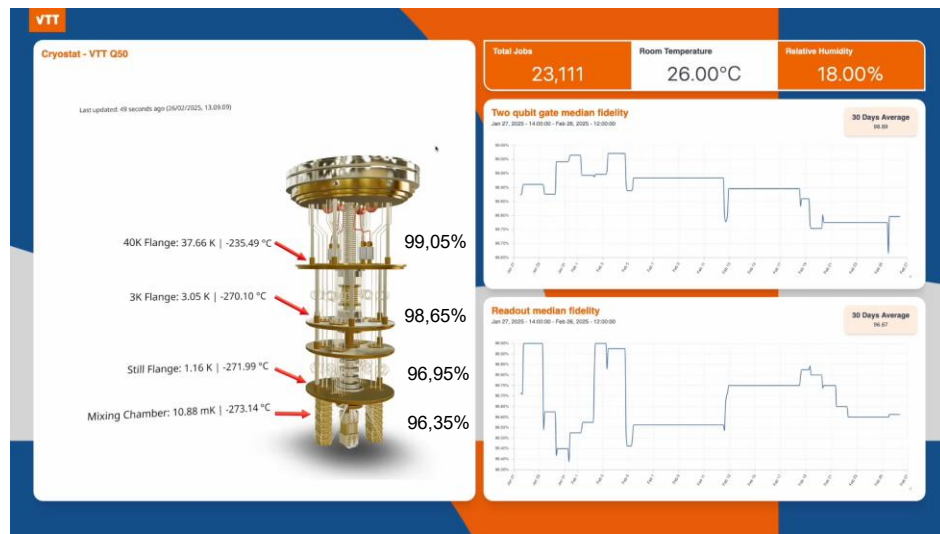


VTT QX Quantum Cloud Service

VTT Q50 Quantum Computer

VTT

- Launched in March 2025 – Europe's first 50 qubit superconducting quantum computer
- VTT Q50 was a co-development project between VTT and IQM
- Connected to CSC LUMI+AI supercomputer
- Circuit and Pulse level programming options
- Available through VTT QX computing service for companies and researchers



Median 1Q fidelity 99,93%
Median 2Q fidelity 98,92%

VTT QX

- Cloud service access to run circuits
- Job management
- Device access
- Dashboard
- Resource accounting

The screenshot displays the VTT QX dashboard with the following components:

- Navigation Bar:** Includes the VTT logo, tabs for DASHBOARD, JOBS, PROJECTS, and DOCS, and a user profile icon (GB).
- Device Status Panels:** Three panels for Demo, Q5, and Q50, each showing status (Online), queue length (0), and qubit count (54 for Demo and Q50, 5 for Q5).
- Bookings Panel:** Displays "No upcoming timeslots" and a "Schedule a slot" button.
- Recent jobs Table:** A table listing recent jobs with columns for Job ID, Status, Started, Completed, Device, and Action.
- API tokens Panel:** Shows a dropdown for the project (Personal project for gayuh.rahmad@vtt.fi) and a field for API tokens (No token found).
- News Panel:** Contains two news items: "Q50 Software Update v260325" and "VTT and IQM launch first 50-qubit quantum computer developed in Europe".

Job ID	Status	Started	Completed	Device	Action
b43a273c	⚠ Aborted	07.05.25 11:54:11	-	Q5	🔗
c948a5d1	✅ Ready	07.05.25 11:54:03	07.05.25 11:54:09	Q5	🔗
174bafcb	✅ Ready	07.05.25 11:53:56	07.05.25 11:54:01	Q5	🔗
9a7651ec	✅ Ready	07.05.25 11:53:49	07.05.25 11:53:54	Q5	🔗
9c9ed8cd	✅ Ready	07.05.25 11:53:41	07.05.25 11:53:47	Q5	🔗

Use Case examples run with VTT Q50

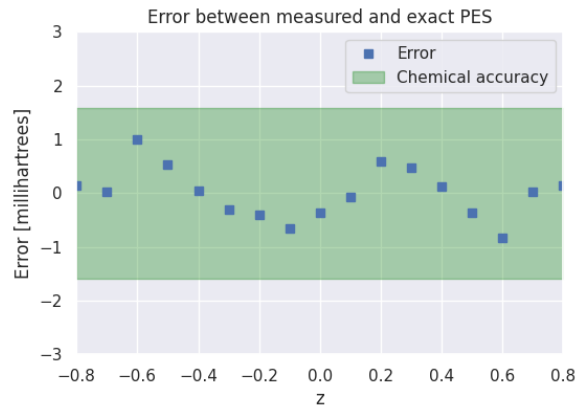
VTT

VTT

Ammonia molecule simulation

Result:

- **Chemical accuracy:** results inside chemical accuracy (± 1.59 millihartrees) are considered accurate enough for practical chemical predictions



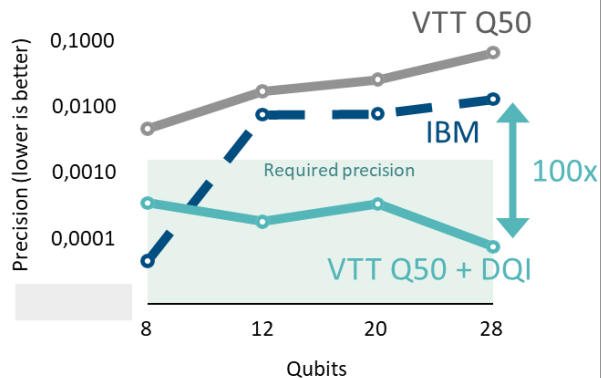
11/11/2025 VTT – beyond the obvious

algorithmiq

Energy gaps for BODIPY molecules

Result:

- We improve **precision 100x times** over our results obtained on IBM System One at Cleveland Clinic



QUANSCIENT

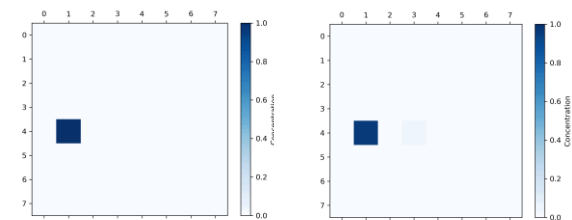
Advection-diffusion equation execution

Result:

- First end-to-end execution of repeated 2D QLBM steps on superconducting QC

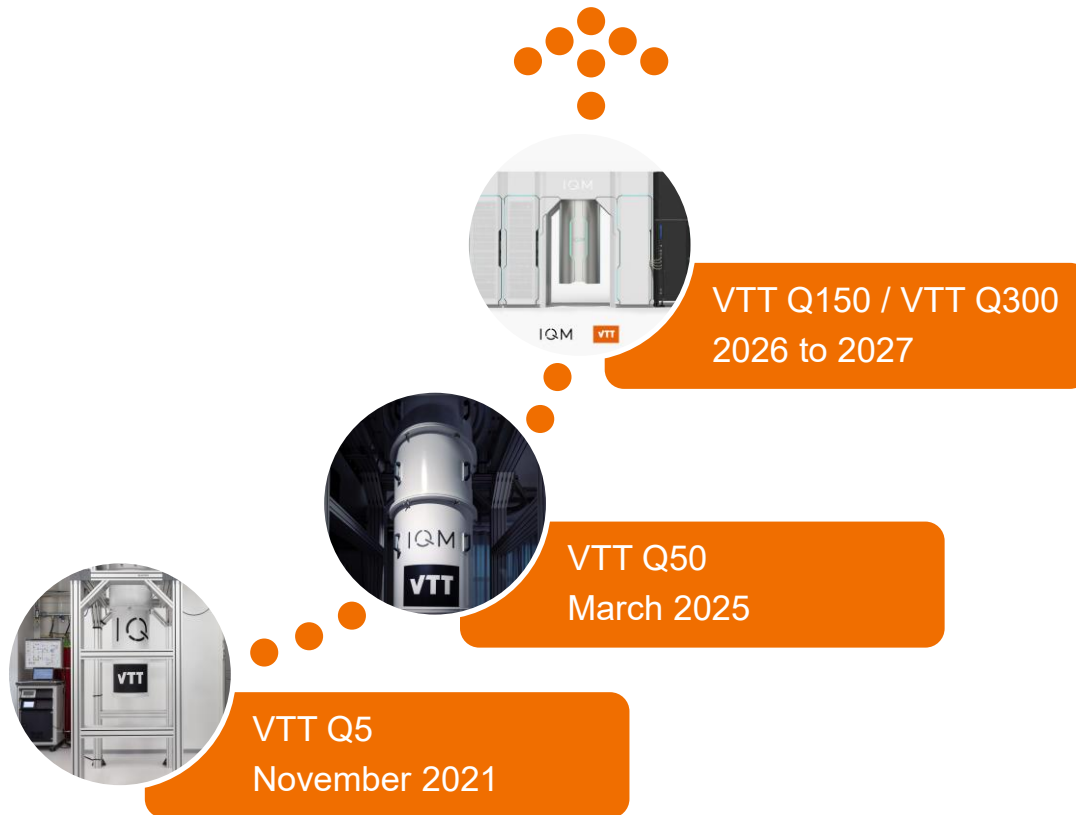
Valtteri Lahtinen, Chief Scientist and Co-Founder:

"The launch of the VTT Q50 quantum computer in March 2025 was an important milestone for the European ecosystem. We have achieved the best results that have been achieved with any competing technology."



Ideal simulation (left) and results (right) after noise mitigation

VTT Quantum Computer Roadmap



VTT launches a quantum computing campaign for company public research

Companies can apply for access to VTT Q50 superconducting quantum computer at no cost

- Application period: 20.10.2025 – 30.11.2025
- 1-20 hours QPU time – important to justify
- Evaluation criteria:
 - scientific contribution
 - justification of the problem vs. required computing resources
 - contribution to the Finnish quantum ecosystem
 - plan for publishing the results
 - the capability to execute the project
- Companies in EU, EEA, United Kingdom and Switzerland
- More about the campaign, criteria and how to apply:

<https://www.vttresearch.com/en/apply-quantum-computing-time-public-research-no-cost>



bey⁰nd

the obvious

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