

BUILDING TRUST IN DIGITAL FUTURE - PKI IN MALAYSIA -

6 November 2025



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PKI Consortium: Malaysia successfully hosted PQC Conference in Kuala Lumpur

POS Digicert



PQC Conference | 28 - 30 October, 2025 | Kuala Lumpur, Malaysia & Online | pkic.org/register (free)



- **Malaysia moves from awareness to action:** launching concrete frameworks like the national PQC roadmap and readiness plan.
- **Workshops drive capability:** focusing on crypto agility, asset inventory, and hybrid PQC migration crucial for CA/PKI players like Pos Digicert.
- **Strong local participation:** with Pos Digicert and others showing an active, growing PQC ecosystem in Malaysia.
- **Government commitment:** the Ministry of Digital outlined Malaysia's roadmap toward a quantum-secure ASEAN.
- **National readiness plan unveiled:** NACSA (Malaysia's National Cyber Security Agency) presented Malaysia's strategy for PQC adoption and implementation.

PQC: Awareness & Strategic Realisation

1. Global progress on Post-Quantum Cryptography (PQC) highlighted the need for Malaysia to prepare for quantum threats. Therefore agencies like **NACSA** and **CyberSecurity Malaysia** began early awareness programs on crypto-agility and quantum-safe transitions.
2. **Government support:** Highlighted in the Malaysia's Budget 2026, the National Cyber Security Agency (NACSA) has established the Cyber Security and Cryptology Development Centre to strengthen national digital sovereignty and cybersecurity.

This marks the first formal inclusion of cryptology in a national budget speech - a strategic milestone signaling Malaysia's commitment to cryptographic modernization and PQC migration.



In Malaysia's Budget 2026:

- Peruntukan untuk *Cyber Security Malaysia* termasuk membangunkan perkhidmatan keselamatan kriptografi antaranya: **RM30j**
 - a) Pemerkasaan Keselamatan Dalam Automasi Pemprosesan Digital
 - b) Pembangunan Perkhidmatan Keselamatan Kriptografi Era Kuantum

- a) *Strengthening Security in Digital Processing Automation*
- b) *Development of Cryptographic Security Services for the Quantum Era*

PQC: National Level Proof of Concept (POC)

POC Background

1. Under NACSA, supported by Universiti Putra Malaysia (UPM) and Pusat Teknologi dan Pengurusan Kriptografi Malaysia (PTPKM), conducted sandbox/ initiative under Malaysia's National PQC Migration Plan.
2. Over 30 companies participated.

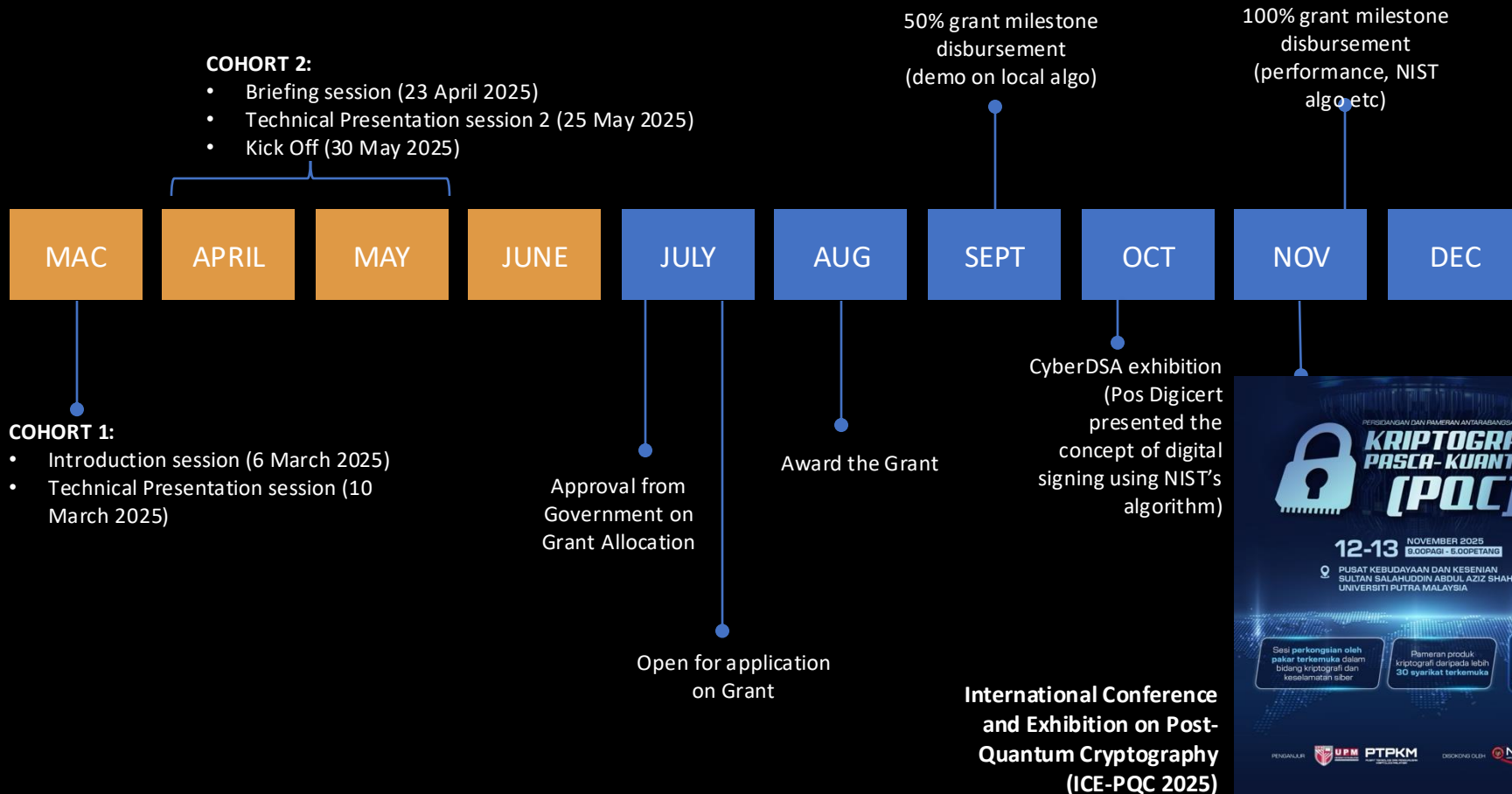
Purposes/Objectives

1. Identify and assess the quantum threat and its impact on the current cryptographic infrastructure (e.g., "*harvest now, decrypt later*" scenario)
2. Develop readiness and crypto-agility so that when PQC standards are finalised, migration is smooth and risk-managed.
3. To Test: Both NIST's algorithms & local developed algo (KAZ-Sign)

Why it matters

1. For CAs, PQC migration is a strategic issue (PKI, digital signatures, certificate lifecycle) will need to be quantum-safe in the future.
2. The POC gives a controlled environment to test how PQC algorithms integrate into: PKI issuance, key lifecycle management, HSM integration, vendor systems, crypto-agility.
3. To prove: The POC is not purely academic.

PQC: POC Timeline



ePrescription Initiatives in Malaysia



Malaysian government's support for digital health initiatives

- a) Adoption of electronic medical records
- b) Adoption of ePrescriptions



Amendments to Poisons Act 1952

- a) Acceptance of digital signatures
- b) Provides legal framework for ePrescriptions



Malaysian Pharmacists Society (MPS) initiatives

- a) Launched Electronic Prescription Exchange System (EPES) in July 2025 (leveraging PKI)



Hospital implementations

- Sunway Group Hospital
- Pantai Group Hospital
- Columbia Group Hospitals



Key stakeholders

- a) Doctors and pharmacists - Utilize digital certificates for digital signing



Transforming Healthcare through Digitalisation

Phase 1: Foundation (2023-2025)

- Establish national health IT infrastructure
- Implement electronic medical records (EMR) in hospitals
- Launch ePrescription system (EPES)
- Develop digital certificate framework for healthcare

Phase 3: Interoperability (2028-2030)

- Achieve interoperability between health systems
- Establish national health data repository
- Implement data analytics and AI capabilities

Phase 2: Expansion (2025-2028)

- Integrate with other health systems (e.g., lab, imaging)
- Implement telemedicine platforms
- Introduce patient portals for access to health records

Phase 4: Personalized Healthcare (2030+)

- Integrate wearable devices and IoT with health systems
- Enhance patient engagement through mobile apps and services
- Foster research and innovation in digital health

Malaysia's New e-SPA – Electronic Sales and Purchase Agreement



eSPA align with the government's digitalisation agenda.

Kementerian Perumahan dan Kerajaan Tempatan (KPKT) is leveraging PKI in their Housing Integrated Management System (HIMS) project. This initiative aligns with the government's digitalization agenda, enhancing transparency and efficiency.



Secure digital transactions

By integrating PKI, HIMS ensures secure digital transactions, including e-SPA (electronic Sale and Purchase Agreement) and digital signatures, streamlining processes and reducing paperwork.



eSPA improves public service delivery.

This move supports the government's goal of promoting digital governance and improving public service delivery. This initiative demonstrates KPKT's commitment to digital transformation, enhancing the housing sector's efficiency and transparency.



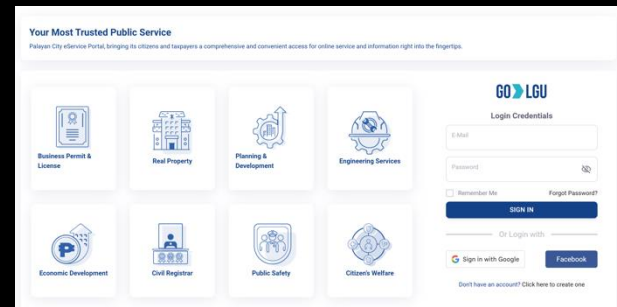
End-to-end process

e-SPA enables buyers and developers to complete transactions efficiently, securely, and compliantly. The e-SPA process typically includes:-

- Digital agreement preparation
- Digital signature and authentication
- eStamping and payment
- Document storage and management

Digital Signing for Local Councils

- Visionary leadership driving the city's transition to digital governance.
- We have implemented **comprehensive Digital Signing Solution Services for public transactions** to one local council at Philippines and a few local councils at Malaysia.
- We have integrated Digital Signing Service such as **Business Permit and Licensing Application, Planning and Development Application, Building Plan Approval request and Engineering Services**
- Setting a **benchmark** for other cities in modernizing e-government platform
- Demonstrating the potential of digital governance



Educating people
on digital security
practices



Developing
transparent
transaction systems



Fostering
community
engagement in
cyber security



Empowering
Citizens through
Digital
Governance



Fostering
innovation and
digital
transformation

PKI in ECM (Enterprise Content Management)

1. ECM (Enterprise Content Management) widely implemented in big organizations in Malaysia, and integrating it with PKI (Public Key Infrastructure) is gaining traction.
2. Organizations are adopting PKI-based ECM solutions to comply with regulatory requirements and protect sensitive data from cyber threats.
3. This integration supports various use cases, such as secure document sharing, electronic approvals, and compliance with digital signature laws.
4. Benefits of combining ECM with PKI include:
 - a) Enhanced Security: Digital certificates ensure secure access and authentication
 - b) Document Authenticity: Digital signatures verify document origin and integrity
 - c) Compliance: Meets regulatory requirements for electronic signatures and data protection



Digital
Archiving



Forms



Workflow



Reminder

Malaysia is represented in the Global Legal Entity Identifier Foundation (GLEIF) through Pos Digicert's membership in the CA Stakeholder Group aligning national PKI efforts with the decentralized digital identity standards such as vLEI (Verifiable Legal Entity Identifier).

Cross-border Trust



Thank You

POS Digicert

Malaysia