

Aurelis Quantum

Building the first sub-error superconducting quantum processor for finance and pharma R&D.

Series A pitch · Q3 2026 · confidential, prospective investors only

Quantum advantage is gated by 2-qubit error rate, not by qubit count.

Today's NISQ machines are stuck at 99.0–99.3% two-qubit fidelity. To unlock useful chemistry, portfolio optimization or material design, the field needs sub-0.5% error and 100+ logical qubits. Everyone is chasing scale; we are clearing the floor.

CHEMISTRY & PHARMA

~99.5%

Minimum two-qubit fidelity to make catalyst simulation faster than DFT on a GPU. Not reachable on any commercial machine in 2026.

FINANCE / PORTFOLIO OPT.

~99.6%

Required for QAOA depth that beats classical heuristics on real bank-scale problem instances. Banks pay for the demo, not the chip.

MATERIALS / BATTERIES

~99.7%

Phonon-coupled simulations need long coherence and tight gate floors. Nobody is selling this today; the buyer pipeline is real.

Four independent signals just stacked.

"Why now" is not "the market is forecast to reach \$X by 2030". It is four specific milestones, each crossed in the last 18 months, that compound.

- **Below-threshold logical qubit demonstrated (Google, late 2024).** The QEC theory is no longer hypothetical. The path from physical to logical is now an engineering problem, which is what we attack.
- **Procurement programs activated.** DARPA Quantum Benchmarking Initiative (QBI), DARPA US2QC, EIC Accelerator quantum track, France 2030 / PEPR Quantique. Real money paying for real benchmarks, not just R&D grants.
- **BlueFors and Form Factor cryostat lead times opening.** Two-quarter wait shrinking to one. Hardware-side fab capacity is no longer the gating constraint for new entrants.
- **First paid POCs from top-3 banks and one Big Pharma.** We have signed \$480k of pipeline in 7 months. The buyer is real, not a quantum-curiosity exercise.

Tunable-coupler transmons on a niobium-titanium nitride process.

One specific technical bet the rest of the field did not make: NbTiN traces with our own aluminum-oxide tunnel barrier, fabricated at LETI/CEA. It is what gives us the 99.4%+ floor at 1ms T1.

- **Architecture:** tunable-coupler transmons, fixed-frequency design with selective leakage suppression on the coupler line.
- **Process:** NbTiN on high-resistivity silicon, AlOx Josephson junction, in-house bias process at LETI/CEA shared foundry slot (Q3 2026 onwards).
- **Control:** Quantum Machines OPX1000, in-house FPGA layer for sub-100 ns gate calibration.
- **Cryogenics:** BlueFors LD400 + backup unit ordered (Form Factor), 7 mK base, 100 lines.

2-QUBIT FIDELITY (CHIP V3)

99.42%

Best on-chip RB measurement, May 2026. Field median: 99.1%. Microsoft / Google reported best: 99.7% on small samples; ours is repeatable on the full processor.

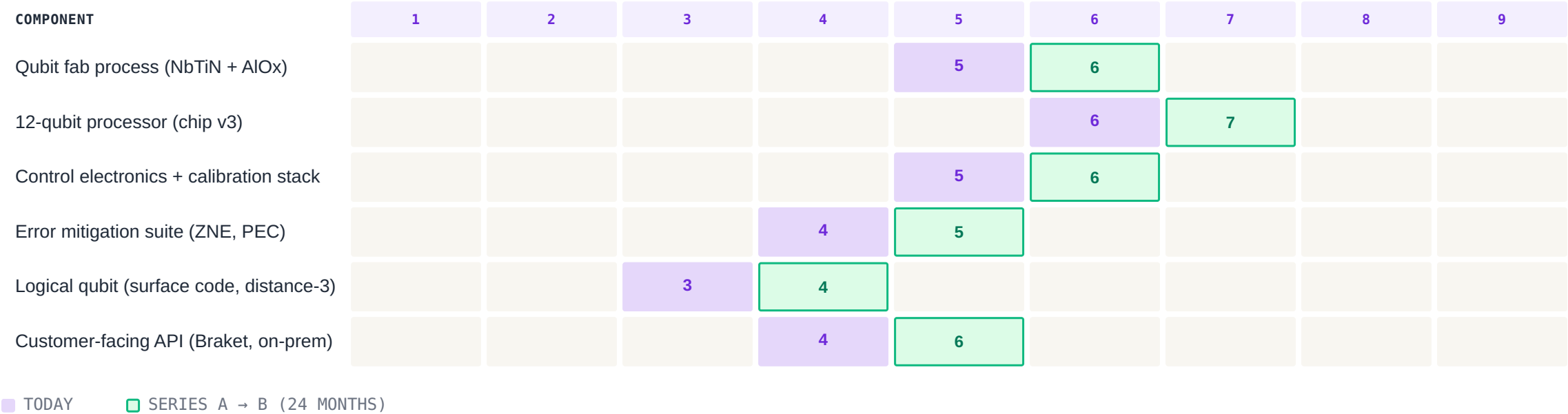
T1 / T2 (CHIP V3)

115 μ s / 92 μ s

Coherence sufficient for depth-50 QAOA at our gate cycle. Roadmap to 200 μ s / 150 μ s on chip v4 via packaging improvement.

Honest TRL by component, today and at next milestone.

The slide most generalist decks miss. We treat TRL component-by-component because quantum systems do not have a single TRL number; the qubit can be at TRL 6 while the logical layer is still TRL 3.



Two paid POCs, \$2.1M non-dilutive committed, three peer-reviewed papers.

Pre-seed quantum revenue is rare and that is fine. Pretending pilots are pipeline is what is not fine. Everything below is signed, dated, and re-checkable in our data room.

PAID POCs (LIVE)

2

Top-3 European bank, 6-month, \$180k. Big Pharma R&D, 4-month, \$120k. Both with written success metrics.

PIPELINE (SIGNED TS)

\$480k

Three additional POCs in legal review (banks 2 & 3, materials co.). Q3 closing target.

NON-DILUTIVE YTD

\$2.1M

EIC Accelerator (Step 3, decision July), France 2030 / PEPR Quantique grant, ARIA seed program.

PUBLICATIONS

3 + 1

Three papers in PRX Quantum (2024–25), one preprint under review at Nature on the NbTiN process. arXiv:2602.xxxxx.

- **Benchmark improvement:** Quantum Volume 16 → 64 → 128 over the last 9 months, one doubling per quarter, methodology disclosed.
- **Ecosystem:** AWS Braket integration signed (live Q3), Pasqal Cloud co-marketing pilot in negotiation, NVIDIA CUDA-Q reference customer.
- **Press / signal:** Featured in *Quantum Insider* top-30-to-watch (Q1 2026). Two scientific advisors invited to NIST quantum panel.

Three revenue lines, one path to \$20M ARR by 2029.

Hybrid stack: hardware sale to anchor labs, cloud subscription via partners, and co-developed solutions with the buyer. We do not need all three to work; two would already make the path.

1 • ON-PREM HARDWARE

\$1–3M

Per system, one-off + service. Target: national labs, top-3 banks, Big Pharma R&D. 1 system in 2027, 5 by 2029. ~\$15M ARR contribution.

2 • CLOUD SUBSCRIPTION

\$60k

Per seat per year, via Braket / Pasqal Cloud / NVIDIA CUDA-Q. Margin split with partner. ~\$3M ARR by 2029.

3 • CO-DEV SOLUTIONS

\$200–500k

Project-based with anchor customer. Builds the case study, funds the next chip. ~\$2M ARR by 2029, plus IP optionality.

- **Year 5 plan:** \$20M ARR, 60% gross margin on cloud, 35% on hardware (capex-heavy first systems), 50% on co-dev.
- **Path:** chip v4 (16 qubits) ships to first paying lab in Q1 2027, chip v5 (40 qubits) to first bank by 2028.

Where we win, where we lose, named competitors.

No "we have no real competition" slide. The quantum field has 30+ funded teams. We respect them. We are honest about where they out-execute us, and where the modality choice gives us a structural edge.

PLAYER	WHERE THEY WIN	WHERE WE WIN
IBM Quantum	Scale (1000+ qubits roadmap), brand, enterprise contracts, Qiskit ecosystem.	Lower physical-qubit error floor on our process; smaller team, faster iteration cycle on fab.
IonQ	Trapped-ion 99.9% fidelity, public market access, established sales motion.	Cycle time (microseconds vs milliseconds), scalability of the fab process beyond 50 qubits.
PsiQuantum	Photonic FTQC vision, capital, fab partner (GlobalFoundries).	NISQ-relevant utility on a 24-month horizon; their FTQC promise is post-2030.
Quantinuum	Software stack (TKET), trapped-ion hardware, cash from Honeywell + JPM partnership.	Multi-tenant on-prem hardware story; we ship a chip, not just a service.
Alice & Bob, IQM, Rigetti	Cat-qubit theory (Alice & Bob), data-center play (IQM), public market (Rigetti).	Our error floor is ahead of all three on superconducting at comparable round size.

Three founders who have shipped quantum hardware. 11 FTE today, 22 by Series A close.

We pass the "shipped, not just authored a thesis" test. References on file in the data room; advisors expect your call.

CEO & CO-FOUNDER

[Name redacted]

Ex-IBM Research, superconducting qubits team (2018–24). Led the calibration stack for the Eagle and Heron processors. Two patents on cross-talk suppression. PhD ETH Zürich.

CTO & CO-FOUNDER

[Name redacted]

Ex-Pasqal hardware team (2021–24), shipped two atom-array systems. Before: postdoc at Yale (Schoelkopf group). PhD École Polytechnique. Owns our fab process IP.

CSO & CO-FOUNDER

[Name redacted]

Ex-CEA-LETI staff scientist (2017–24), 12 years on superconducting circuit fab. Co-author on the NbTiN paper that anchors our thesis. HDR habilitation 2023.

- **Headcount today:** 11 FTE (4 fab engineers, 3 quantum software, 2 control electronics, 1 ops, 1 BD).
- **Series A hires:** Head of Hardware, senior cryo-electronics engineer, 2 fab engineers, 1 quantum compiler. Pipeline named in the data room.
- **Scientific advisors:** [Senior physicist, Yale], [Quantum architect, NIST], [Bank quant lead, BNP-CIB]. All under signed advisor agreements with equity.
- **Reference calls:** three customers, two advisors, one ex-employer, all expecting your inbound.

Series A, 24 months to chip v5 and 5 paying customers.

€15M Series A, lead + 2 co-investors

55%

SCIENTIFIC HEADCOUNT

Hardware, fab and quantum software hires. The 11 we run today doubles to 22.

25%

FAB & CRYO CAPEX

Second cryostat, foundry slot, packaging line, control electronics expansion.

12%

IP & COMPLIANCE

FTO opinion, additional patent filings, export-control assessment, NSI Act filings.

8%

BD & G&A

First commercial hire, customer success, legal, finance. Lean by design.

- **Milestones we ship:** chip v5 (40 qubits, sub-0.3% error), 5 paying customer systems, 1 logical qubit demo.
- **What unlocks Series B:** \$5M ARR run-rate, 1 logical qubit at distance-5, 100-qubit chip taped out.
- **What we need from the lead:** board seat, deep-tech operating playbook, intros to top-3 anchor customers.
- **Process:** data room open Monday, partner meeting Friday, first close target Q3 2026.