



CELTIC-NEXT

Proposers Brokerage Day

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CRITRUST

Crypto-Agile and Quantum-Safe Trust for Critical Infrastructures



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CRITRUST in One Minute

THE GAP

Critical infrastructures cannot migrate safely to post-quantum cryptography until they know where cryptography is used, what depends on it, and which devices can support the change.

THE CRITRUST ANSWER

Discover cryptography from source code, passive traffic, system records and hardware evidence; fuse the findings into an evidence-backed Operational CBOM; assess device-level PQC readiness; and validate crypto-agile operation across terrestrial 5G and satellite/NTN paths.

WHY JOIN?

Shape the solution, validate it in representative infrastructure, and create new services for KRITIS, CER, NIS2 and CRA-driven security transformation.



Cyber Quanta is a cybersecurity SME based at Teknopark Istanbul, focused on post-quantum cryptography, crypto-agility and secure IoT/OT.

CORE EXPERTISE

- *Multi-source cryptographic discovery and Cryptographic Bill of Materials (CBOM)*
- *Hybrid classical/PQC security and migration planning*
- *Embedded trust, PKI/KMS/HSM and device identity*
- *Critical-infrastructure and communications security*

ROLE IN CRITRUST

Project initiator and proposed coordinator; discovery, evidence fusion, Operational CBOM, PQC readiness and migration intelligence.

Project Concept — From Unknown Cryptography to Safe Migration

1 DISCOVER

Source code and firmware where available; passive traffic; system/configuration records; hardware capabilities

2 FUSE

Normalise and correlate partial or conflicting evidence while retaining provenance, time and confidence

3 MAP

Generate an Operational CBOM and cryptographic dependency graph across different IP layers

4 ASSESS

Identify quantum-vulnerable mechanisms and create PQC Device Readiness Profiles

5 VALIDATE

Test migration options, PQC overhead and resilient terrestrial/NTN communication alternatives



Passive-first: no routine payload decryption. Blind spots and uncertainty remain explicit.

Expected Results, Impact and Indicative Schedule

EXPECTED RESULTS

- Multi-source crypto discovery and evidence-fusion engine
- Evidence-backed Operational CBOM and dependency graph
- PQC Device Readiness Profiles
- TN/NTN crypto-agility and resilience test results
- Critical-infrastructure demonstrator and migration guidance

EXPECTED IMPACT

- Visibility of hidden and legacy cryptography
- Lower migration and service-continuity risk
- Technical evidence supporting KRITIS, CER, NIS2 and CRA obligations
- Product and service opportunities for operators, integrators and cybersecurity SMEs

INDICATIVE 36-MONTH PATH

M1–M9 Requirements & discovery | M7–M18 Fusion, CBOM & readiness | M16–M30 TN/NTN validation | M27–M36 Pilots & exploitation

Preliminary Consortium and Partners Sought

CURRENT / UNDER DISCUSSION

- **Cyber Quanta, Türkiye** — Project initiator; multi-source crypto discovery, evidence fusion, Operational CBOM and PQC readiness.
- **TU Dortmund University, Germany** — 6G security, privacy and resilient communications research.
- **Sateliot, Spain** — Interested prospective partner; satellite-based 5G NB-IoT/NTN connectivity, network access and use-case validation.
- **Fraunhofer IIS, Germany** — Potential partner; 5G/6G RAN and NTN test and simulation capabilities.
- **GTU SIR Labs, Türkiye** — Prospective partner; communication-dependency modelling and resilience simulation.
- **EDNEO AG, Germany** — Prospective partner; OT/IT integration and use-case development.

PARTNERS SOUGHT

- **5G/6G Core Network Security Partner** — Expertise in 3GPP SA2/SA3, 5G Core security architecture and security protocols.
- **KRITIS Operator** — Rail, energy, water, telecommunications, ports or airports.
- **Mobile or Private 5G Provider**
- **Industrial Device or System-on-Module Manufacturer**
- **Cybersecurity, PQC and OT/IoT SMEs**
- **Research Centres with Relevant Test and Simulation Infrastructure**

INTERESTED IN SHAPING THE CRITRUST CONSORTIUM?

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WE WELCOME PARTNERS WITH

- Critical-infrastructure use cases
- 5G Core and SA2/SA3 security expertise
- TN/NTN test or operational infrastructure
- Industrial devices for PQC benchmarking



LET'S CONNECT

Join the Consortium Building Sessions

NOTE:

CELTIC organizes Consortium Building Sessions to foster the partner search for you. Please indicate your availability within the 28th September – 2nd October via:

<https://polls.eurescom.eu/UiVWT71RPw/>

Login: participant

Pwd: csb-a26

We will update this slide for you according to the provided poll information.

Please fill in the poll with your availabilities indicating
PROPOSAL NAME, your name, your organization

