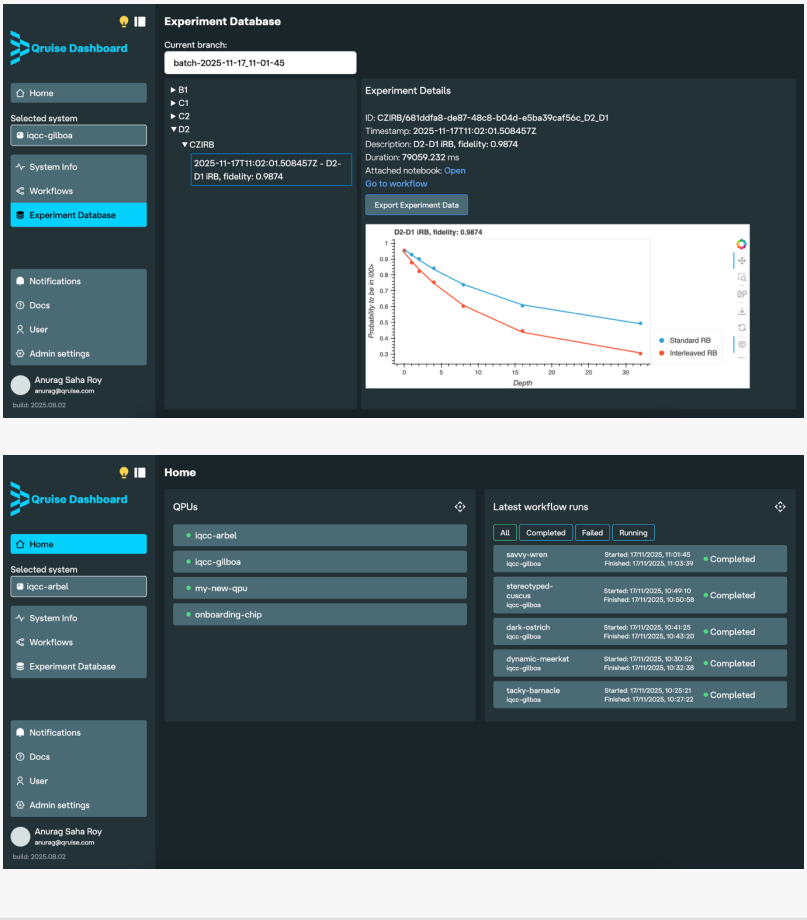
Qruise demonstrates automated bring-up workflows at IQCC using Quantum Machines' OPX1000

Proof-of-concept integration highlights automated calibration, data management, and hybrid quantum–classical control workflows in a multi-QPU testbed.



SAARBRüCKEN, GERMANY, April 21, 2026 /EINPresswire.com/ -- Qruise has completed a proof-of-concept integration of its automated bring-up software, QruiseOS, at the Israeli Quantum Computing Center (IQCC), where Quantum Machines' control systems underpin key elements of the control infrastructure. Built on Quantum Machines' OPX1000 and Quantum Orchestration Platform (QOP), this deployment supports automated bring-up workflows and advanced data management in a multi-user, multi-QPU environment. The setup combines a 21-qubit QuantWare Contralto QPU with the OPX1000 control stack, enabling real-time, low-latency hybrid control, both fully integrated through QruiseOS and installed for internal use by the IQCC team for multiplexed bring-up operations.

With this integration, Qruise and IQCC collaborated to explore automated calibration workflows of the Contralto QPU, including single-qubit bring-up followed by experiments such as CZ flux chevron, conditional phase and local phase optimisations, and interleaved randomised benchmarking. This reduced bring-up time to approximately 15 minutes – clear evidence of the impact of tightly integrated control and automation on accelerating quantum system readiness.

Additionally, more than 25 single- and two-qubit bring-up experiments have been configured

and executed in automated workflows for this setup, without any extra configuration. Each experiment features robust, fault-tolerant analysis and is fully integrated with the Qruise knowledge base, an advanced data management and experiment-tracking platform. The combination of an extensive set of bring-up experiments and robust automated workflows helps standardise and scale calibration processes across systems.

One advantage of QruiseOS is the reduction in manual effort required to manage routine calibration workflows. By automating experiment sequencing, scheduling, and data handling, QruiseOS helps streamline bring-up and maintenance tasks. Automated recalibration routines can be run on demand, on preset schedules, or triggered by QPU performance thresholds, supporting more structured and efficient operations for research teams.

“As we expand the IQCC testbed, we are proud to provide a platform where companies like Qruise can develop and validate their software on real, uncalibrated quantum systems, while benefiting from the support of our expert team,” said Nir Alfasi, General Manager at IQCC. “We continue to enhance our infrastructure and capabilities to enable a broader range of use cases and support the evolving needs of the quantum ecosystem.”

Quantum Machines emphasised the importance of integration-focused research in national testbeds as part of the broader transition toward hybrid quantum-classical architectures. “Testbeds like the IQCC are vital for advancing quantum research,” said Yonatan Cohen, CTO and co-founder of Quantum Machines. “Integrating control systems like the OPX1000 with automated software layers enables faster calibration cycles, more reproducible workflows, and ultimately more scalable quantum-classical operation.”

Qruise highlighted the operational value of automated workflows during ongoing testing. “The automated bring-up workflows have been tested for robustness through multiple cool-down and warm-up cycles at the IQCC,” noted Anurag Saha Roy, Chief Product Officer at Qruise. “QPU time is precious and we want to ensure minimal downtime after maintenance activities that can change the parameters of the QPU.”

Following this initial success, Qruise, Quantum Machines, and IQCC will continue to work together to refine automated workflows and ensure that quantum computing end-users have a seamless experience developing and benchmarking their algorithms across a broad range of quantum hardware at the IQCC testbed. This collaboration reflects the broader industry shift toward integrated quantum-classical stacks, where control, software, and hardware co-evolve to enable scalable quantum systems, and underscores the growing importance of open, hybrid architectures such as Quantum Machines’ Open Acceleration Stack.

About Qruise GmbH

Qruise is creating unique machine learning software to debug and reverse-engineer physical systems for R&D labs developing new devices. Their mission is to revolutionise physics-centric

R&D by providing virtual physicists to work alongside human physicists and engineers in labs developing cutting-edge technology, starting with quantum computers and magnetic resonance technologies. Learn more at qruise.com.

About Quantum Machines, Inc.

Quantum Machines is a global leading provider of quantum control solutions, driving the advancement of quantum computing with its hybrid control approach. By harmonising quantum and classical operations, hybrid control eliminates friction and optimises performance across hardware and software, enabling researchers and builders to iterate at speed, resolve setbacks, and bring visionary ideas to life. Quantum Machines' Orchestration Platform supports any type of quantum processor, empowering the industry to scale systems, accelerate breakthroughs, and push the boundaries – previously impossible. Learn more at quantum-machines.co.

About the Israeli Quantum Computing Center (IQCC)

The Israeli Quantum Computing Center is a national quantum research and development testbed that provides multi-vendor quantum hardware, access for academic and industrial users, and an environment for benchmarking, algorithm development, and hardware evaluation. The IQCC operates multiple quantum processors and advanced control systems, enabling researchers to explore different modalities of quantum computing within a unified infrastructure. The Center focuses on facilitating collaboration, accelerating quantum technologies, and expanding hands-on access to cutting-edge quantum systems.

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