

The long term: cryptography and quantum computing

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A longer-term question deserves mention. The security of payments, signatures and crypto and digital assets rests on cryptographic methods, some of which quantum computing could compromise if it reaches sufficient scale. The authorities and standard-setting bodies have begun to publish standards for quantum-resistant cryptography. Financial infrastructures are planning their migration over a decade.¹ Geneva, with the European Organization for Nuclear Research, the University and the universities of applied sciences, hosts expertise in quantum physics and quantum computing that makes the region one of the European hubs in the field.² For the financial centre the question is one of preparation. Institutions whose data must remain confidential for decades, as is the case in private banking, are well advised to follow this work and to plan their migration with their suppliers.

1 Notes

1. National Institute of Standards and Technology, FIPS 203 (ML-KEM), 204 (ML-DSA) and 205 (SLH-DSA), approved on 13 August 2024; NIST, “Post-Quantum Cryptography FIPS Approved”, csrc.nist.gov (accessed September 2026). ↩

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2. CERN, press release of 5 March 2024 (home.cern): launch at CERN of the pilot phase of the Open Quantum Institute, designed and incubated by the Geneva Science and Diplomacy Anticipator (GESDA) with some 180 experts, UBS being the main supporting partner; the three-year pilot (2024-2026) aims to put quantum computing at the service of the sustainable development goals; the institute forms part of the CERN Quantum Technology Initiative launched in 2020 (quantum.cern: quantum computing, sensors and networks). ↩

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