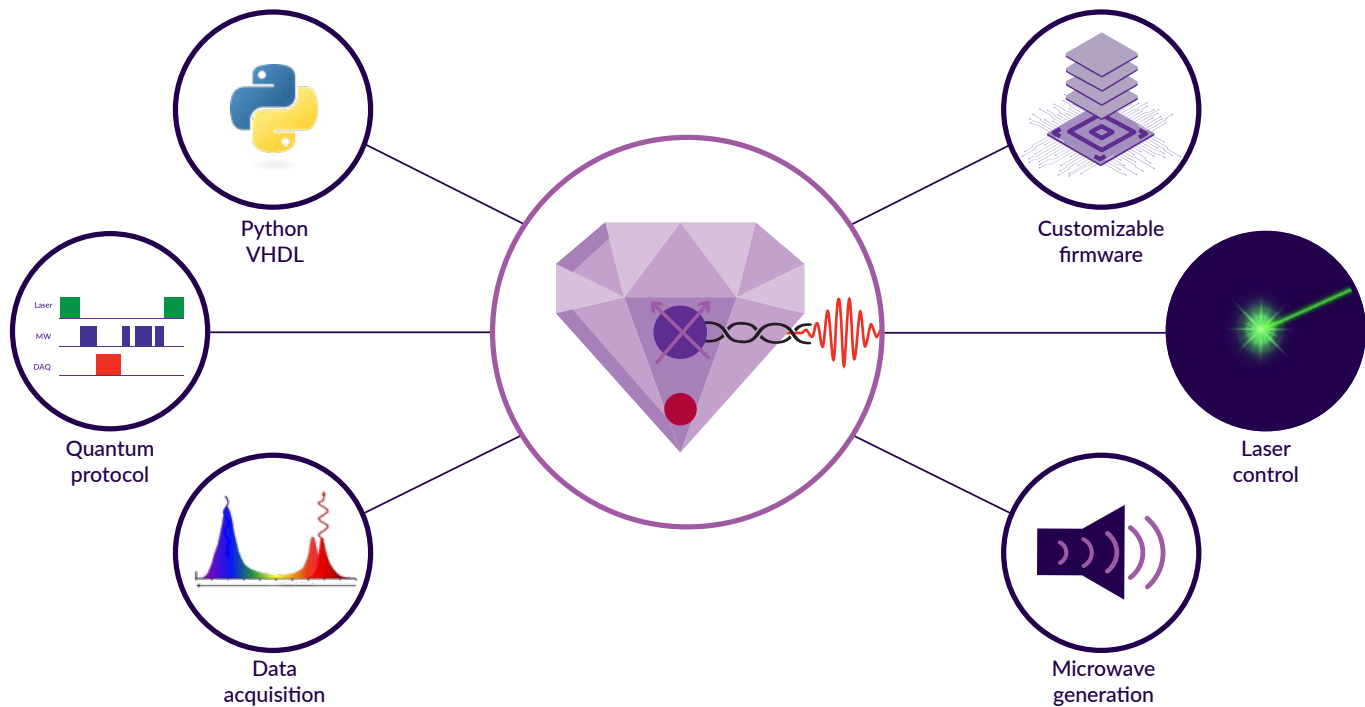




Advancing humanity.
Engineering remarkable.



NV Centers – at the Heart of Quantum

NV (nitrogen-vacancy) centers are defects in a diamond's crystal lattice. They exhibit unique quantum properties that make them ideal for high-precision magnetic field sensing, quantum computing, and quantum-enhanced imaging.

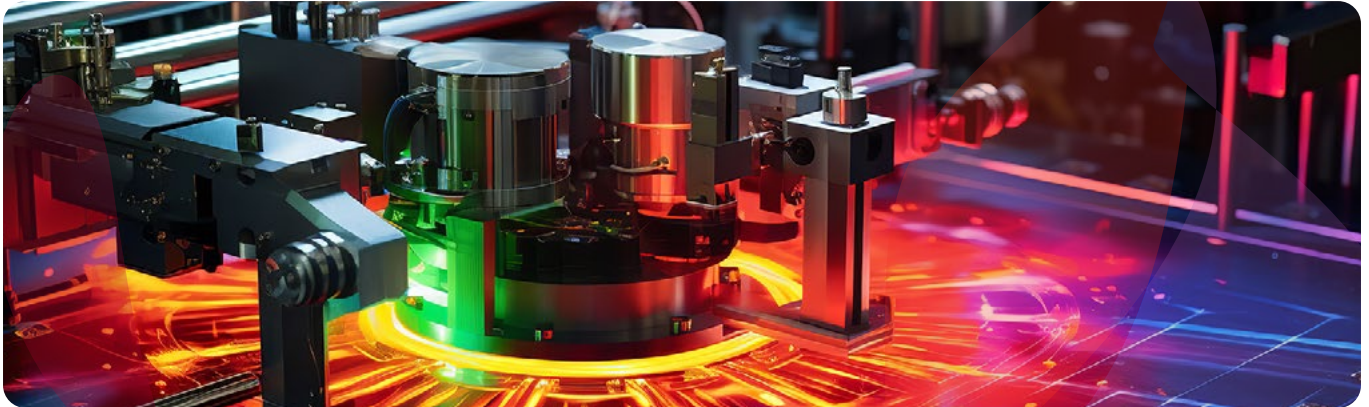
starQ – Solving Tomorrow's Challenges Today

A CE-certification pending NV control platform for quantum-classical systems. Built to run fast, scale wise, and stay yours.

Built for quantum-classical systems. starQ eliminates hardware integration headaches so you can hit demo and funding deadlines faster, scale into production with confidence, and retain complete control of your IP.

Benefits:

- Speed to Market: Hit demo and funding deadlines faster without building control stacks from scratch
- IP Protection: Keep complete control of your IP with clear separation and white-labeling options
- Signal Quality: Ultra-clean DDS microwave output with no harmonics or up-conversion artifacts
- Production-Ready: Scale from lab prototype to commercial product with CE certification support
- Integration Support: Comes with full documentation, APIs (Python, C++, VHDL), and commissioning assistance
- Proven Partner: Demonstrated success helping quantum startups secure grants and financing



Key Challenges



■ Too many modules, not enough integration



CE-certified all-in-one NV controller,
Integrated signal generation and acquisition

■ Signal distortion and delays



Real-time control and deterministic timing

■ No clear upgrade path from lab to product



Designed for scaling

■ Internal engineering bottlenecks



Comes with integration support,
built for customisation



starQ Functionalities & Specifications

Functionalities

- Sequence generation
- Synchronization of inputs & outputs
- 4 analog inputs, 4 analog outputs, 4 digital outputs, 4 digital inputs
- Real-time execution
- C++ and Python SW API

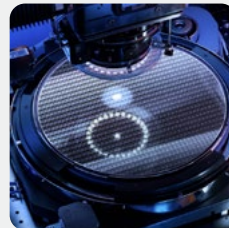
Specifications

- Analog outputs (RF generation): 10Gps, RF bandwidth DC-4GHz
- Analog inputs (Data Acquisition): 1Gps, bandwidth DC-0.4GHz
- Digital I/Os: TTL signal with level translator 3.3V/5V
- Timing resolution: 10ns
- Ethernet connection: 1Gb bandwidth

starQ Applications & Use Cases

Quantum Sensing

Magnetometry
Temperature Sensing
Electric Field Sensing
Qyroscope



Quantum Computing

Quantum Memory
Qubit Base

Biological Applications

Nanodiamond Sensors
Non-invasive Imaging

Quantum Metrology

High-Resolution Imaging
Atomic force microscope



Fundamental Physics

Quantum Entanglement and Decoherence Studies
Tests of Quantum Gravity



MRI and NMRI

Nanoscale MRI

Customization & Resources

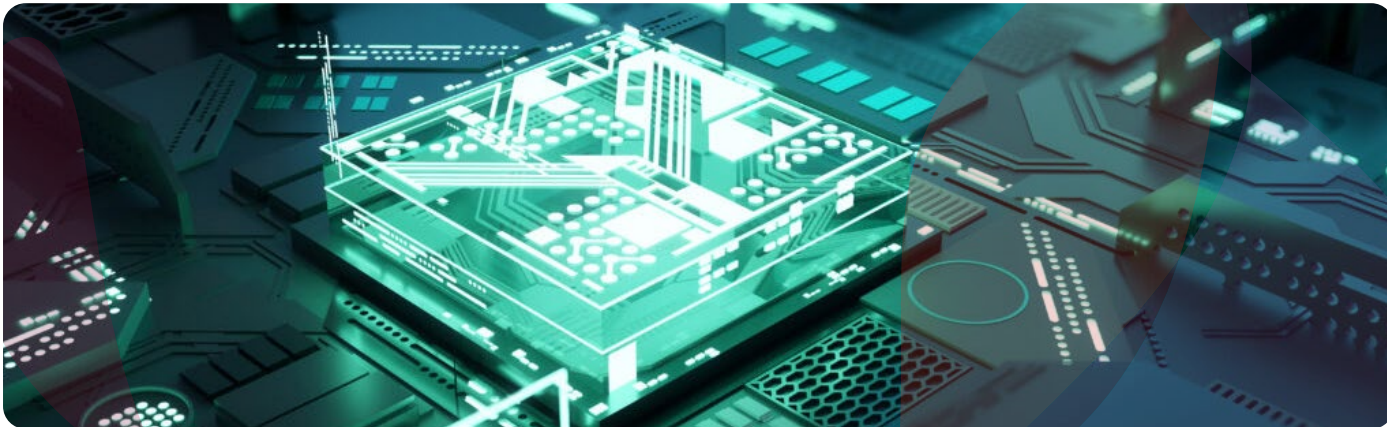
Tailored to Your Needs

- starQ offers flexible customization to meet unique application requirements, from custom firmware to white-labeling. Our team is ready to help you achieve the perfect fit for your project.
- Send us an email to quantum@cosylab.com to discuss how we can customize the right solution for you.



See starQ in action

- Explore how starQ powers a cutting-edge quantum gyroscope, enabling high-precision navigation in tight spaces. The innovative approach to control and synchronization highlights the potential of quantum technology in miniaturized, real-world applications.



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About Cosylab

Cosylab is the leading provider of cutting-edge expertise, turnkey software solutions, and electronics for the world's most advanced systems and devices, such as particle accelerators, large telescope arrays, fusion reactors, quantum technology, innovative medical devices and cancer therapy systems. Our turnkey software solutions enable organizations to make scientific breakthroughs, deliver state-of-the-art cancer treatments, develop healthcare innovations and bring clean fusion energy to the world.

We help organisations of all sizes and scopes accelerate development and shorten time-to-market with our unique end-to-end capabilities. Our solutions are integrated into the most significant Big Science international projects, including CERN and ITER, and transformative quantum initiatives. We provide software products and services to the largest medical device manufacturers and cancer centres worldwide, such as Varian and MGH. Our engineering expertise helps innovative medical start-ups get their medical devices to patients faster.

From our headquarters in the EU and subsidiaries across Europe, North America and Asia, we have worked on hundreds of multi-year and multi-people projects worldwide.

