



IQM and Deutsche Bahn Demonstrate Quantum Algorithm for Railway Scheduling on Real Operational Data

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- A hybrid quantum-classical algorithm, executed end to end on IQM hardware, produced feasible schedules with Deutsche Bahn, the German rail operator, using a real operational dataset of 190 trips across five German cities.
- The approach runs on today's hardware and is designed to improve automatically as quantum processors scale, offering enterprises a model for extracting value now, ahead of fault-tolerant computing.
- The collaboration reflects IQM's push into enterprise adoption. The company has sold 24 quantum computers worldwide and listed on the Nasdaq Global Select Market and Nasdaq Helsinki in July 2026 under the ticker IQMX.

MUNICH--(BUSINESS WIRE)--Jul. 20, 2026-- **IQM Quantum Computers (Nasdaq: IQMX)**, a global leader in full-stack superconducting quantum computers, today published the results of a research collaboration with Deutsche Bahn, Europe's largest rail operator, exploring how quantum computing can improve railway scheduling.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20260719172592/en/>



IQM's whitepaper on hybrid quantum optimization for railway scheduling, developed with Deutsche Bahn.

Using a real operational dataset from Deutsche Bahn, a schedule of 190 trips across five German cities translating into roughly 98,500 possible cycles, the two organizations

developed and tested a hybrid quantum-classical algorithm designed for enterprise-scale optimization problems.

As detailed in a published whitepaper [here](#), the IQM team applied the Quantum Approximate Optimization Algorithm (QAOA) in manageable stages, with the quantum component solving smaller subproblems within a classical framework that manages the problem at full scale. The architecture is built to generalize: the same approach can be applied to comparable optimization challenges in logistics, energy, manufacturing and other sectors.

Three results stand out:

It works on today's hardware. The approach delivered feasible, good-quality solutions without requiring hardware that does not yet exist. Enterprises can adopt this model now rather than waiting for fault-tolerant systems.

It improves automatically as hardware improves. Testing showed a statistically significant relationship between the size of the subproblem the quantum component could handle and the quality of the solution. As quantum processors scale, the same framework is expected to deliver better outcomes without redesign.

It ran end to end on IQM hardware. The full pipeline was executed on an IQM quantum computer, from problem formulation through to a usable result, establishing a baseline that enterprises and partners can build on.

"This collaboration shows that quantum computing is already capable of tackling the kind of large-scale, real-world optimization problems enterprises face every day," said Dr. Inés de Vega, Chief Scientist of IQM Quantum Computers. "Working with Deutsche Bahn on a problem of this complexity gives us a clear blueprint for how quantum computing delivers value now, while scaling naturally as hardware improves."

"Quantum computing is not going away. By tackling a real-world problem in a hybrid HPC and quantum computing environment, we have taken another step toward quantum advantage," said Manfred Rieck, Head of Quantum Technology at Deutsche Bahn.

This collaboration focused on planning under known, stable conditions. Many enterprises face a faster-moving version of the same challenge: responding to disruptions in real time, on timescales of minutes rather than hours. The researchers note that the same hybrid architecture could, in principle, be adapted to this more time-sensitive class of problem as quantum hardware improves, extending the approach further into operational decision-making.

The collaboration reflects IQM's focus on enterprise adoption of quantum computing through systems that customers own, operate and build on.

About IQM Quantum Computers

IQM Quantum Computers (Nasdaq: IQMX) is a global leader in superconducting quantum computers, delivering full-stack quantum systems and cloud platform access to enterprises, research institutions, universities, high-performance computing centers and national laboratories worldwide. IQM's on-premises deployment model gives customers direct ownership and control of their quantum infrastructure. Founded in 2018 and headquartered in Finland, with major operations in Munich, IQM employs over 400

people and operates across Europe, Asia and North America. IQM is the first publicly listed European quantum company on the Nasdaq Stock Market.

About Deutsche Bahn

Deutsche Bahn AG is one of the world's largest transport and logistics companies, headquartered in Berlin. With around 230,000 employees and operations in more than 130 countries, DB is Germany's primary rail operator for both passengers and freight. DB Systel GmbH, its technology subsidiary, is responsible for the group's digital and IT infrastructure, including the operational decision-support systems used across the network.

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