

CroQCI PROJECT

Overview

EuroQCI

- EuroQCI will be a secure quantum communication infrastructure spanning the whole EU
- first implementing phase of the EuroQCI is supported by the Commission's Digital Europe Programme
- one of the focus areas of the first phase are national projects
- Croatia's national project is CroQCI



WHAT IS CroQCI?

PROJECT INFO

CroQCI

Full name: Croatian Quantum
Communication Infrastructure

Programme

Digital Europe Programme

Call

DIGITAL-2021-QCI-01-
DEPLOY-NATIONAL

Type of action

Simple Grant

Budget

9.999.334,04 €

Duration

30 months
(1.1.2023.-30.6.2025.)

9 PARTNERS

Coordinator

Croatian Academic and Research Network –
CARNET

Beneficiaries

- Ruđer Bošković Institute (IRB)
- Marine Electronic Center Ltd (PCE)
- University of Zagreb University Computing Centre (SRCE)
- Institute of Physics (IFZ)
- University of Zagreb, Faculty of Electrical Engineering and Computing
- University of Zagreb Faculty of Transport and Traffic Sciences (FPZ)
- Transmitters and Communications Ltd (OIV)
- Office of the National Security Council (UVNS)

KEYWORDS

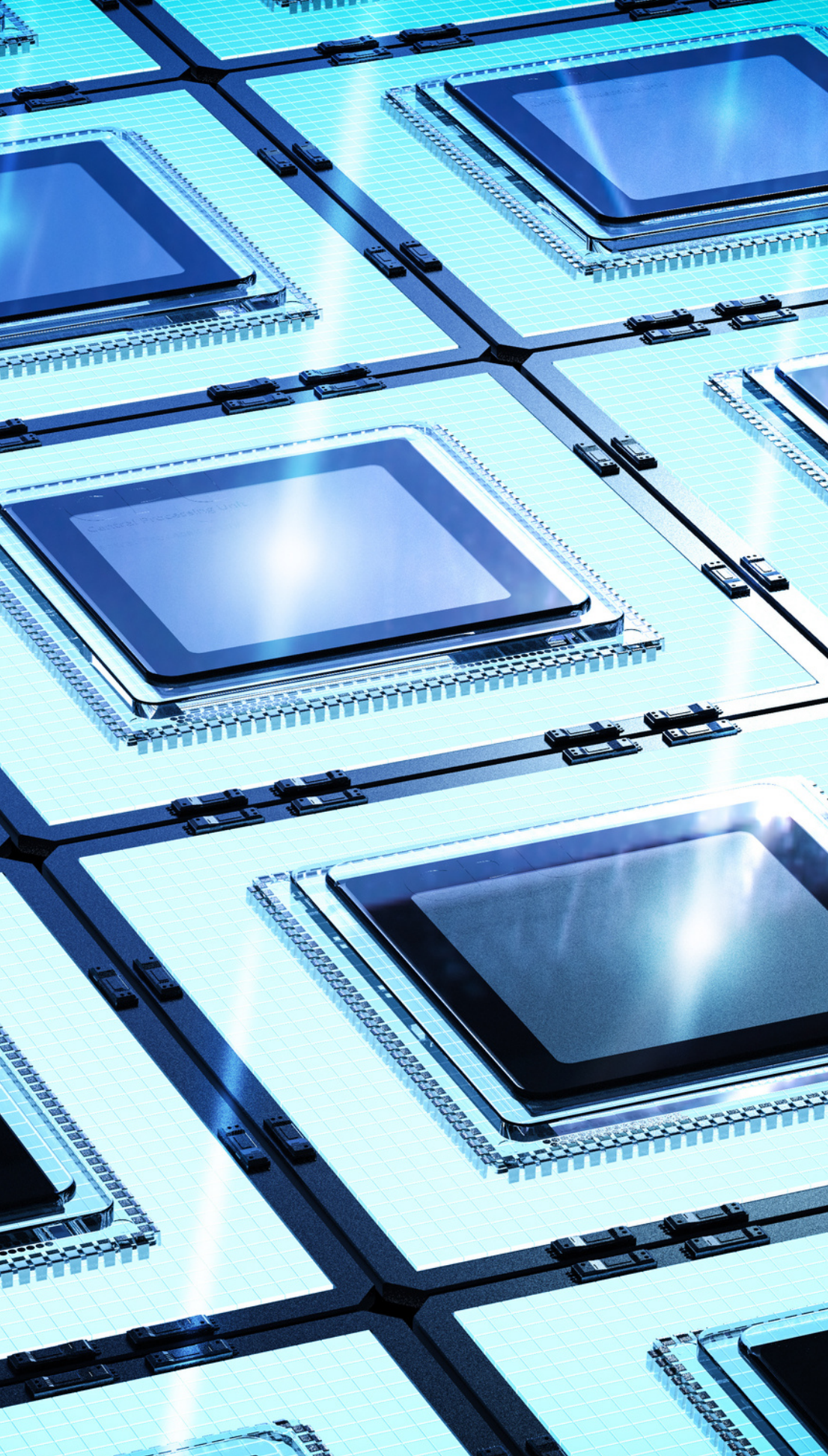
quantum
communication

secure
communication

quantum
cryptography

quantum
key distribution (QKD)

**What are
the project's
objectives?**



OBJECTIVES

01

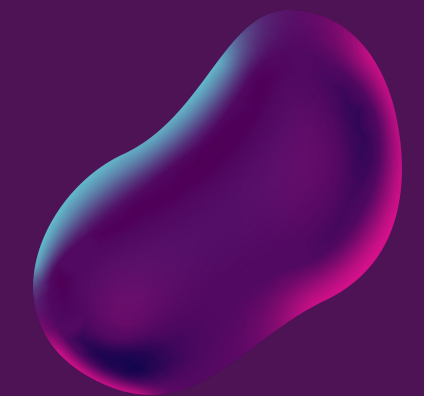
Setting and piloting deployment of advanced experimental quantum systems and communication networks, complemented and integrated with the range of classical security technologies.

02

Building and testing devices and systems combining the best of quantum, post-quantum classical and quantum-enhanced solutions.

03

QCI network architecture design.



OBJECTIVES

O4

Composing terrestrial-based solutions while assuring fulfillment of the preconditions for its space component.

O5

Education component that will comply with the maturity of the technology, current and future needs.

O6

Testing of project use-cases

WORK PACKAGES

WP1 - Building blocks for quantum communication

WP2 - Network architecture

WP3 - Terrestrial fiber infrastructure

WP4 - Space connectivity

WP5 - Key management and application use-cases

WP6 - Education

WP7 - Communication and dissemination

These are the deliverables

WP1 Building blocks for quantum communication

- Demonstration of entanglement based QKD in CroQCI network
- Report on the performances and readiness of experimental systems for atomic clock synchronization and quantum memory for use in CroQCI network

WP2 Network architecture

- QCI architecture proposal & network design
- Simulation, deployment & validation, implementation & management

WP3 Terrestrial fiber infrastructure

- Report on Established terrestrial optical communication infrastructure
- Report on established collocation spaces

WP4 Space connectivity

- OGT Location defined and its main component
- Build OGT prototype CroQCI network

WP5 Key management and application use-cases

- KMS report
- Use cases report

WP6 Education

- Report on CroQCI VLE
- CroQCI education and training plan

WP7 Communication and dissemination

- CroQCI Communication, Dissemination and Exploitation Activity Plan
- Number of project IPV events and supporting actions

WP8 Project management

- Continuous reporting
- Periodic Report
- Gap analysis and roadmap for alignment with the security baseline
- Report on participation to the EuroQCI initiative and on the collaboration with other DIGITAL projects

Use cases

- #1 Enhancing distributed storage security
- #2 Atomic clocks synchronization
- #3 Space QKD segment
- #4 Vulnerability reports delivery



Thank you.