

Airbus and BMW Group launch Quantum Computing Competition to tackle their most pressing mobility challenges

Submissions from students, researchers and professional experts in Quantum Technologies are welcomed through April 30, 2024

[@Airbus](#) [@BMWGroup](#) [@QuantumDaily](#) [#QuantumTechnologies](#)

Santa Clara (CA), 6 December 2023 - Airbus and BMW Group launch a global Quantum Computing Challenge entitled "The Quantum Mobility Quest" to tackle the most pressing challenges in aviation and automotive that have remained insurmountable for classical computers.

This challenge is the first-of-its-kind, bringing together two global industry leaders to harness quantum technologies for real-world industrial applications, unlocking the potential to forge more efficient, sustainable and safer solutions for the future of transportation.

"This is the perfect time to shine a spotlight on quantum technology and its potential impact on our society. Partnering with an industry leader like BMW Group enables us to mature the technology as we need to bridge the gap between scientific exploration and its potential applications. We're seeking the best-in-class students, PhDs, academics, researchers, startups, companies, or professionals in the field, worldwide to join our challenge to create a massive paradigm shift in the way aircraft are built and flown." says Isabell Gradert, Vice President Central Research and Technology at Airbus.

"Following the success of previous editions of Quantum Computing Challenges by BMW Group and Airbus, we are gearing up for a new wave of innovation, exploring the technology capabilities for sustainability and operational excellence." said Dr. Peter Lehnert, Vice-President, Research Technologies at BMW Group. "The BMW Group is clearly aiming at positioning itself at the crossroads of quantum technology, the global ecosystem, and cutting-edge solutions. By doing so, we strongly believe in major advances when it comes to sustainable materials for batteries and fuel cells, to generate unique and efficient designs, or to enhance the overall user experience in the BMW Group Products".

Quantum computing has the potential to significantly enhance computational power and to enable the most complex operations that challenge even today's best computers. In particular, for data-driven industries like the transportation sector, this emerging technology could play a crucial role in simulating various industrial and operational processes, opening up opportunities to shape future mobility products and services.

Challenge candidates are invited to select one or more problem statements: improved aerodynamics design with quantum solvers, future automated mobility with quantum machine learning, more sustainable supply chain with quantum optimisation, and enhanced corrosion

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inhibition with quantum simulation. Additionally, candidates can put forward their own quantum technologies with the potential to develop native apps yet to be explored in the transportation sector.

The challenge is hosted by The Quantum Insider (TQI) and divided into two parts, a four-month phase where participants will develop a theoretical framework for one of the given statements, and a second phase during which selected finalists will implement and benchmark their solutions. Amazon Web Services (AWS) provides candidates with an opportunity to run their algorithms on their Amazon Braket quantum computing service.

A jury composed of world-leading quantum experts will team up with experts from Airbus, BMW Group, and AWS to evaluate submitted proposals and award one winning-team with a €30,000 prize in each of the five challenges, by the end of 2024.

Registration opens today, and submissions will be accepted from mid-January through April 30, 2024 here: www.thequantuminsider.com/quantum-challenge.

Note to editors:

List of challenges

1. Smart Coating - Investigating Quantum Computing for Corrosion Inhibition
2. Quantum-Powered Logistics - Towards an Efficient and Sustainable Supply Chain
3. Quantum-Enhanced Autonomy - Augmenting Generative AI for Critical Test Scenario Images
4. Quantum Solvers - Predictive Aeroacoustic & Aerodynamic Modeling
5. The Golden App - Pushing the Boundaries of Quantum Tech for Mobility

Click [here](#) to learn more about the maturation of quantum technologies at Airbus.

About BMW Group - www.bmwgroup.com

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises over 30 production sites worldwide; the company has a global sales network in more than 140 countries. In 2022, the BMW Group sold nearly 2.4 million passenger vehicles and more than 202,000 motorcycles worldwide. The profit before tax in the financial year 2022 was € 23.5 billion on revenues amounting to € 142.6 billion. As of 31 December 2022, the BMW Group

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had a workforce of 149,475 employees. The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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