EQUIP



European QUantum-safe Implementations

for security and Performance

Funded by the European Union

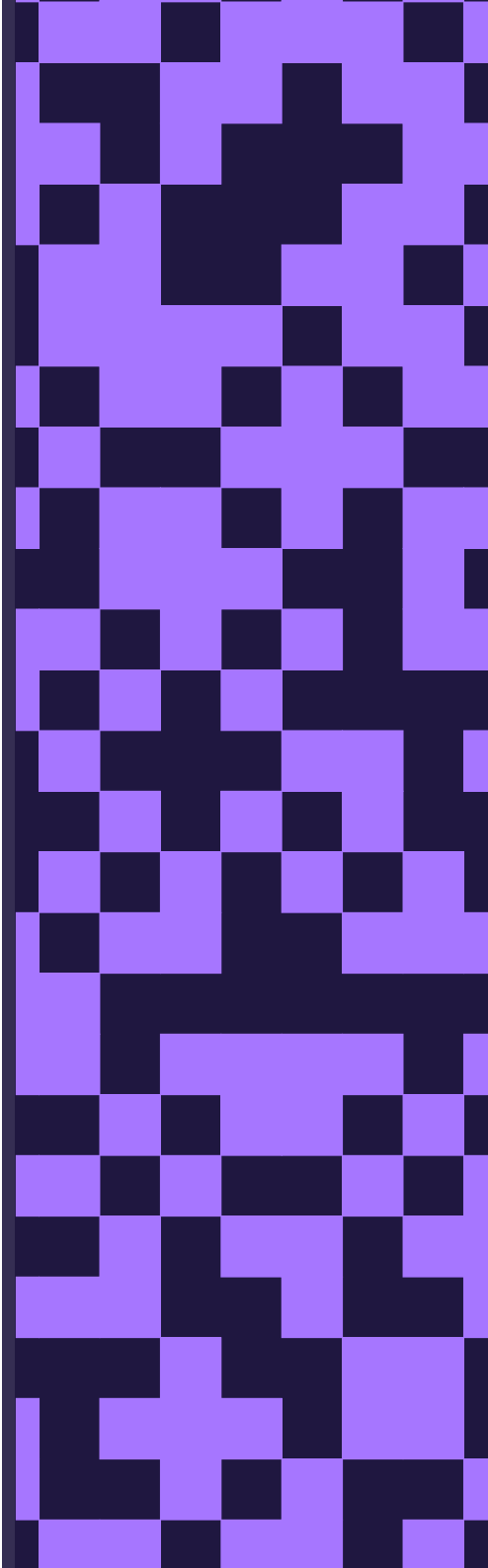
ECCC EUROPEAN CYBERSECURITY COMPETENCE CENTRE

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EQUIP

About

EQUIP (European QUantum-safe Implementations for security and Performance) is a European research initiative addressing one of the most urgent cybersecurity challenges of the coming decade: the secure deployment of post-quantum cryptography (PQC). As quantum computing threatens today's public-key cryptography, Europe must rapidly transition to quantum-safe solutions that are efficient, trustworthy and ready for real-world use. EQUIP brings together leading experts in cryptography, hardware and software engineering, physical attack analysis, certification and regulatory compliance to develop secure and efficient PQC implementations across platforms ranging from embedded devices and IoT systems to cloud infrastructure. By combining innovative countermeasures, rigorous security evaluation and certification-ready methodologies, EQUIP strengthens Europe's readiness for the quantum era.





Vision

EQUIP envisions a future where post-quantum cryptography can be deployed at scale without compromising security, performance or interoperability. As organizations prepare for the transition to a quantum-safe digital ecosystem, the project aims to remove the barriers that currently hinder the adoption of PQC technologies across critical infrastructures, connected devices, industrial systems and cloud services. By advancing secure, efficient and certifiable implementations, EQUIP seeks to establish a trusted foundation for next-generation cybersecurity. The project's long-term vision is to strengthen Europe's technological sovereignty and resilience by enabling widespread deployment of quantum-safe cryptography that is practical, verifiable and ready to meet the evolving demands of a connected digital society.



Motivation

The transition to post-quantum cryptography is no longer a future concern, but an immediate cybersecurity priority. Advances in quantum computing threaten the public-key cryptography that secures today's digital infrastructure, creating risks for governments, businesses and critical services. At the same time, deploying post-quantum cryptography in real-world systems remains a major challenge. Existing solutions often struggle to balance security, performance, implementation cost and regulatory compliance, particularly on embedded and resource-constrained platforms. EQUIP was launched to address these challenges through a holistic approach that combines cryptographic design, secure implementation, attack evaluation, testing and certification. By enabling secure, efficient and deployable quantum-safe solutions, EQUIP helps prepare Europe's digital infrastructure for the post-quantum era.



Mission & Objectives

EQUIP's mission is to accelerate Europe's transition to post-quantum cryptography by making quantum-safe solutions secure, efficient and ready for deployment across real-world digital infrastructures. The project brings together expertise from cryptography, hardware and software engineering, security evaluation and regulatory compliance to address the full lifecycle of PQC deployment.

EQUIP's key objectives are to:

- Systematize knowledge on secure PQC implementations, attack techniques and protection methods.
- Develop automated testing, evaluation and certification methodologies for PQC.
- Create secure and efficient PQC implementations for embedded, hardware and application-class platforms.
- Design novel countermeasures against side-channel and fault-injection attacks.
- Support standardization, compliance and broad adoption of quantum-safe technologies across Europe.

Partners

The EQUIP consortium brings together six highly qualified academic and industrial partners from five European countries: Austria, Belgium, Finland, France and the Netherlands. It combines three leading universities, two deep-tech SMEs and one industrial partner with complementary expertise in post-quantum cryptography, hardware and software implementation, side-channel and fault-injection resistance, security evaluation, certification and European cybersecurity regulation.



1 TECHNIKON

Technikon Forschungs- und Planungsgesellschaft mbH
Austria [VILLACH]

2 KU LEUVEN

KU Leuven
Belgium [LEUVEN]

3 CRYPTOEXPERTS

CRYPTOEXPERTS SAS
France [PARIS]

4 PQSHIELD

PQShield B.V.
Netherlands [AMSTERDAM]

5 Tampere University

Tampere University
Finland [TAMPERE]

6 TU Graz

TU Graz
Austria [GRAZ]

Facts



Budget

€ 2.9 Million
100% EU Funded



Consortium

6 Partners
5 countries



Duration

36 Months
11/2026 - 10/2029

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Find out more about this Project:
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