



Expert Insights on unleashing the potential of Quantum Technologies: Advantages, Challenges, and Future Prospects

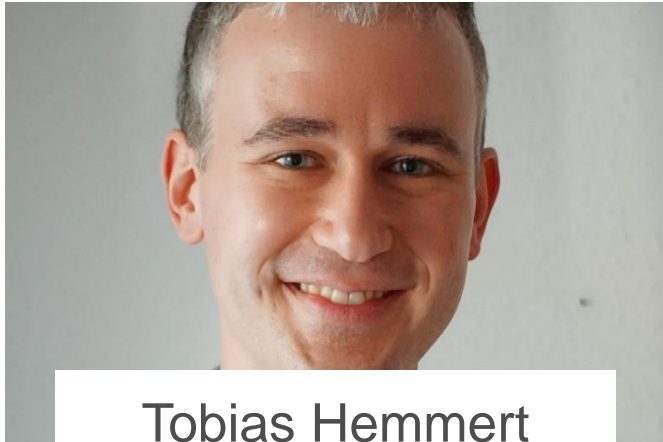
Moderator: Stella Strataki from DG DEFIS

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21 June 2023

Le Bourget

Panellists – Who is Who ?



Tobias Hemmert

German Federal
Office for Information
Security (BSI)



Isidoros Monogioudis

European Defence
Agency (EDA)



Paolo Villoresi

University of Padova

Points for discussion

1. Definitions – Intro
 - Quantum Key Distribution QKD / Post Quantum Cryptography PQC
2. What are the main advantages and shortcomings of each one? What challenges do these technologies encounter?
3. What is the potential of quantum technologies? What are/could be the real-world use cases/services considering also the dual use? Identify the demands the military setting brings to quantum communication.
4. What is the current technology maturity in EU and outside EU ? What can be achieved so far and in the next 5-10-15 years?
5. Where do we stand wrt the security requirements and standardisation?
 - In the current standardisation landscape are there gaps in the area of QKD (both space and terrestrial from manufacturing to operational phase)?
6. How could EU be in the frontline? How could Commission contribute and support this endeavour ?
7. Line to take (short personal conclusions/summary)

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Thank you



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Quantum Technologies and Start-ups/SMEs: Exploring Products/Services, Challenges, and Future Applications

Moderator: Stella Strataki from DG DEFIS

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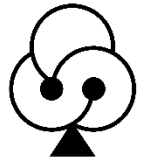
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Panellists Who is Who ?

Carlos Abellan

Co-founder and CEO



QUSIDE



Simone Capeleto

Co-founder and CEO

ThinkQUANTUM

Jean-François Morizur

Co-founder and CEO

cailabs

SHAPING THE LIGHT



Martin Bohmann

Head Business
Development

qtlabs

Quantum Technology Laboratories



Points for discussion (1/7)

1. Companies tour de table – what is the product/service of the company, with a focus on quantum technologies?



Carlos Abellan

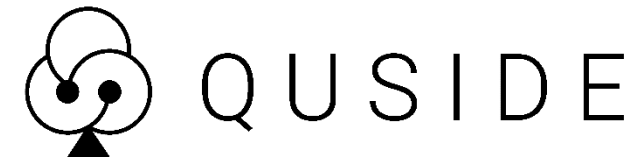


Country : Spain
Founded in 2017

- **ABOUT QUSIDE:**

- Quside is a quantum technology company delivering the most advanced randomness solutions for the cybersecurity and high-performance computing markets. A spin-off from ICFO, a world-leading research centre in photonics and quantum science.
- Quside specializes in the generation, monitoring and processing of randomness. The company has launched several innovative products, including the QN 100, the fastest semiconductor quantum entropy chip, or the RPU, the world's first randomness processing unit.
- As an active member of the European quantum ecosystem, Quside participates in various initiatives, such as the Quantum Industry Consortium (QuIC), quantum flagship, digital Europe program, and several national efforts.

- **Carlos Abellan is cofounder and CEO** at Quside, a quantum technology spin-off from ICFO.
- Carlos got his PhD in quantum technologies at ICFO, where he developed the quantum randomness technologies that were transferred to Quside.
- 10 years of experience in quantum and photonics technologies, co-inventor of multiple patent families and co-author of 15+ papers in top scientific journals.
- Received the award MIT Innovators Under 35 Europe.



Jean-François Morizur

Country : France
Founded in 2012



- **ABOUT Cailabs:**
- Cailabs is a 10-year-old, venture-backed, 75-people deeptech company.
- Leveraging a unique core expertise handling the shape of lasers, Cailabs provides solutions for local networks communication, industrial lasers, and laser satellite communication.
- The company has raised 42 M€ since its inception and has reached profitability on its most mature product lines.
- Before founding Cailabs in 2013, **Jean-François** was Senior Associate at the Boston Consulting Group in their Paris office.
- Jean-François holds two doctorate degrees in quantum optics from the Sorbonne University and the Australian National University and is a graduate of the Ecole Normale Supérieure in Paris.
- He received the Montgolfier Prize in 2022.
- During his thesis at the Kastler Brossel laboratory in Paris, he co-invented Multi-Plane Light Conversion (“MPLC”), the technology behind Cailabs’ products.

cailabs
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Simone Capeleto

Country : Italy
Founded in 2021



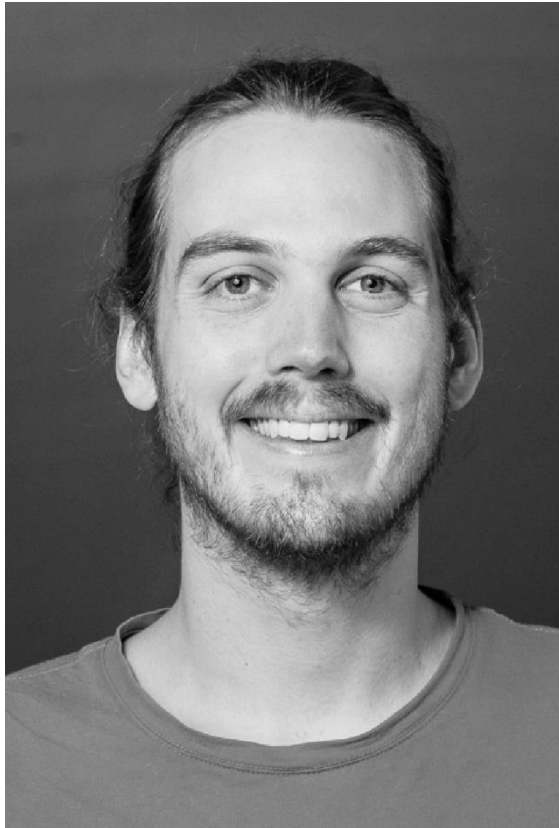
- **ABOUT Thinkquantum**
- ThinkQuantum Srl, spin-off of the University of Padua, offers Optical & Quantum Solutions such as QKD platforms and high-end high-speed QRNG devices for ground telecommunication networks and for the Space domain.
- Based in Italy with an Italian shareholder structure, offers a reliable European supply chain.

- Simone Capeleto is **Co-founder and CEO**
- He is board member of the European Quantum Industry Consortium www.euroquic.org and lead of the Quantum Communication Expert Group.
- Telecommunication Engineer with a PhD in Space Science & Technology

Think**QUANTUM**

Martin Bohmann

Country : Austria
Founded in 2017



- **ABOUT qtlabs**
- Nobel-Prize-winning science -> technology
- More than 20 year of experience in QKD
- 2023: turnover >5Mio.€ & 30 employees
- Deep-tech services: studies & prototyping
- First products available
- Quantum sources for space
- Optical ground stations
- Department Head Business Development and Sales
- Postdoc at
 - IQOQI, Austrian Academy of Sciences
 - National Institute of Optics (CNR-INO), Florence (IT)
- PhD in Theoretical Physics, University of Rostock (DE)
- Field of expertise: Quantum Communication and Quantum Optics
- Publications:
<https://scholar.google.com/citations?user=rErelHcAAAAJ&hl=es>

Points for discussion

1. Companies tour de table – what is the product/service of the company, with a focus on quantum technologies?
2. Why do we need quantum-based technologies? How soon will applications emerge?
3. What are the main use cases for quantum technologies and how do you see the synergies between
 - Quantum / AI
 - Quantum / optical communication
 - Quantum / 5G
 - Quantum / PQC
4. Is it feasible for a small quantum-focused business to thrive in a market dominated by big tech players and numerous competing technologies? It must be a challenging landscape.
5. What is like the quantum start-up ecosystem outside EU? How challenging is it to secure funding for your company?
6. How could EU be in the frontline? How could Commission contribute and support this endeavour ?
7. Line to take (short personal conclusions/summary)

Thank you and Contact Info!



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