

## The University of Tokyo Completes Installation of 127-Qubit IBM Quantum Eagle Processor

Quantum Innovation Initiative Consortium members to have access to region's first utility-scale IBM Quantum System One for research interests, including bioinformatics, materials science, and finance



TOKYO, JAPAN, Nov. 27, 2023 -- Today, the University of Tokyo (UTokyo) and IBM (NYSE:[IBM](#)) have announced the deployment of a 127-qubit IBM Quantum Eagle processor, now operational in Japan's first IBM [Quantum System One](#). Scientists at institutions participating in the Quantum Innovation Initiative ([QII](#)) Consortium intend to put the system's new processor toward quantum research in bioinformatics, high energy physics, materials science, and finance, among other disciplines.

The 127-qubit IBM Quantum Eagle is the region's first utility-scale processor. IBM defines 'utility-scale,' as the point at which quantum computers could serve as scientific tools to explore a new scale of problems. In June of this year, IBM and UC Berkeley scientists [published research](#) in the scientific journal *Nature* which demonstrated for the first time that quantum computers can produce results at a scale of more than 100 qubits reaching beyond leading classical approaches.



“For the first time outside North America, a quantum computer with a 127-qubit processor is now available for exclusive use with QII members,” said Hiroaki Aihara, Executive Vice President, UTokyo. “The limit of what can be simulated by a supercomputer is about 50 qubits, and it is possible to perform large-scale and complex calculations that would be impossible without a quantum computer. By promoting research in a wide range of fields and realizing social implementation of quantum-related technologies, we aim to make a broad contribution to a future society with diversity and hope.”

### **Leading utility-scale research in Japan**

Since joining the IBM Quantum Network in 2019, UTokyo has continued to expand access to quantum computing in Japan. The aim of the Japan-IBM Quantum Partnership initiative, which announced inclusion of the QII Consortium in 2020, is to accelerate the collaboration between industry, academia, and government to advance Japan's leadership in quantum science, business, and education.

Now with a utility-scale IBM Quantum System One using more powerful quantum technology, including advanced hardware and tools to explore how error mitigation can enable accuracy, UTokyo also joins other pioneering organizations and universities as part of IBM's recently established working groups to advance the value of quantum computing, including: Healthcare and Life Sciences — where UTokyo and QII member scientists will conduct exploratory research in bioinformatics — High Energy Physics, Materials, and Optimization.

“By equipping UTokyo with a utility-scale IBM Quantum System One, we are excited to collaborate with QII Consortium organizations on the problems which we anticipate will push the limits of today's quantum systems and begin to extract scientific and business value,” said Jay Gambetta, IBM Fellow and Vice President, IBM Quantum.

## About the University of Tokyo

The University of Tokyo is Japan's leading university and one of the world's top research universities. The vast research output of some 6,000 researchers is published in the world's top journals across the arts and sciences. Our vibrant student body of around 15,000 undergraduate and 15,000 graduate students includes over 4,000 international students.

Find out more at [www.u-tokyo.ac.jp/en/](http://www.u-tokyo.ac.jp/en/)

## About IBM

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