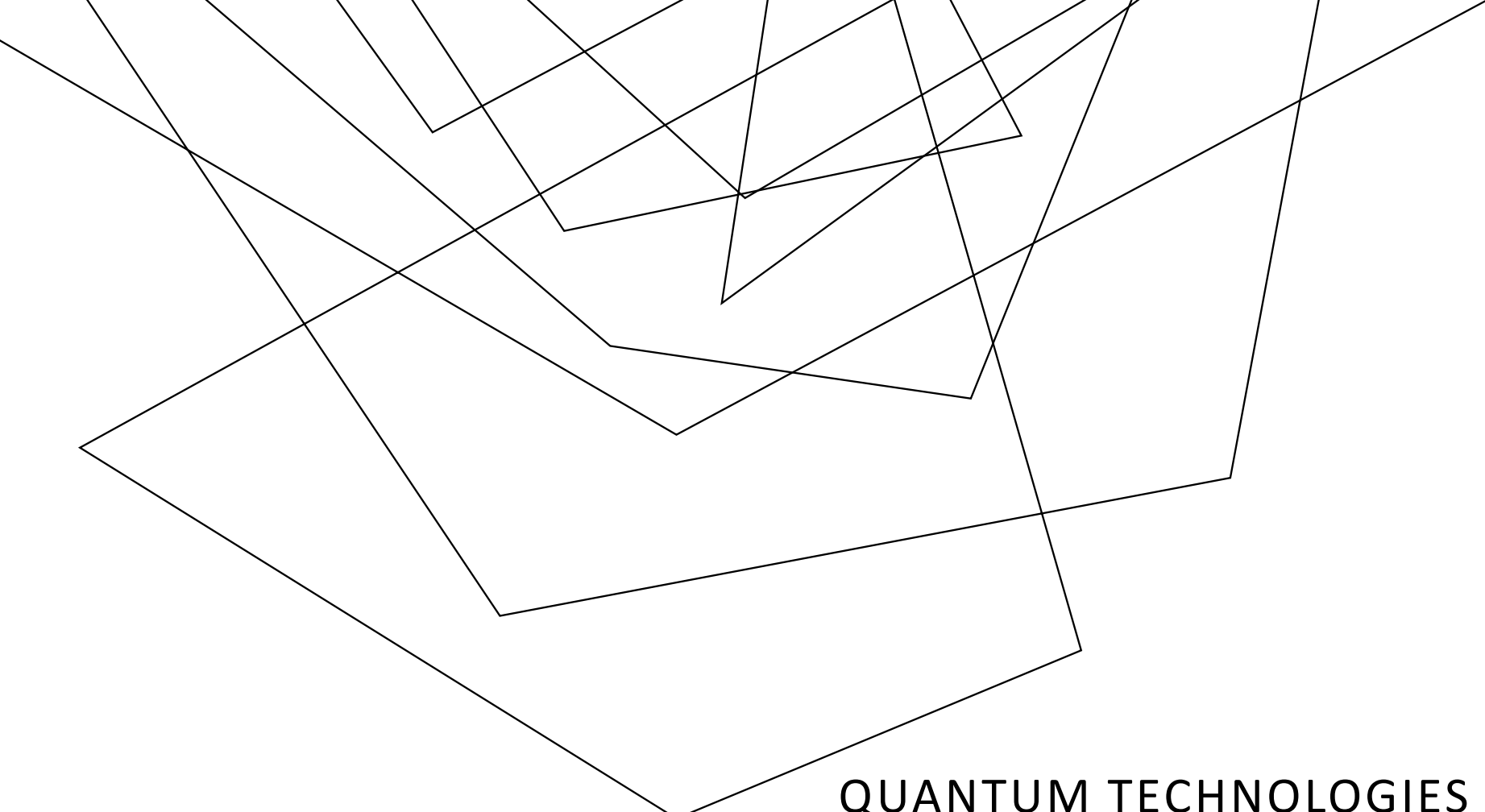




QUANTUM TECHNOLOGIES FOR CYBER SECURITY: THE VENETO INITIATIVE WITHIN THE EUROQCI PROGRAM

VENETO DIGITAL AGENDA
BRUXELLES, APRIL 9TH 2024



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

VENETO REGION STRATEGIC ROADMAP

Quantum Communications, quantum technologies for cyber security, have been identified as **strategic technology trend** by the Veneto Region

A project for the deployment of Regional Quantum Communication Infrastructure has been defined

the ***VenQCI Project***

PROJECT PARTNERS

Veneto Region Agenda Digitale

University of Padua

- QuTech Center [Quantum Technologies Center]
- Vsix [Neutral Access Point for the Italy North-East]

CAV, Concessioni Autostradali Venete, active on Innovation Initiatives in the field of Transport & Digital Transformation.

Project coordination and execution: CAV

Technology Partner: ThinkQUANTUM



VEN QCI GOAL: A QUANTUM NETWORK

Deploy a Regional Quantum Network:

- **Cross-partner**
- Permanent & Operating: **“in production”**
- **Multi-nodes (5+)**
- Ready to **grow**
- Actual/Real **use cases**

USE CASES

METODOLOGY: from needs to technology

What are key data exchanged btw Partners to be secured?

<i>Partner cooperation</i>	<i>Today Use Cases</i>	<i>Bandwith</i>
Regione Veneto - CAV (Marghera)	Mobility Hub	1-10Gbs
Regione Veneto - Unipd/Vsix	Disaster Recovery & Business Continuity	20 Gb
Regione Veneto – Unipd	Authentication & Integrity (i.e. VPN, VideoCall, Research projects)	1Gbs
CAV - Unipd/Vsix	CAV Cloud Services @ Vsix	10Gbs
CAV (Venice) - CAV (Padova)	Dynamic Back-up / load balance / Metro Cluster	100Gbs
CAV – Unipd	Authentication & Integrity (i.e. VPN, VideoCall, Research projects)	1Gbs
...	... and more	

VENQCI GOAL: GOVERNANCE

Design Governance Scenarios covering all diverse aspects including:

- Identification of fix vs variable, one-time vs recurrent **costs**
- **Service models** and related **kpi**
- **Business model** including partners contributions (consumption, flat/no-frills, etc.)
- Overall governance including **management entity, legal and security** aspects

VENQCI: READY TO GROW

The **Extension** of the network to further partners form diverse categories:

- **Institutional**
- **Academic**
- **Industrial**

The **Connection** to the Italian and European Quantum initiatives (i.e. euroQCI)

ONCE UPON A TIME...

...early 2000

...the first demonstration of single photon (to-be Qubit) exchange with a satellite: opening the way of Space quantum Communication

THANKS
VENQCI