Monetary Authority of Singapore

Consultation Paper
[P019-2026] November 2026

Consultation Paper on Quantum-Safe Migration Guidance and Timelines for the Financial Sector

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1 Preface

1.1 The Monetary Authority of Singapore (MAS) is proposing to introduce a Circular on Financial Sector Quantum-Safe Migration Guidance and Timelines to all financial institutions (FIs) in Singapore. The proposed Circular is not intended to impose legally binding obligations on FIs, but to set out MAS' supervisory expectations for FIs' quantum-safe migration, including indicative milestones and completion timelines.

1.2 MAS invites comments from FIs and interested parties on the proposed Circular.

Please note that all submissions received will be published and attributed to the respective respondent unless they expressly request MAS not to do so. As such, if respondents would like (a) their whole submission or part of it (but not their identity), or (b) their identity along with their whole submission, to be kept confidential, please expressly state so in the submission to MAS. MAS will only publish non-anonymous submissions. In addition, MAS reserves the right not to publish any submission received where MAS considers it not in the public interest to do so, such as where the submission appears to be libellous or offensive.

1.3 Please submit written comments by 23 Nov 2026 via the *FormSG link*.

2 Proposed Circular

2.1 Quantum computing technology is advancing rapidly and poses significant risks to the security of data and communications used by financial institutions (FIs). While there is no internationally agreed date when a cryptographically relevant quantum computer (CRQC) could emerge, there is strong consensus that this could happen within the next few years. A CRQC would be capable of breaking widely deployed public-key cryptographic algorithms such as RSA and ECC, undermining many of the cryptographic protections underpinning today's digital infrastructure.

2.2 This circular builds on MAS' advisory on Addressing the Cybersecurity Risks Associated with Quantum, issued in February 2024, and sets out MAS' expectations for FIs' quantum-safe migration, including indicative milestones and completion timelines. Quantum-safe migration is a complex, multi-year undertaking requiring sustained senior management commitment and resourcing. FIs should commence preparatory efforts early and are also encouraged to refer to CSA's Quantum-Safe Handbook and Quantum Readiness Index[1] for practical guidance on migration planning and implementation. In particular, FIs are expected to undertake the following:

a) **Governance and Accountability**. Ensure quantum-safe migration is supported by board-level and/or senior management commitment, with clear ownership, sufficient resourcing, and regular progress reporting. Quantum-related risks should be integrated into relevant risk management frameworks, policies and procurement processes.

b) **Cryptographic Asset Inventory**. Establish and maintain a comprehensive inventory of cryptographic assets, covering at minimum the algorithms, key lengths and protocols in use, the systems and functions they support, and their associated dependencies. Use the inventory to identify vulnerable assets and prioritise their migration, giving priority to assets that are critical to business operations, internet-facing, or associated with data that has long retention periods.

c) **Migration Plan**. Develop and maintain a risk-based migration plan, approved by board and/or senior management, setting out how and

[1] *https://www.csa.gov.sg/resources/publications/quantum-safe-handbook-and-quantum-readiness-index*

when systems and cryptographic assets will be migrated to quantum-safe solutions. The plan should at minimum cover:

i. an inventory of cryptographic assets[2] and migration approach prioritised by risk;

ii. incorporation of quantum risks into the enterprise risk management frameworks and procurement policies, including requirements for new systems procured to either support quantum-safe algorithms or be capable of being upgraded to do so within the applicable indicative migration timeframe;

iii. interim risk mitigation controls for assets that cannot yet be migrated;

iv. capability gaps, training needs and identified challenges; and

v. vendor engagements to align third-party migration roadmaps with the FI's timelines.

d) **Implementation**. Assess the technical and operational implications of implementing quantum-safe solutions and test proposed solutions prior to deployment as migration to quantum-safe solutions may entail a major system change. Testing should cover performance and interoperability impacts[3] to ensure quantum-safe solutions can be deployed without disrupting operations. FIs should adopt a phased migration approach, maintaining security, resilience and operational continuity throughout migration. Identify systems that cannot be readily migrated, implement appropriate interim compensating controls, and document the controls applied and justification for deferral.

e) **Progress Tracking**. Establish interim checkpoints and quantitative targets to track transition progress and adjust plans as the threat landscape and cryptographic standards evolve. Monitor vulnerabilities in deployed quantum-safe solutions and respond promptly where remediation is required.

[2] Cryptographic assets include cryptographic modules, systems, and applications such as public key infrastructure (PKI) systems, hardware security modules (HSMs), cryptographic libraries, and virtual private networks (VPNs).
[3] FIs should assess whether existing hardware and software infrastructure has sufficient capacity to support the increased computational overhead, key sizes and storage requirements of quantum-safe algorithms.

Question 1: MAS seeks comments on the proposed supervisory expectations on quantum-safe migration, and whether there are any other expectations that should be included.

Migration Timelines for All FIs

2.3 FIs should aim for the following indicative timelines for their quantum-safe migration. Where technical or operational impediments exist, FIs should document the reasons for deviation and implement appropriate interim controls.

a) **By 31 December 2027** – Develop a quantum-safe migration plan in accordance with the requirements set out in paragraph 2(c) above. FIs designated as Critical Information Infrastructure Owners (CIIOs) or Domestic Systemically Important Banks (DSIBs), and NETS should refer to paragraph 2.4.

b) **By 31 December 2030** – Complete the migration of critical systems[4] to quantum-safe solutions.

c) **By 31 December 2034** – Complete the migration of all remaining systems to quantum-safe solutions.

Expectations for CIIOs, DSIBs and NETS

2.4 For CIIOs, DSIBs and NETS, the following additional expectations will apply:

a) **By 30 June 2027** – Submit a quantum-safe migration plan to MAS in accordance with the requirements set out in paragraph 2(c) above.

b) **By 31 December 2029** – CIIOs should complete the migration of CII systems to quantum-safe solutions.

2.5 The above timelines may be revised as the quantum threat landscape, cryptographic standards and regulatory expectations evolve. MAS will communicate any updates as appropriate.

[4] "Critical system" in relation to a specified FI, means a system, the failure of which will cause significant disruption to the operations of the specified FI or materially impact the specified FI's service to its customers, such as a system which (a) processes transactions that are time critical; or (b) provides essential services to customers.

2.6 This circular should be read as supplementary information to the MAS notices and guidelines[5]

> Question 2: MAS seeks comments on the proposed timelines for FIs to develop their quantum-safe migration plans and complete the migration of their systems to quantum-safe solutions.

3 List of Questions

S/N	Question	Relevant Paragraph
1	MAS seeks comments on the proposed supervisory expectations on quantum-safe migration, and whether there are any other expectations that should be included.	2.2
2	MAS seeks comments on the proposed timelines for FIs to develop their quantum-safe migration plans and complete the migration of their systems to quantum-safe solutions.	2.3 and 2.4
3	MAS seeks comments on any other aspects of the draft circular, including any areas that should be clarified, amended or supplemented.	-

[5] The MAS notices and guidelines include the Notice on Technology Risk Management (TRM), Notice on Cyber Hygiene, TRM Guidelines, and Outsourcing Guidelines.