

< Q|C|B >

QUANTUM COMPUTING BUSINESS

CONFERENCE 2019

JUNE 20TH
2019

French Q-Startups Pitches



Marc KAPLAN

President

VeriQcloud, France

ORGANIZED BY

bpifrance

Atos

IBM

**QUANTO
NATION**

VeriQloud

Quantum Network Applications and Software



Elham Kashefi
Co-founder



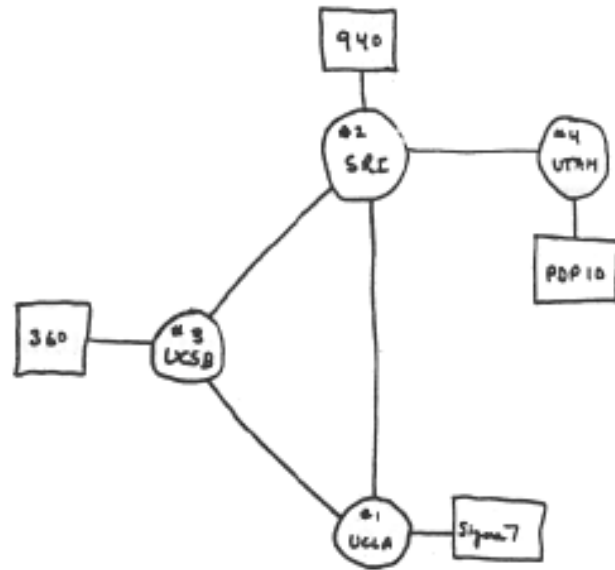
Marc Kaplan
Co-founder
CEO



Joshua Nunn
Co-founder

Bpifrance Quantum Computing Business Conference
20 June 2019

1969



THE ARPA NETWORK

DEC 1969

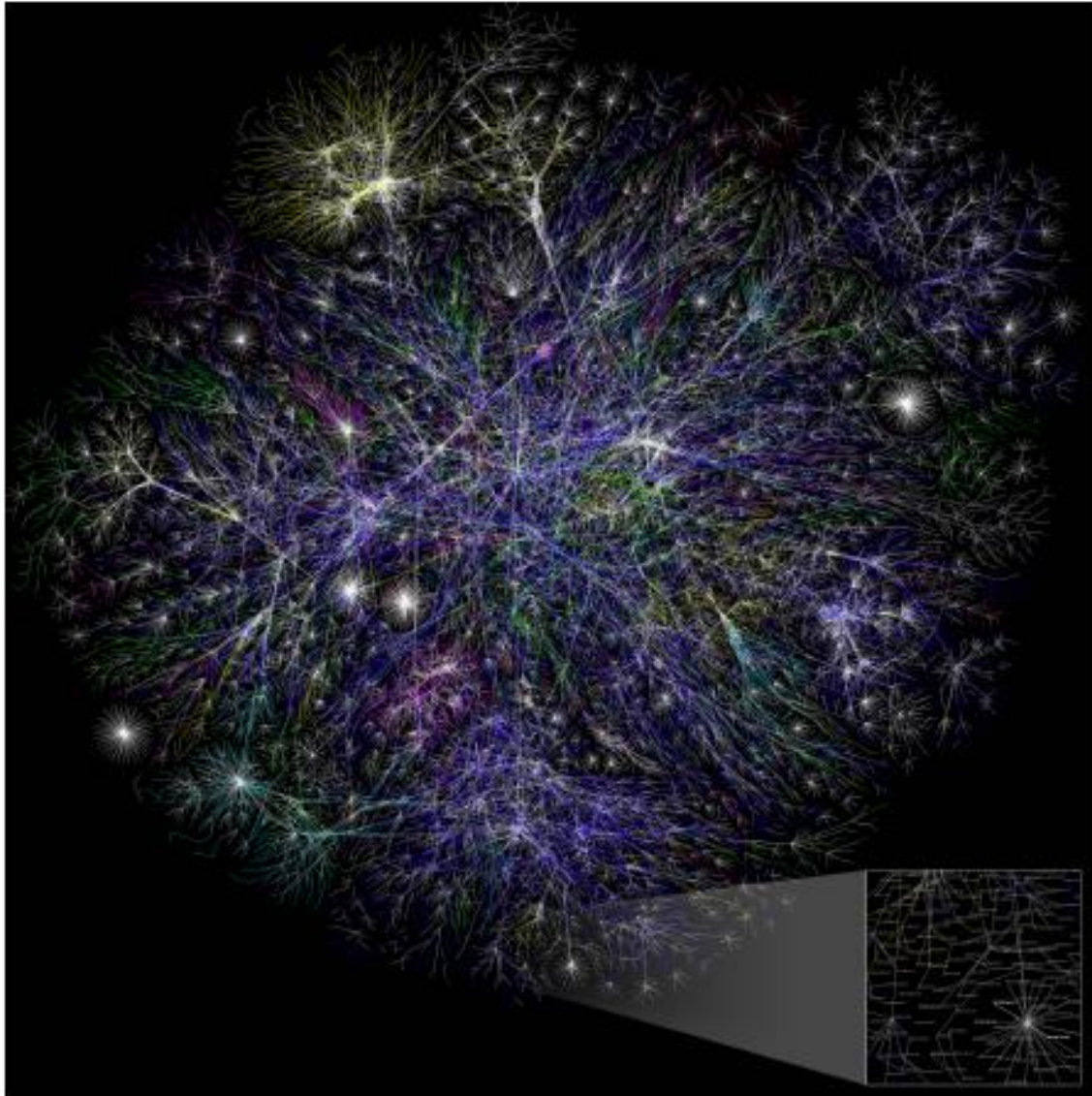
4 NODES

FIGURE 6.2 Drawing of 4 Node Network
(Courtesy of Alex McKenzie)

October 29 : First packet transmission

December : 4-node network

2019



*55% world population
connected to internet*

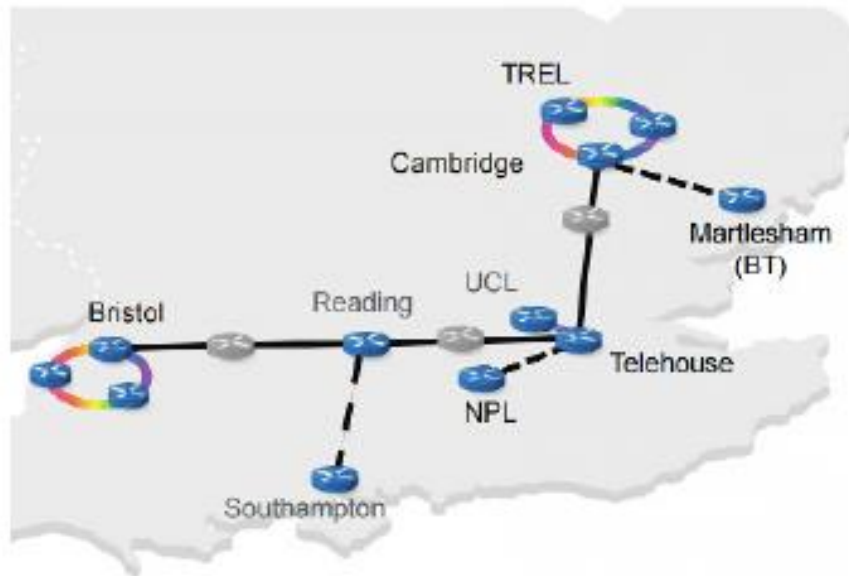
81% of the developed world

269B Emails sent per day

1.6B Websites (since 1991)

2.3M facebook users

Quantum Networks



*UK Hub for
Quantum Communications*



*China
~2000 km
Satellite connection*



Applications and Software for Quantum Internet

VeriQcloud

Quantum Network Applications and Software



- VQ Apps**
- Secure
 - Optimised
 - Real use-cases

Quantum application

Compilation

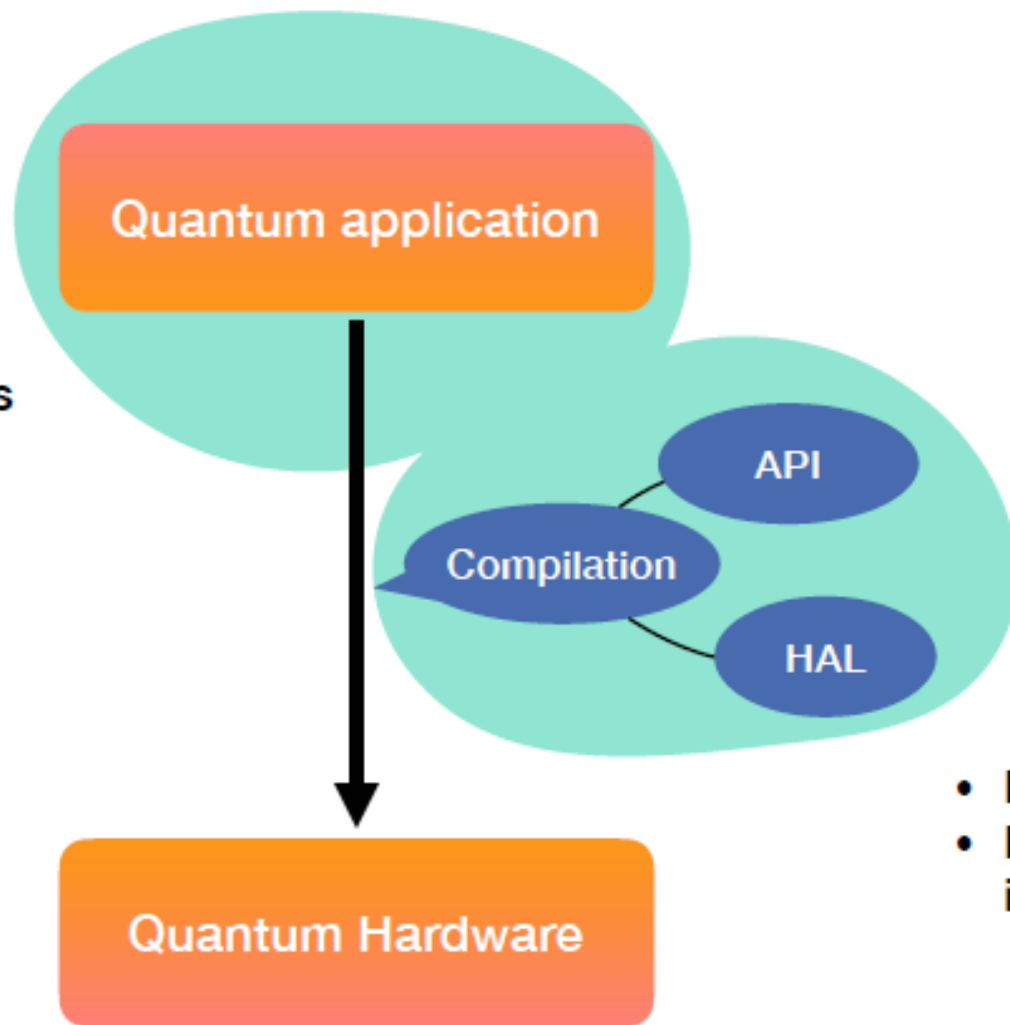
API

HAL

VQ Software

- Fast development
- Hardware independent

Quantum Hardware



Quantum Protocol Zoo



The screenshot shows the main page of the Quantum Protocol Zoo. At the top left is the site logo, a sunflower in brackets. A search bar at the top right contains the text "Search 57 pages" and a magnifying glass icon. The user name "Marc" is visible in the top right corner. The main heading is "Main Page" with sub-links for "Main page", "Discussion", and "☆". Action links "View", "Edit", and "History" are on the right. The main content area contains a welcome message: "Welcome to The Quantum Protocol Zoo - Explore, Learn, Code and Deploy Quantum Protocols". Below this is a paragraph: "The quantum protocol zoo is an open repository of protocols for quantum networks. It provides a compact and canonical way to explore such protocols. Moreover, it allows for easy communication among computer scientists, engineers, and physicists on a single platform." A bulleted list follows: "About us", "Disclaimer", and "Copyrights". A "Contents" section is shown with a "hide" link, listing: "1 Getting started", "2 The goal", "3 Wonder what's the format for contribution?", "3.1 Functionality Page", and "3.2 Protocol Page". A "Getting started" section with an "edit" link is at the bottom. The left sidebar has "Navigation" (Main page, News, Protocol Library, How to Submit, Categories, Supplementary Information, Recent Changes, Contact us, Help) and "Wiki tools" (Upload file, Special pages). The right sidebar has "Page tools" (Delete, Move, Change protection) and "More" (What links here, Related changes, Printable version, Permanent link, Page information, Page logs).

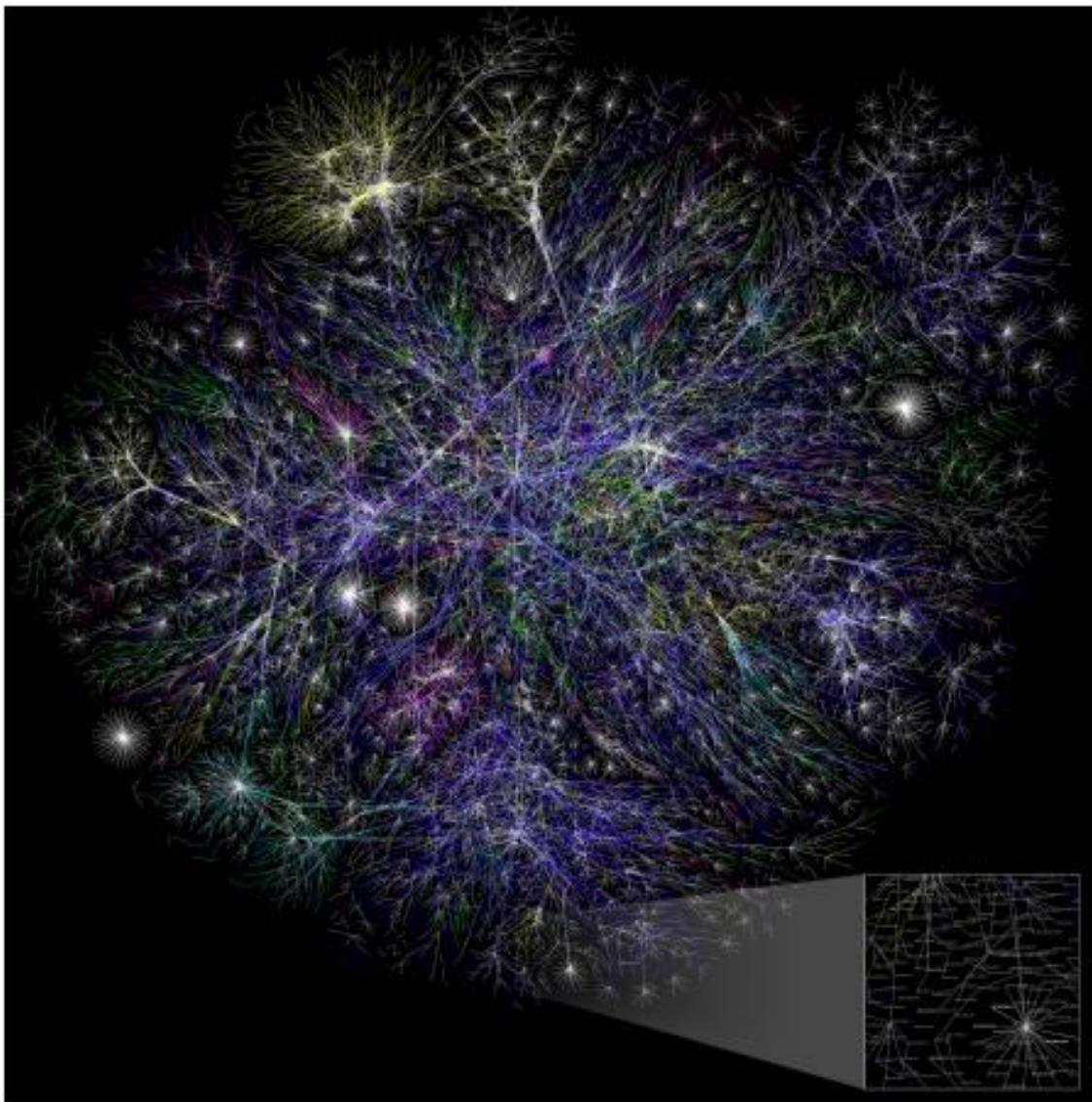
Collect

Simulate

Analyse

wiki.veriqloud.com

End-to-end QKD

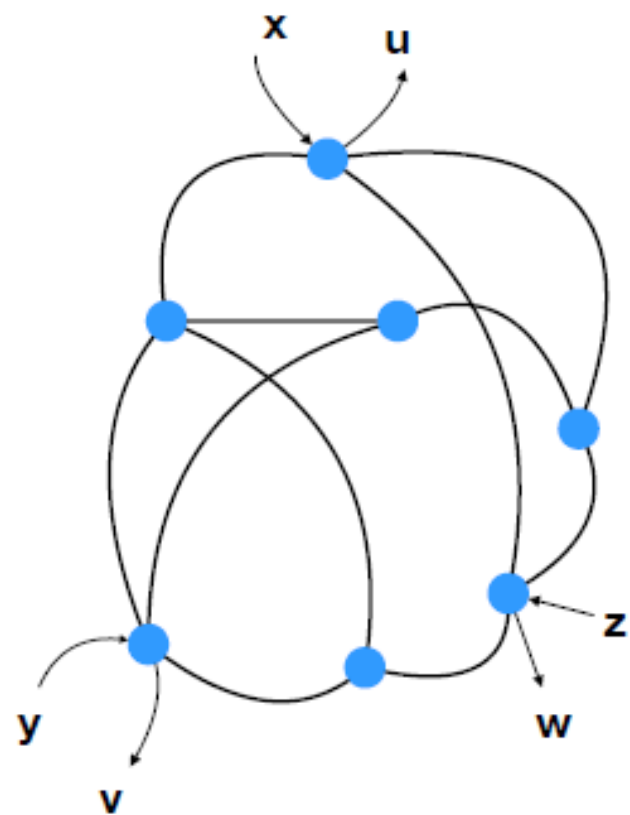


Single Photon Operations

Repeaters

VQ Apps and Software :
*Identity and key
management*

Secure distributed computing



Single Photon Operations

*Quantum Memories,
Entanglement*

VQ Apps and Software :
*multiparty computing,
Byzantine fault tolerance*

Quantum Cloud Computing

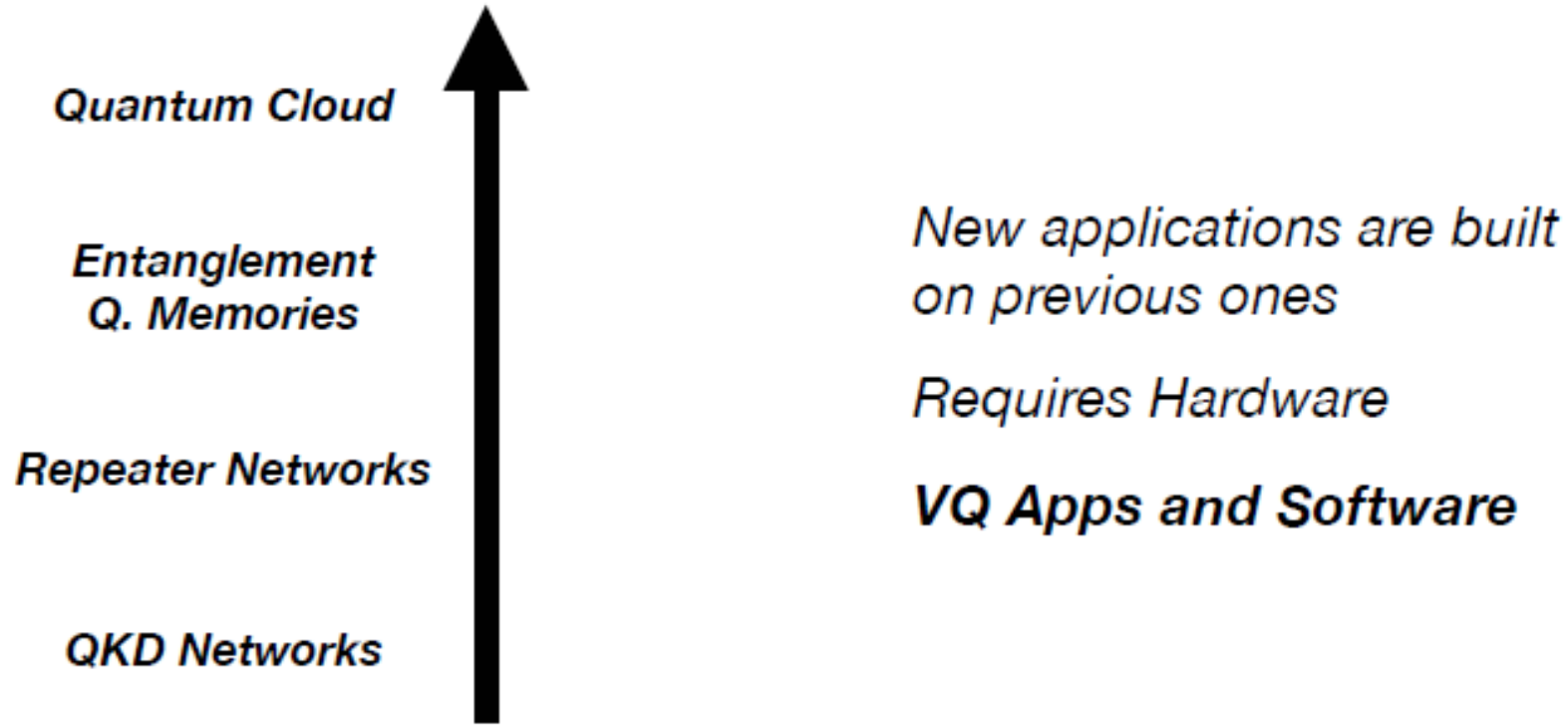


Single Photon Operations

Quantum Computers

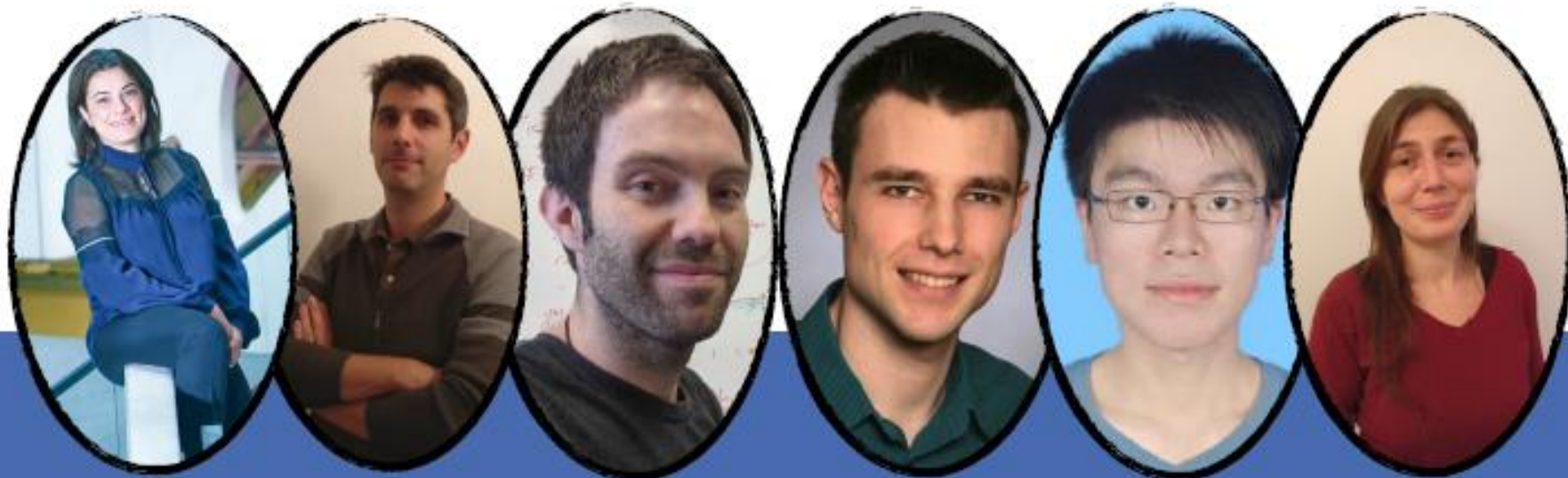
VQ Apps and Software :
Delegation, Verification

Stages of quantum networks



VeriQloud

Quantum Network Applications and Protocols



The Founders

The Qlouders