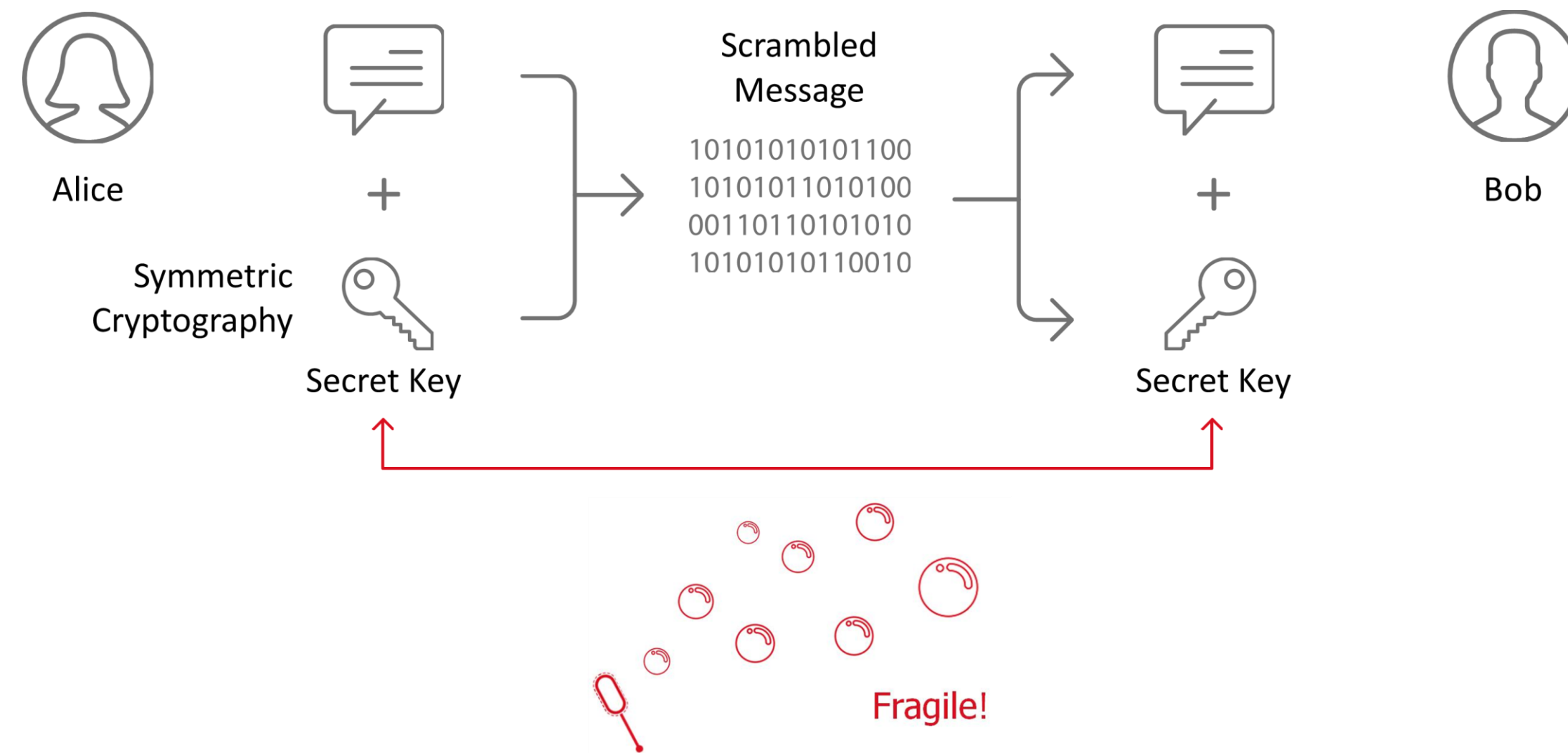
Quantum Key Distribution: Overview

- Current generation

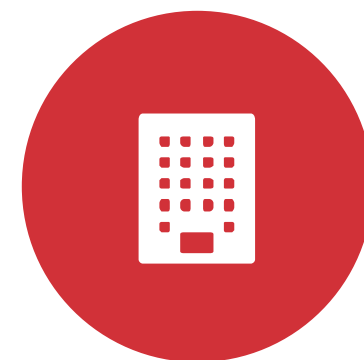
Cerberis 3



Clavis3 R&D Platform



Applications



Banking



Datacentre
Telco/MSP



Government &
Defence



Critical
Infrastructure



SPEED, STABILITY, SECURITY

