At TNO, we focus on designing algorithms to tackle industry challenges while assessing feasibility and adoption timelines.

So far, we have implemented quantum solutions in sectors such as energy, finance, agriculture, satellite modeling, advanced materials, and medicine.

The TNO Quantum Application Facility aims to showcase and accelerate quantum adoption in industry through three key pillars:

1. Hardware:
Access to state-of-the-art quantum systems for diverse use cases.

2. Software:
Development of versatile software building blocks.

3. Applications:
Building solutions to integrate hardware and software into industry pipelines.

What we offer
The QAL facility seeks partners exploring quantum computing solutions for their business or facing computational challenges beyond current systems. We also strive to help organizations new to quantum seamlessly enter the ecosystem. We analyze workflows to identify quantum-driven speedups, providing both future insights and immediate efficiency gains through innovative problem-solving. The QAL Facility offers three collaboration models based on your quantum ambitions:

Strategic Exploration: A high-level study of quantum's potential for your industry and the steps needed for adoption.

Use Case Exploration: In-depth analysis to identify potential quantum use cases and propose solutions.

Application Development & Implementation: Focused development of a specific use case, including implementation and a roadmap for adoption.

Contact us!

The QAL Facility is your gateway to quantum computing, offering hands-on, risk-free exploration backed by cutting-edge R&D. As a key player in the Dutch quantum ecosystem, partnering with us provides seamless access to industry advancements and expanded opportunities for your business.

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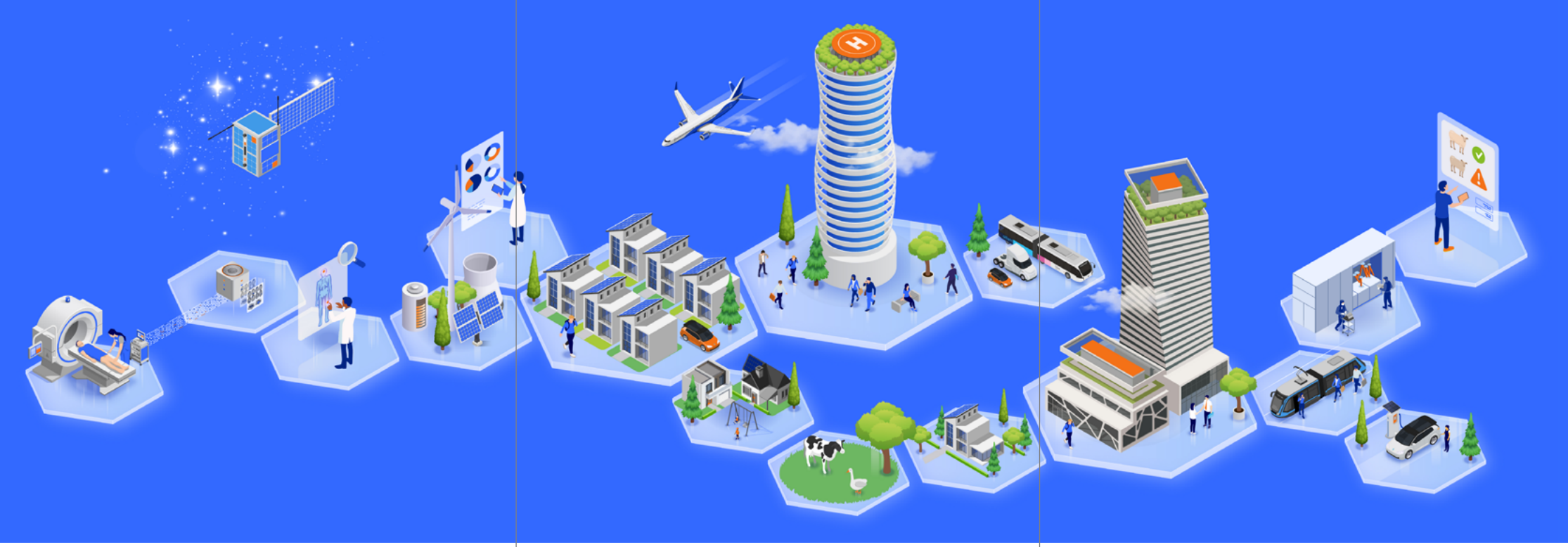
Digital | **Quantum technology**

QUANTUM APPLICATION LAB

TNO innovation for life

Building Quantum Computing Solutions for your Organisation



The Quantum Application Lab Facility offers a unique R&D collaboration with world-leading knowledge to develop quantum computing applications for organizations with computational challenges in optimization, simulation, machine learning or other fields.

Quantum computing holds transformative potential across a wide range of fields by leveraging the principles of quantum mechanics to perform calculations that are infeasible for classical computers.

Quantum mechanics provides quantum computers the unique capability to explore vast solution spaces optimally, or even in parallel, making them especially powerful for:

Energy and power industry
as it is expected to benefit from quantum computing's simulation and optimization capabilities and computing power to result in more efficient electrical power systems, better batteries, cleaner fertilization, and lower emissions.

Medicine, life sciences and biotech industry
as quantum computing's ability to simulate larger, more complex molecules could reduce drug discovery time and increase effective patent life.

Financials as they are exploring optimized investment portfolio management and more effective analysis of large or unstructured data sets with equally powerful use cases in capital markets, corporate finance, and encryption-related activities.

Oil and gas industry as they aim to improve subsurface imaging and optimize the storage of volatile goods like oil and hydrogen. Quantum simulation and optimization can enhance these processes.

Logistics and supply chain management, as quantum algorithms can be utilized to optimize routing, planning, and risk management. Additionally, they can enhance processes within digital twins.

You, as quantum computing facilitates the rapid training of machine learning models and the development of optimized algorithms for a wide range of applications.