

## Yonsei Deploys First IBM Quantum System One in the Republic of Korea

- Second university in the world to install an on-premises, utility-scale IBM Quantum System One

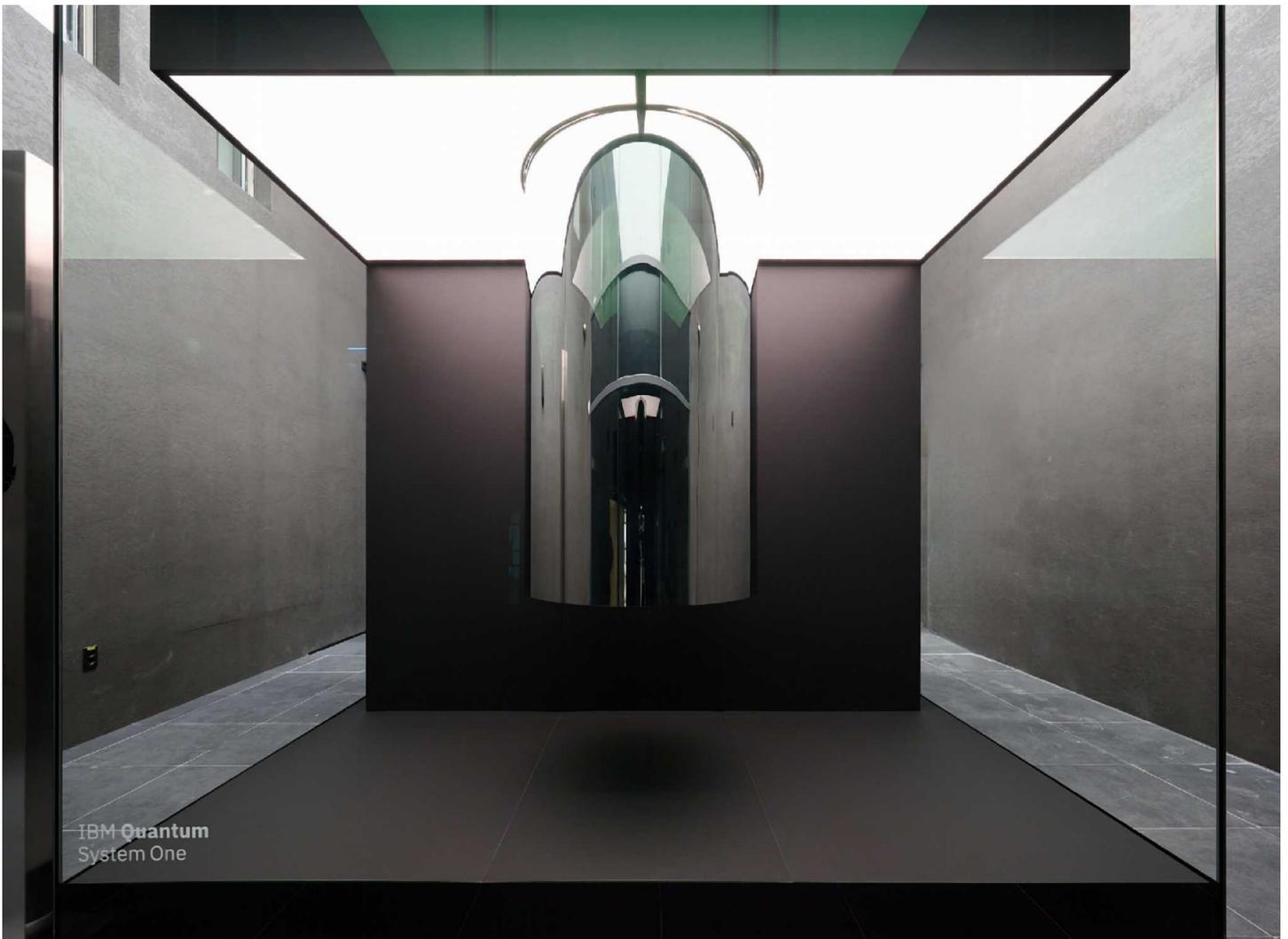
- Now online, the quantum system, powered by a 127-qubit IBM Quantum Eagle processor, will support the university's aim to build an innovative research and industry ecosystem as a quantum technology hub



Today, Yonsei University and IBM (NYSE:[IBM](#)) deployed the first IBM Quantum System One in the Republic of Korea, which is only the second such system located on a university campus in the world. The IBM Quantum System One at Yonsei's Songdo International Campus Quantum Computing Center is intended to provide opportunities to research and utilize quantum computing for the university, as well as for other academic institutions, companies, and organizations in Korea that collaborate with Yonsei.

"By installing the first IBM Quantum System One in the Republic of Korea, Yonsei has laid a solid foundation for world-class research and education in quantum computing and advanced biology," said Dong-Sup Yoon, president of Yonsei University. "We will actively attract outstanding quantum researchers, work closely with the world's leading quantum research institutions to create innovative research outcomes, and strive to achieve our common goal of improving the quality of human life."

The IBM Quantum System One at Yonsei University is now part of IBM's global fleet of utility-scale quantum computers available via the cloud and the fifth, globally, at dedicated sites, including systems in the United States, Canada, Germany and Japan. It is powered by a 127-qubit IBM Quantum Eagle processor to offer Yonsei's network of researchers, students, organizations and partners dedicated access to a utility-scale quantum computer.



*(Credit: IBM)*

In 2023, IBM demonstrated the ability of IBM Eagle to produce accurate calculations beyond classical, brute-force simulation methods. Known as quantum utility, this signaled the start of an era in which quantum systems can serve as scientific tools to explore problems in chemistry, physics, materials, and other fields in the search for quantum advantage: when quantum computation delivers a significant, practical benefit beyond either brute force or approximate classical computing methods, calculating solutions in a way that is cheaper, faster or more accurate than all known classical alternatives.

“We are pleased to have collaborated with Yonsei University to bring a utility-scale quantum computer to the Republic of Korea. We look forward to enabling more research institutions, organizations, companies, and talent across the country to push the boundaries of quantum algorithms that can explore scientific and business value. Additionally, the IBM Quantum System One in Korea will serve as an important foundation for the development of future quantum talent and the expansion of the region’s quantum ecosystem,” said Jay Gambetta, Vice President, IBM Quantum.

In March 2025, Yonsei will host an opening ceremony of the Quantum Computing Complex at the Songdo International Campus’s Quantum Research facility housing the IBM Quantum System One, in celebration of the university’s 140th anniversary, and the UNESCO International Year of Quantum Science and Technology.

The Songdo International Campus is a central hub of the National Advanced Strategic Industrial Complex in the biotech sector. Yonsei is working with the Incheon Metropolitan City to build the world’s first quantum-bio convergence high-tech industrial

cluster. As part of this cluster's development, in July, 2024, Yonsei and IBM signed a memorandum of understanding (MOU) to collaborate on a [Bio-Quantum Initiative](#) as part of the two organizations' efforts to develop the country's quantum ecosystem.

Yonsei has also established a Quantum Computing Project Team, which includes the Quantum Ecosystem Operation Center, the Quantum Computing Technology Support Center, and the Quantum Computing Center to promote quantum research and ecosystem development. The team plans to enhance Yonsei's research facilities to attract global partners, with support from IBM resources for the development of quantum algorithms and advisement on technical projects, and the development of education and materials to foster quantum talent, including workshops, seminars, and conferences to encourage knowledge exchange and contribute to the development of quantum technology.

"As the quantum computing field is expected to grow by more than [\\$5.5 billion](#) from 2023 to 2030, we aim to promote 'quantum literacy' across industries and provide a foundation for win-win cooperation by building an ecosystem for joint utilization of the first quantum computer in Korea," said Jaeho Cheong, head of Yonsei's Quantum Computing Project Team. "We invite various organizations such as government agencies, municipalities, research institutes, universities, companies, hospitals, etc. that are preparing to utilize quantum computing in the future, and organizations interested in research cooperation to contact us at any time."

### **About Yonsei University**

Yonsei University, founded in 1885, is one of Korea's leading private universities, renowned for its excellence in education and research. Located in the heart of Seoul, its campus blends modern facilities with a rich tradition, attracting outstanding students and faculty from around the world. The university excels across various academic disciplines and is committed to building a strong international academic network. With a focus on innovative research, Yonsei contributes to societal development and offers diverse programs aimed at nurturing global leaders. Guided by the principles of "Truth, Freedom, and Service," Yonsei is a prominent global institution in higher education. Visit [yonsei.ac.kr](http://yonsei.ac.kr) for more information.

### **About IBM**

IBM is a leading provider of global hybrid cloud and AI, and consulting expertise. We help clients in more than 175 countries capitalize on insights from their data, streamline business processes, reduce costs and gain the competitive edge in their industries. More than 4,000 government and corporate entities in critical infrastructure areas such as financial services, telecommunications and healthcare rely on IBM's hybrid cloud platform and Red Hat OpenShift to affect their digital transformations quickly, efficiently and securely. IBM's breakthrough innovations in AI, quantum computing, industry-specific cloud solutions and consulting deliver open and flexible options to our clients. All of this is backed by IBM's long-standing commitment to trust, transparency, responsibility, inclusivity and service. Visit [www.ibm.com](http://www.ibm.com) for more information.

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