

SemiQonTM

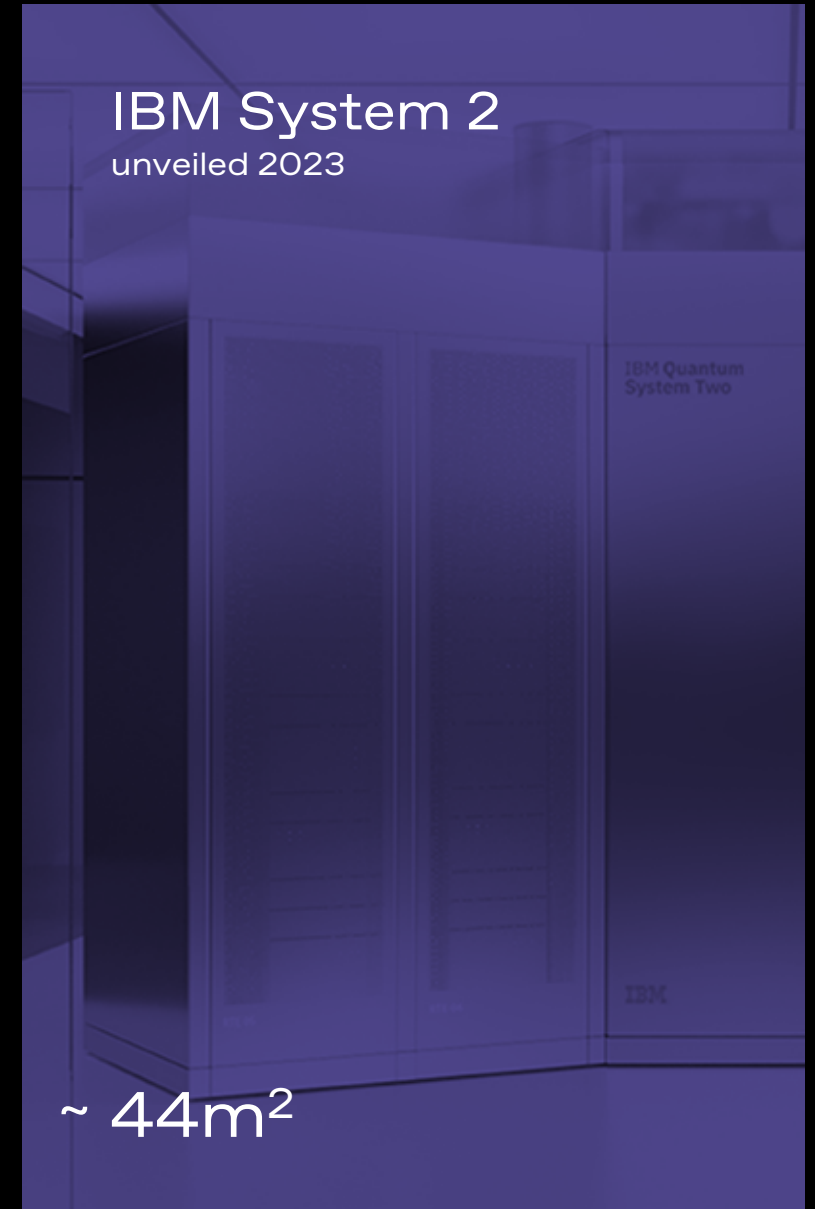
SemiQon™

We power quantum
computers for the
million-qubit era.

THE PROBLEM

Quantum computers keep getting bigger as they get better

The complexity of control electronics, wiring, and cooling becomes the dominant scaling bottleneck.



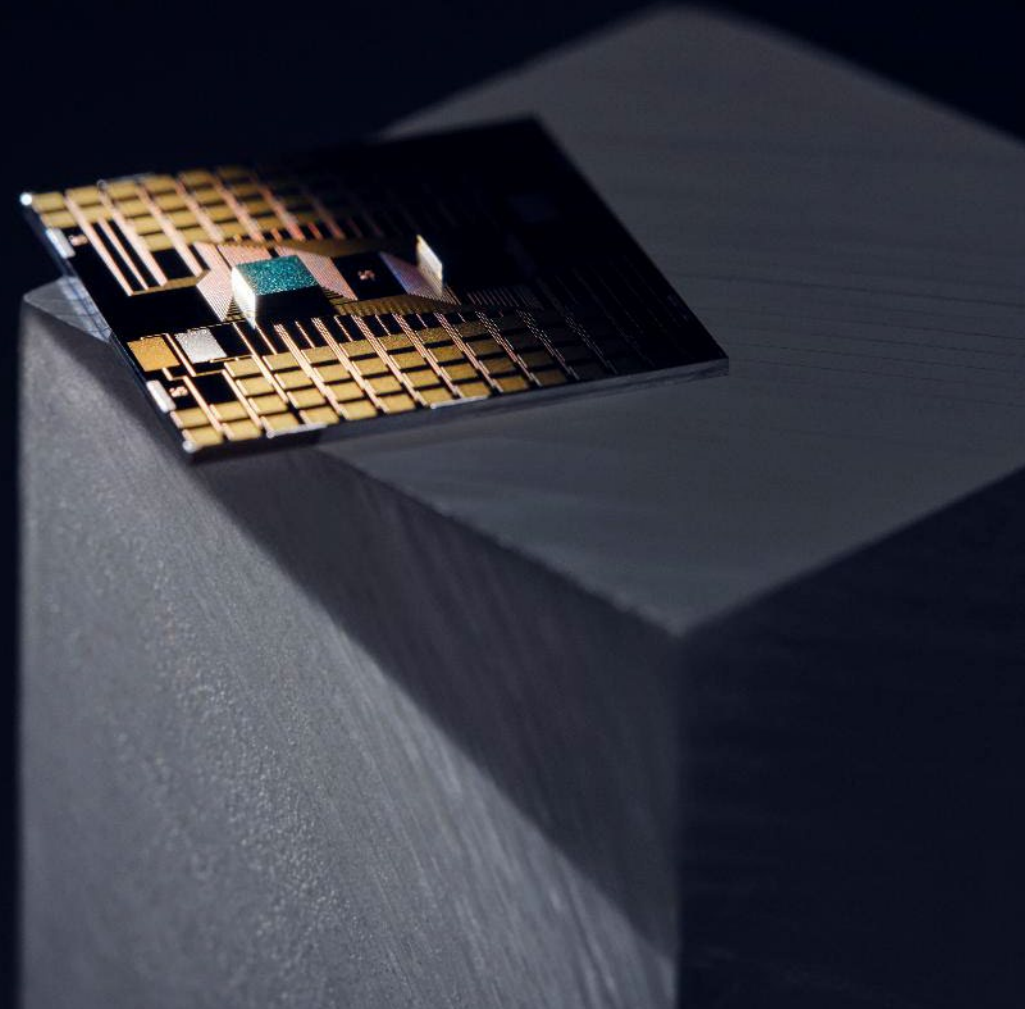
THE SOLUTION

Quantum electronics on a fingertip

Scalable, sustainable, and
cost-effective Quantum
Integrated Circuits

- Control electronics converted to a chip inside the cryostat
- Eliminates bulky room-temperature electronics and complex wiring
- Enables compact, cost-effective, and scalable quantum systems

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Company overview

SemiQon in numbers

2023

Founded

Finland

Headquarters

32

Employees

25

Engineers & PhDs

>10M€

Fundings

11

Patents filed

10+

R&D kits
delivered

1 000+

Quantum dots
multiplexed with
cryo-CMOS

SemiQon team

Executive and founding team



Dr. Himadri Majumdar
CEO, Board Member



Dr. Janne Lehtinen
Chief Technology Officer, Board Member



Prof. Mika Prunnila
Chief Research Officer



Markku Kainlauri
Chief Operations Officer

Board



Dr. Antti Vasara
Chair of the Board



Jussi Sainiemi
Director

Advisory



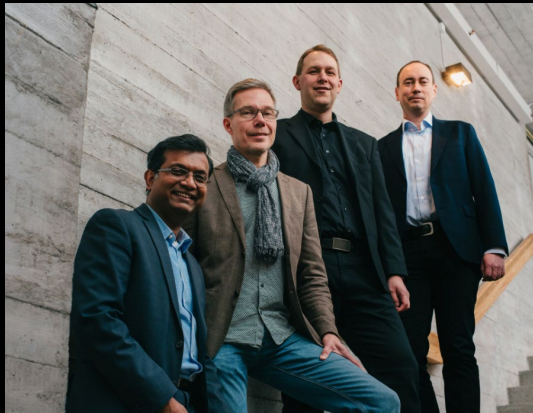
Prof. Prineha Narang
UCLA, USA



Prof. Juha Muhonen
Jyväskylä University, Finland

Our technology & capabilities

Milestones to date



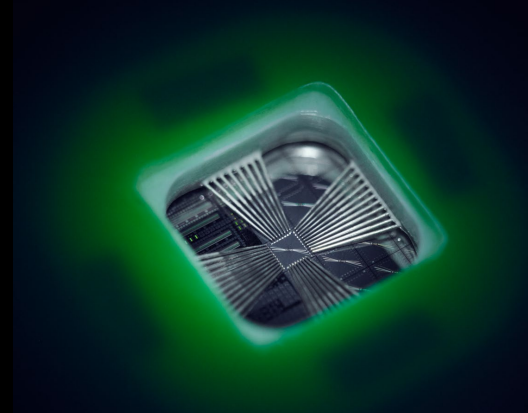
SemiQon enters new growth phase after celebrated its three-year journey

FEB 2026



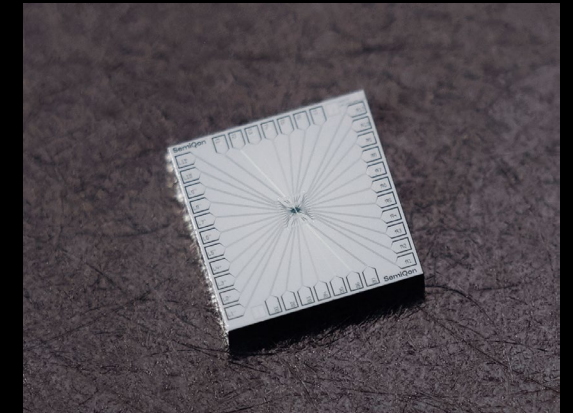
1st prize for cryo-CMOS chip innovation by EARTO

OCT 2025



Launched first ever CMOS transistor fully optimized for cryogenic conditions

NOV 2024



Delivered 4 quantum-dot chips to partners

MAR 2024

OUR TECHNOLOGY & CAPABILITIES

What sets us apart

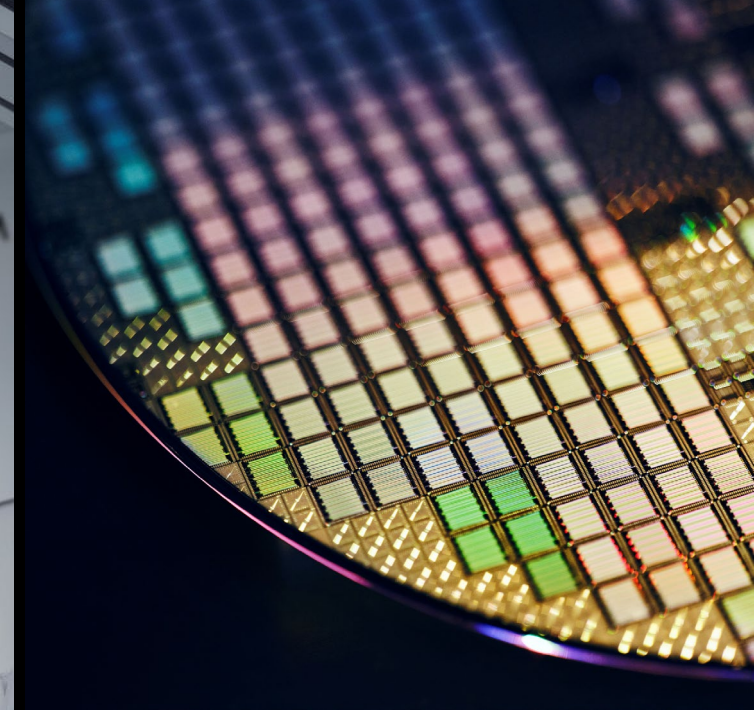
Vertically integrated operation

- In-house operations and full ownership of IP of design, manufacturing and testing.
- This operating model enables **3–4x faster** tape-outs and **4–5x lower** development cycle costs compared with larger foundries.

Superior technology

- Silicon-based Quantum ICs with a proprietary integrated on-chip qubit control platform leveraging cryogenic CMOS for control, readout, and supporting electronics.
- Cryogenic CMOS operating below $-272\text{ }^{\circ}\text{C}$ with ultra-low power consumption, up to $1,000\times$ lower than competing solutions.

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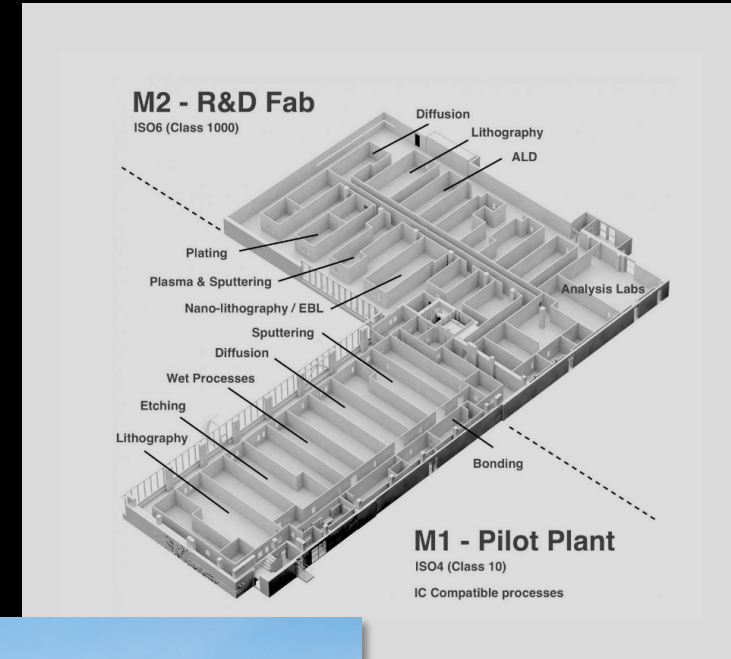


Fabrication facility

Based in Espoo, Finland, SemiQon benefits from direct access to advanced design and fabrication infrastructure, enabling rapid development and strong quality control.

Micronova in Espoo Finland

- Largest R&D cleanroom in the Nordic countries.
- Total CR area 2600 m²
- Hosted by VTT & Aalto University
- Wafer size upgrade from 200 mm to 300 mm (2028)
- Further 3x expansion of manufacturing capability through €0.5B investment at the new **Kvanttinova** facility from 2028



OUR TECHNOLOGY & CAPABILITIES

Measurement infrastructure

Measurement lab in the premises of Finland's national metrology institute

MIKES metrology building — purpose-built metrology facility

Locates in Otaniemi close to Micronova

SemiQon 25m² dedicated lab space in shielded room

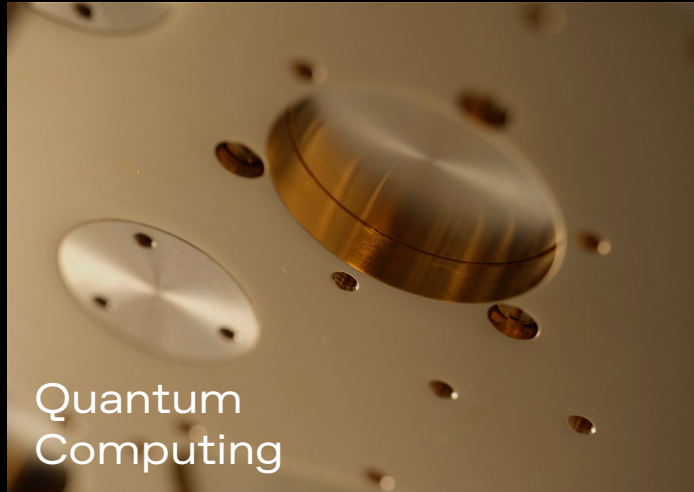
- Possess two cryostats
- MPI wafer level automated room temperature probe station
- High-end measurement electronics

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Available products

Application in multiple domains



Quantum Computing

Quantum integrated circuits and cryogenic peripherals:

- Control electronics
- Readout electronics
- Cryogenic memory
- Cryogenic signal and data processing
- Packaged quantum-dot R&D kits



Space Electronics

Cryogenic CMOS electronics for

- Telescopes (bolometer, infra-red, x-ray)
- Lunar and Mars exploration 5G communication



High-performance Computing

Cryogenic CMOS chips integrated into CPU/GPU/QPU

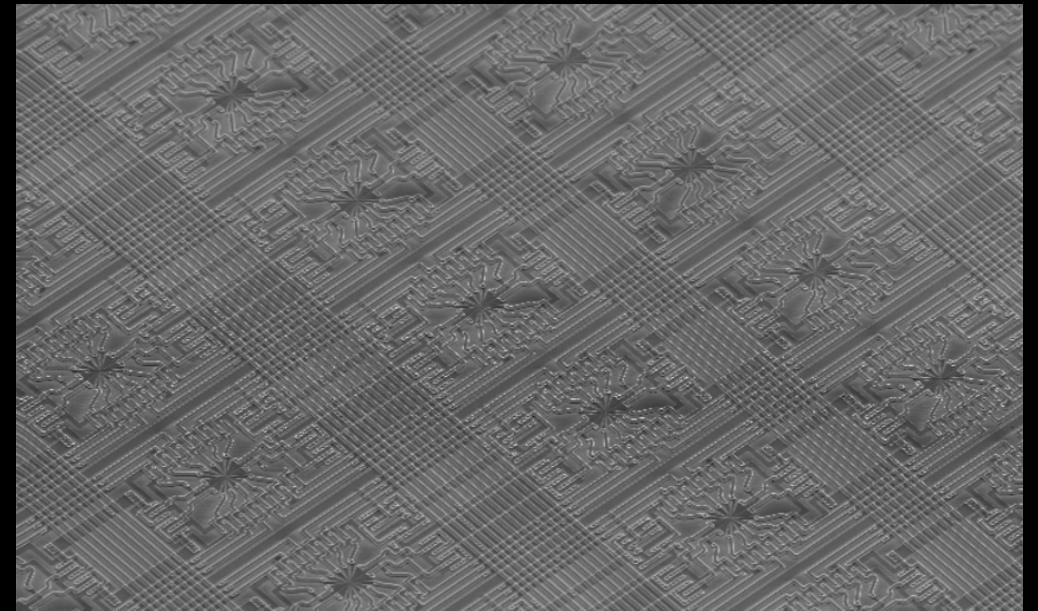
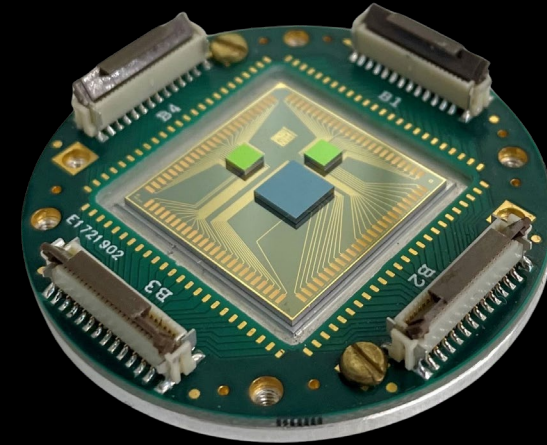
- Supercomputers
- Data centre
- AI Servers

AVAILABLE PRODUCTS

Cryo-optimized CMOS electronics

SemiQon delivers scalability and power efficiency to quantum computing and space applications with our cryo-optimized CMOS electronics.

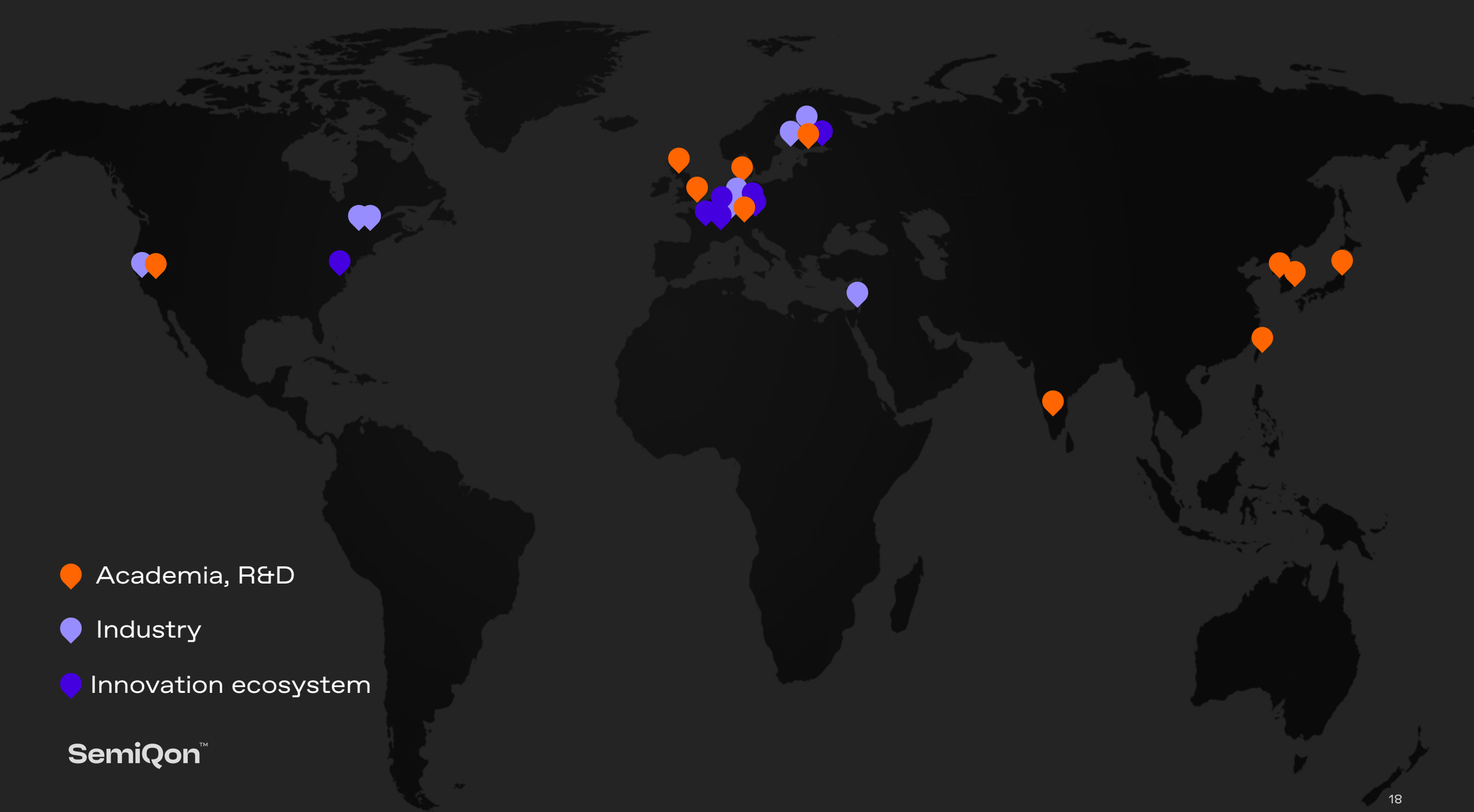
- High efficiency: $1,000 \times$ lower power consumption than traditional control electronics
- 30% infrastructure cost reduction for quantum hardware manufacturers
- Serves as multiple electronics functions: RF switch, Multiplexer/De-multiplexer, Amplifier, Basic logic blocks, Memory elements, Image sensor, Quantum-dots



Roadmap



Global network



- Academia, R&D
- Industry
- Innovation ecosystem

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