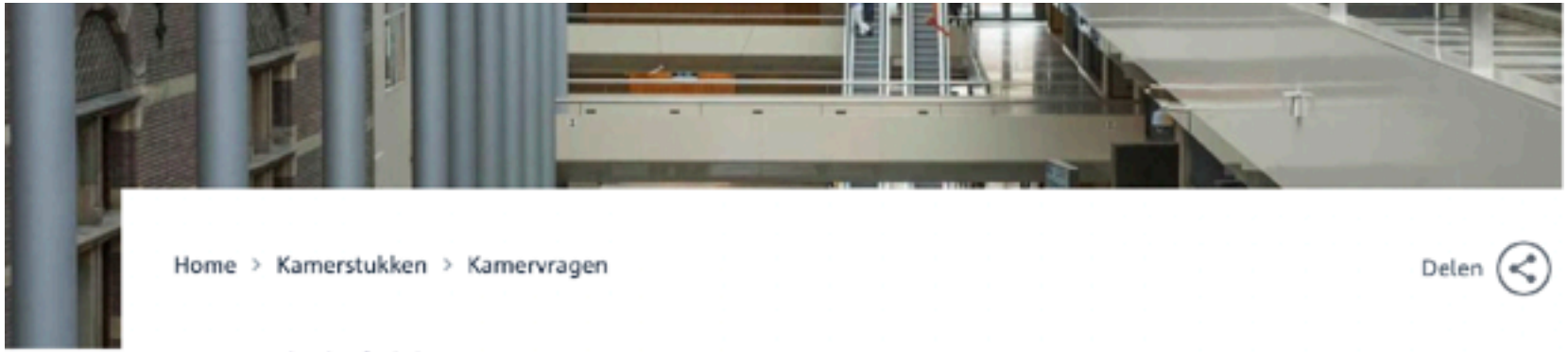
How do you upgrade a government to become post quantum crypto secure?

Oscar Koeroo

CISO Concern van het Ministerie van Volksgezondheid, Welzijn en Sport

Parlement taking quantum computer risk seriously



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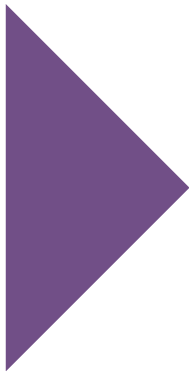

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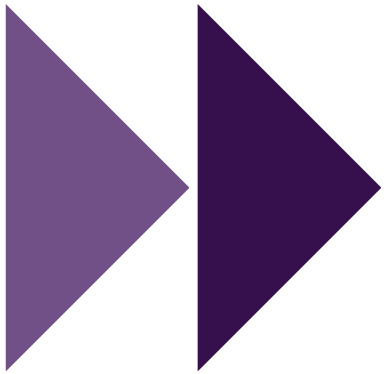

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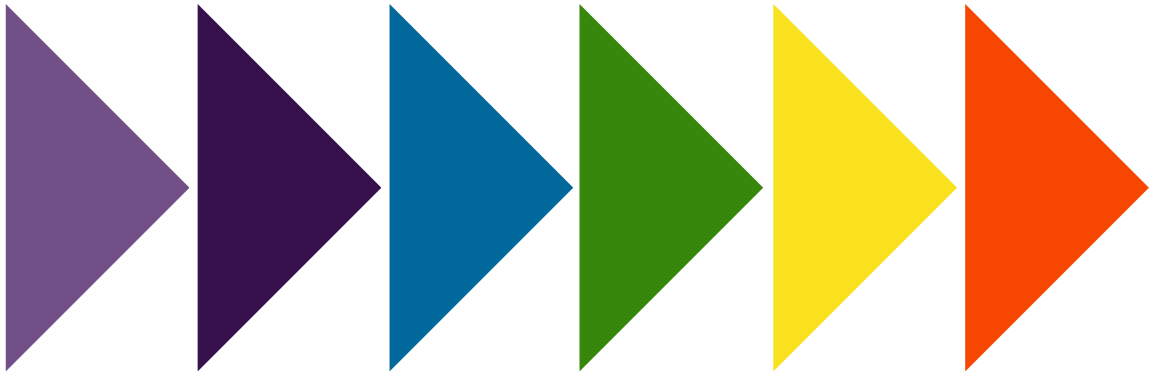

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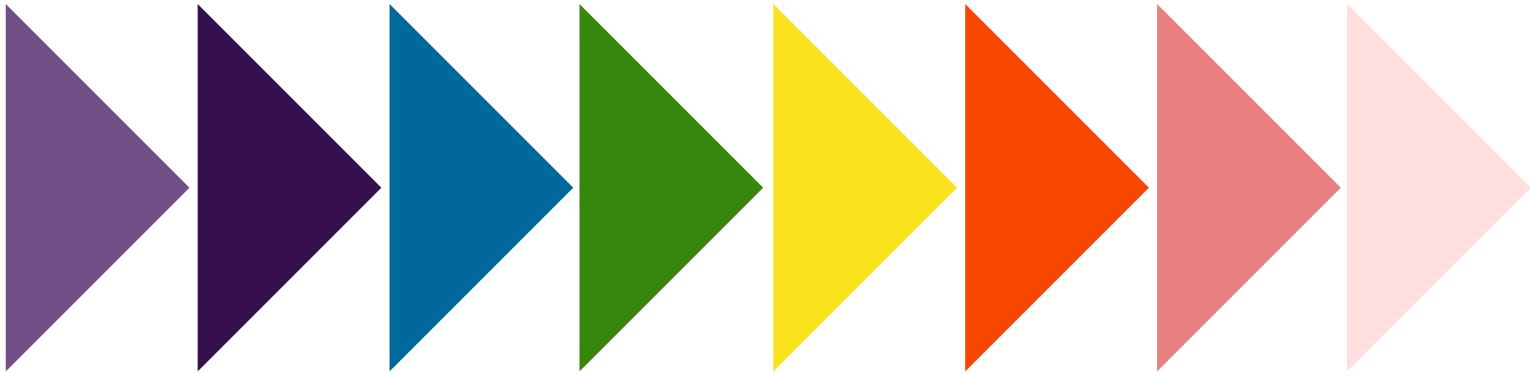

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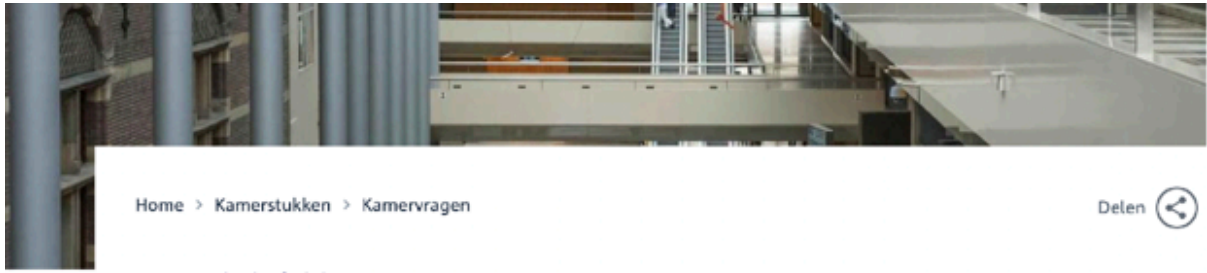
Government is planning to address the quantum computer risks



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Government is planning to address the quantum computer risks

- National Crypto Strategy

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- National Crypto Strategy
- Invest in scientific research and the development of secure products
- 2023: publication of the Quantum Migration Guide
- Develop a Quantum Impact Assessment
- **Create a plan to make the government quantum resistant**

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Workgroup: Quantum Safe Crypto

Mission from CIO council beraad with advice from CISO council

Mission fase 1 (CIO-council)

Create a **plan** en request approval by the CIO council

OBJECTIVES

1. **Increasing awareness and knowledge** among administrators and employee groups involved in cryptography.
2. Develop and determine **government-wide crypto policy** in close collaboration with the NBV.
3. **Connecting with other crypto initiatives** and ensuring that knowledge (building) is bundled and secured and becomes and remains available.
4. Ensuring that the use of cryptography in **new applications and systems is as secure** as possible “by design” quantum by embedding in design and development processes.
5. **Migrating current applications** via the recommended approach TNO and IenW.

Mission in perspective

PHASES

TIMELINE

The approach 3 tracks

THE TRACKS

1. **Awareness and (project) communication** (including ensuring connections with other initiatives)

2. **Policies and quantum secure by design processes** (including the threat: “store now decrypt later”)

3. **Migration current applications**

Collaboration

Realisation

Steering

Execution

STEERING GROUP (ROADMAP DIGITAL RESILIENCE)

- Tied to the “I-strategie Rijk”

CORE TEAM

- 3 x 2 leads
- Various departements and organisations

SOUNDING BOARD GROUP

- To be created (experts)

WORKING GROUPS

- From different parts of the government
- Different type of organisations
- IT-service provider and dienstverleners en supervisors

Governance

- To be implemented PQC standards and protocols
- Guard for interoperability
- Centrally managed aspects of supplier management
- Develop a risk management approach that assists prioritising

Disclaimer: this is an early concept! Feedback and management decision to be taken!

Interdepartmental collaboration

- Develop interoperability studies
  - Non-technical and technical.
- Create an expertise center
  - With trend-watch for new tech, standards, protocol development and products.
- Provide an interoperability lab

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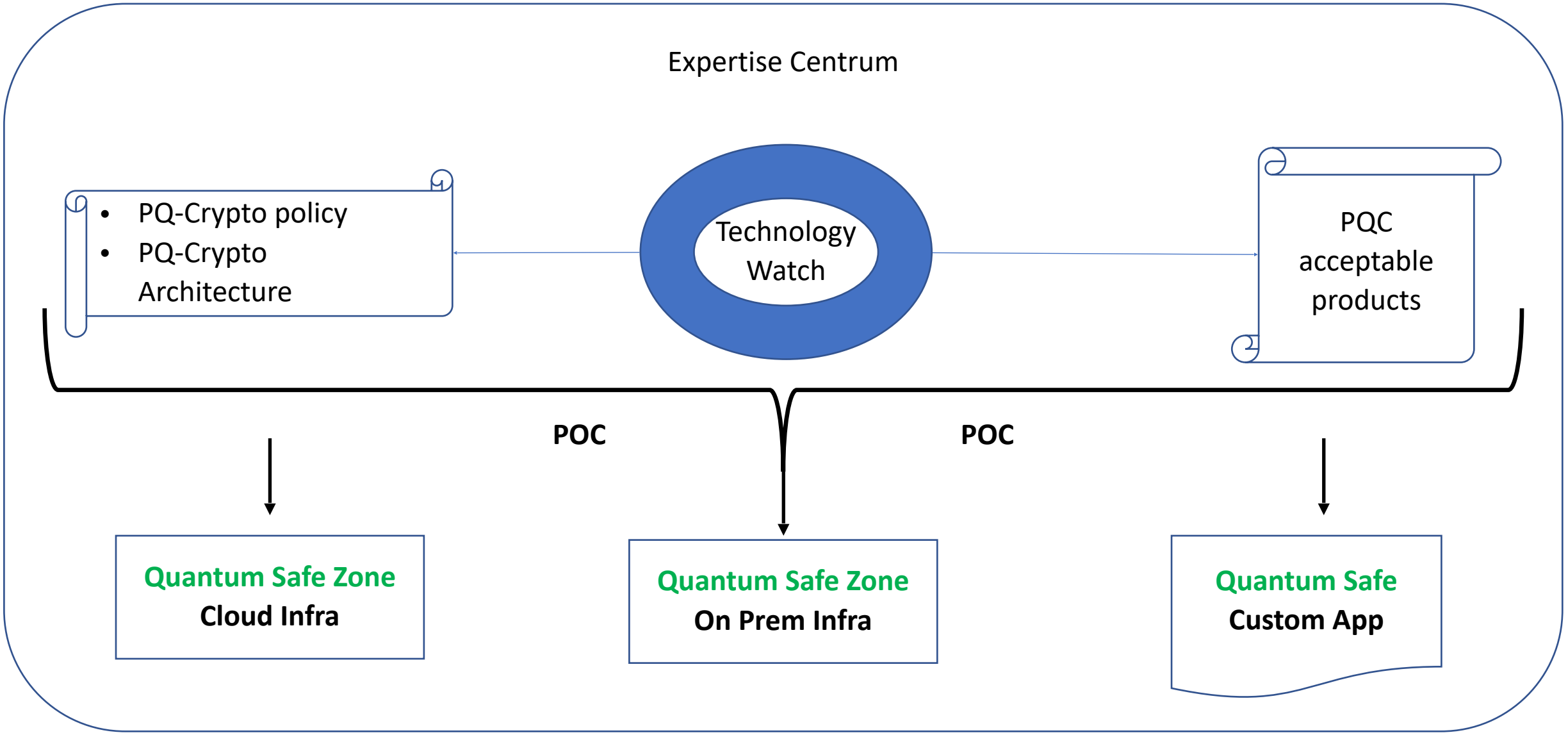
From Pre to Post Quantum Cryptography



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Strategic/tactical procedures

- Supplier management
  - Post-quantum “ready” solutions as a qualifier.
- Development guidelines
  - e.g. instructions for documentation and CI/CD
- Extend inventory management with new guidelines
  - What products contain what crypto-technology?
  - Which cryptographic assets are there, and which technology is in use?

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How do you upgrade a government to become post quantum crypto secure?

You do it together.