

# Focus on quantum technology in central government

ITWG Coffee Break

*19 February 2026*



Algemene  
Rekenkamer

# What is quantum technology?

- Collective term for technologies that take advantage of special properties of quantum
- Quantum computers work with qubits
  - 0 and 1 instead of 0 or 1
- *“It’s like using a boat to cross the Strait of Gibraltar instead of driving around it in a race car.”*

## Quantum technology has 3 application areas



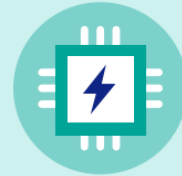
**Quantum sensors**

Quantum sensors make ultra-precise measurements for detection and observation purposes



**Quantum communication**

Applications to connect quantum computers and secure communications



**Quantum computers**

Faster execution of complex calculations that are now almost inconceivable

# Why we started the audit?

- Quantum technology provides many opportunities and seen as **strategic technology**.
- Yet also an **upcoming threat** to society and government: Q-day
- Is the Dutch government prepared for this? What is the Dutch central government doing to mitigate the risks and seize opportunities?

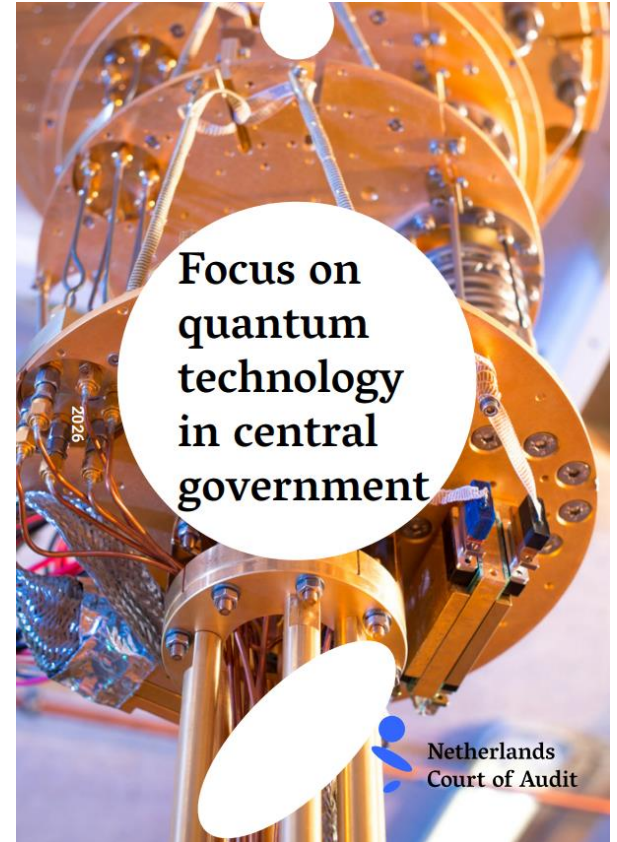
09.04.2021 . [Awards](#)

Quantum Delta NL awarded 615 million euro from Netherlands' National Growth Fund to accelerate quantum technology

**We need to urgently strengthen the EU's transition to a quantum-safe world**

# Audit approach and methodology

- Focus investigation method
- Survey at 63 governmental organisations
  - Manage sensitive information and/ or perform vital processes
  - *Urgent adopters*
- Questions based on PQC migration steps by relevant expert organisations (e.g. General Intelligence and Security Service)
- 10 in-depth interviews



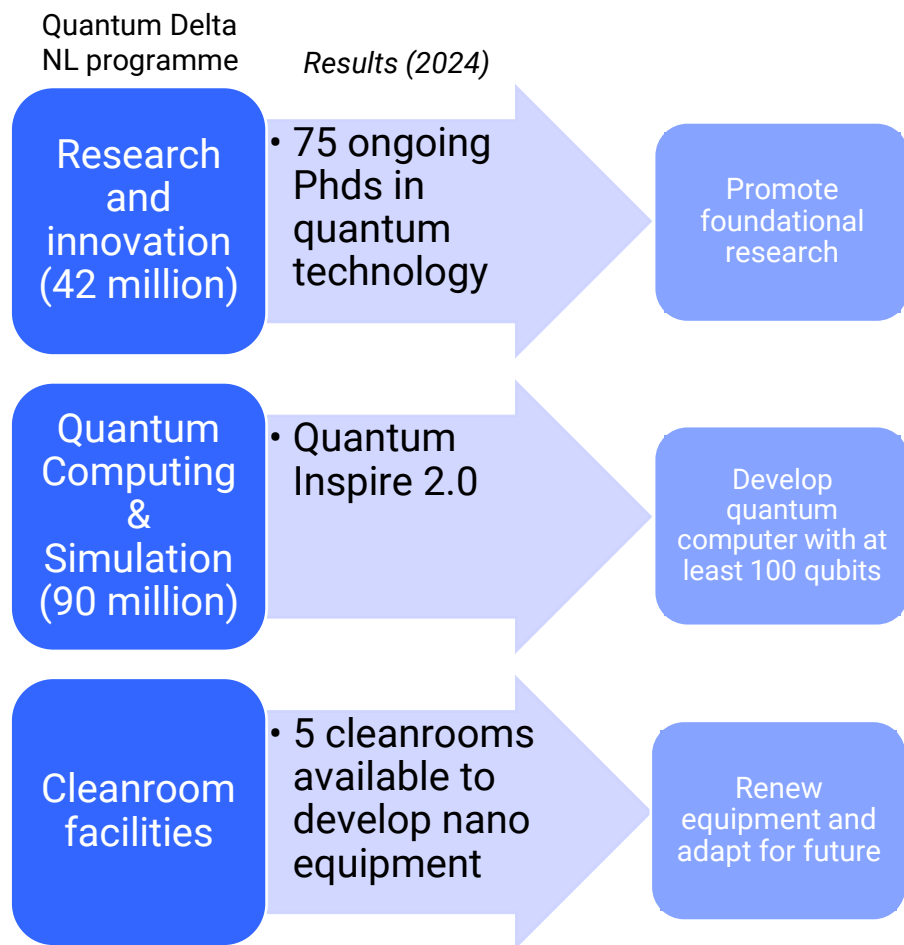
# Ambitions of the Netherlands

- World class Quantum **ecosystem** by **2035**
  - Future earning capacity of the Netherlands
  - Withstand security threats
- Public investment of **615 million**
- Work is ongoing on government-wide Quantum strategy
- Link the European strategy to accelerate Dutch ecosystem



# Intermediate results

- Several **milestones already passed**
- The Netherlands **seen as a leader** in quantum technology
- However, **challenges for the future**
  - Growth funds ends
  - Other countries are investing more
  - Dutch ecosystem not yet mature



*Selected overview of Quantum Delta NL Programme*

# The opportunities of quantum technology

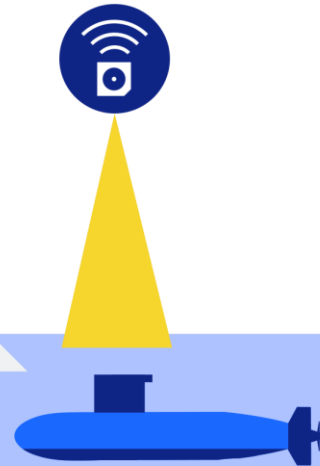
Perform complex computations



Protect communications



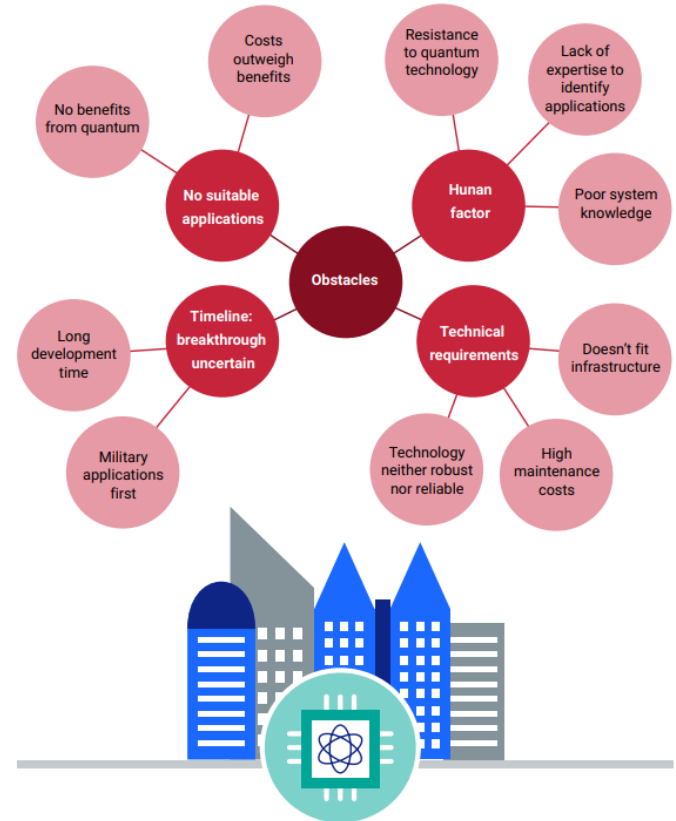
Detect weapons underground



# Government agencies do not explore quantum technology yet

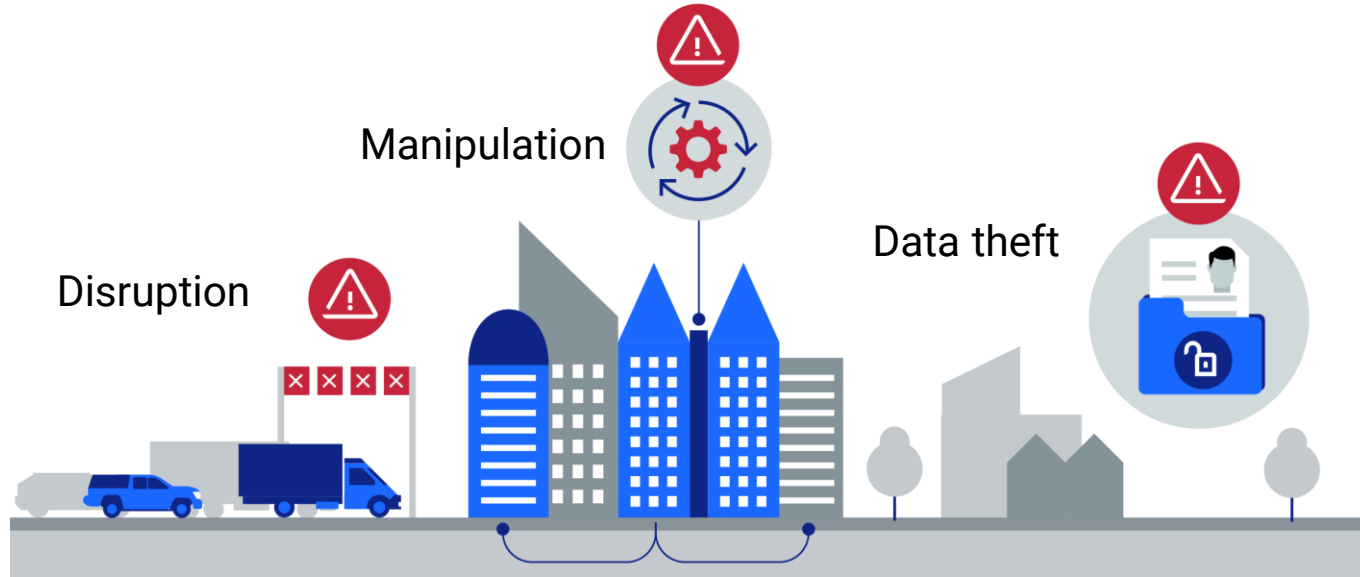
- Most organisations **have not explored opportunities** of quantum technology yet
  - Importance goes to the threats
  - Few obvious use cases
- Those who did:
  - *“We have discovered that quantum technology can offer benefits, but it does not improve everything”*
  - More development needed

Technology is not the only obstacle for quantum technology



# Quantum technology is an upcoming threat

- Quantum computers can **crack asymmetric cryptography**
- Cryptography protects all kinds of **vital infrastructure**



# Q-day is coming; perhaps as early as 2030

- **The day** that quantum computers can **crack cryptography**
- **Experts are divided.** Earliest estimates are 2030
- Consensus: **prepare now**, because
  - Preparations take a long time
  - Store now, decrypt later



# Migrate cryptography to mitigate risks

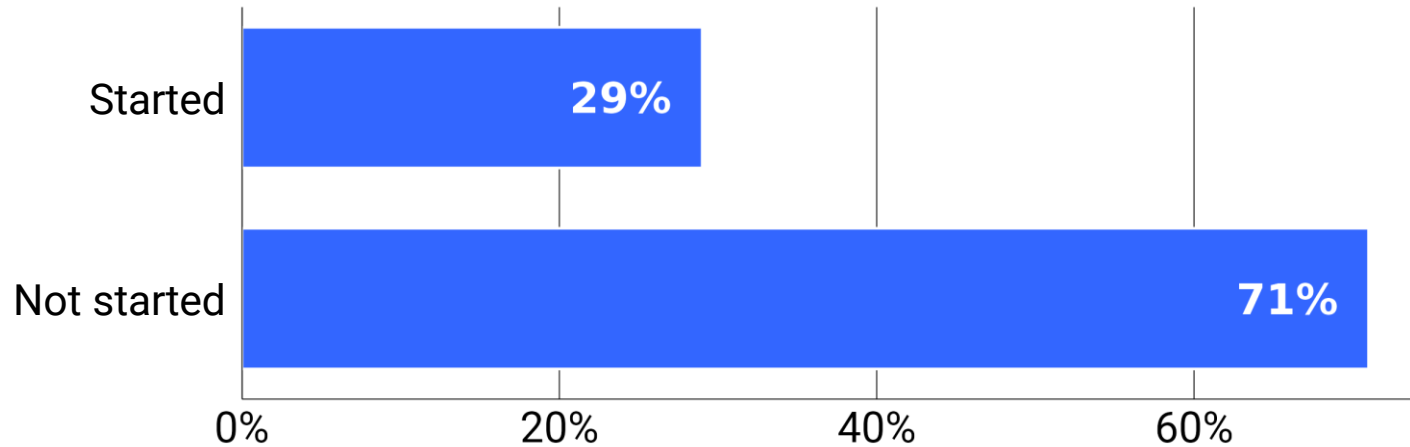
- **PQC standards** have been **developed**
- Replace RSA with **post-quantum cryptography (PQC)**
- **We studied:** How far along are governmental organisations in their PQC-migration?



# We focused on the first migration steps

- Incorporate the quantum threat in **risk management**
- Carry out a **cryptography inventory**
- Discuss PQC with **suppliers**
- Prepare a **cryptography policy**
- **Manage** the PQC-migration
- **Experiment** with PQC

# 71% of organisations have yet to start their PQC-migration<sup>1</sup>



<sup>1</sup> N = 63 organisations

# Organisations are working on inventories<sup>1</sup>

■ Yes ■ Ongoing ■ No ■ Don't know

## Critical processes identified



## Inventory made of network and information systems



## Inventory made of cryptography in network and information systems



<sup>1</sup> N = 63 organisations

# Few organisations have specifically prepared for quantum<sup>1</sup>

■ Yes ■ Ongoing ■ No ■ Don't know

## Timeline adopted for migration to quantum-safe cryptography



## Quantum threat included in risk management processes

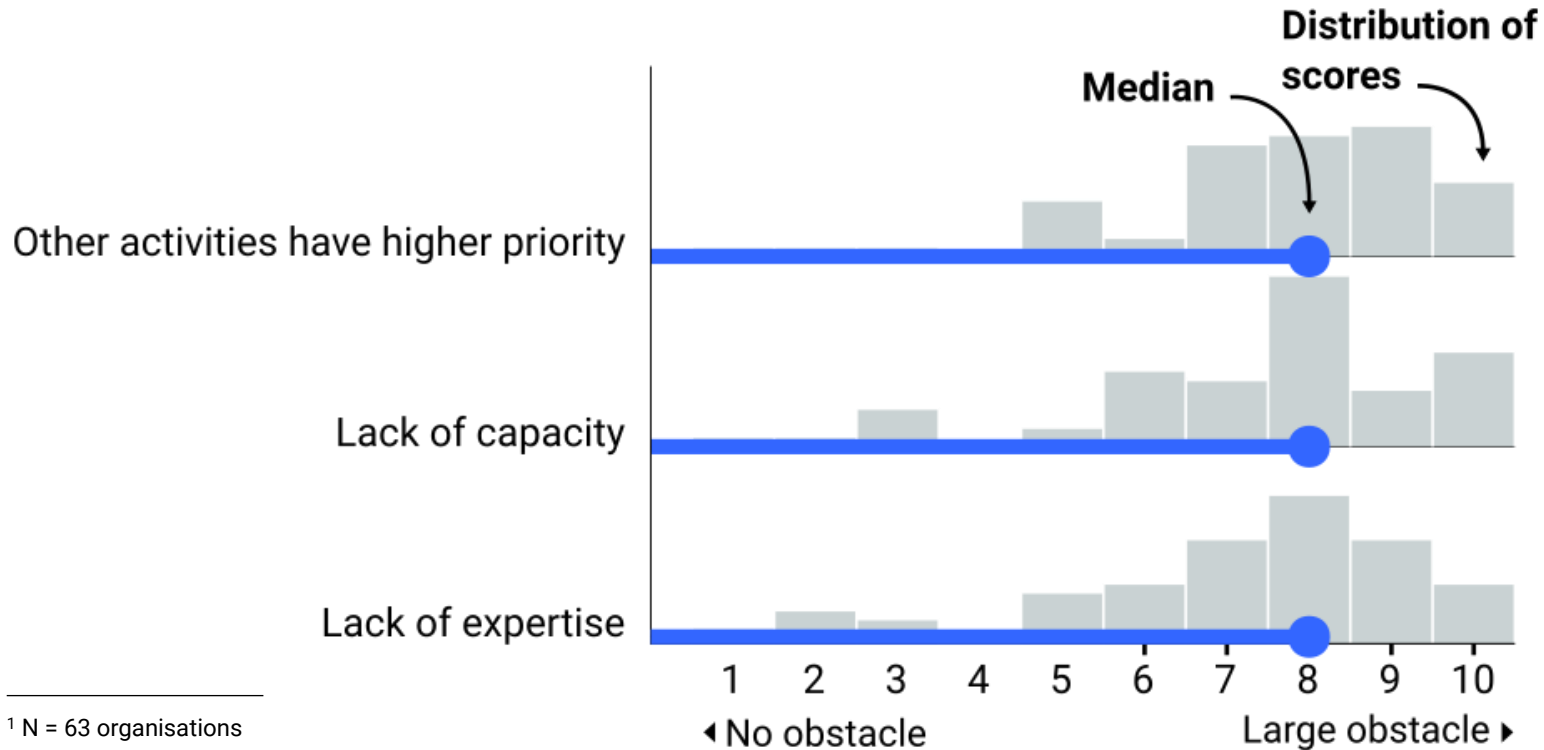


## Talks started with suppliers about quantum-safe cryptography



<sup>1</sup> N = 63 organisations

# Quantum is one of many priorities for organisations<sup>1</sup>



<sup>1</sup> N = 63 organisations

# Conclusions

## Opportunities

- First steps taken to establish a **strong scientific ecosystem**
- **Questions** about the **future**

## Risks

- Most organisations are **yet to start** with **PQC migration**

## The minister's response

- **Acknowledges** that there is **work to do**
- Will launch a **quantum strategy** in Q2 2026

# Impact of the report

- **Several high profile media** published about our report
- Most of the **attention is about the risks**
- Sparked a lively **discussion about when and how**
- **Parliamentary briefing** on March 12<sup>th</sup>