ABCI-Q

Hybrid Quantum-HPC Platform for Real-World Use

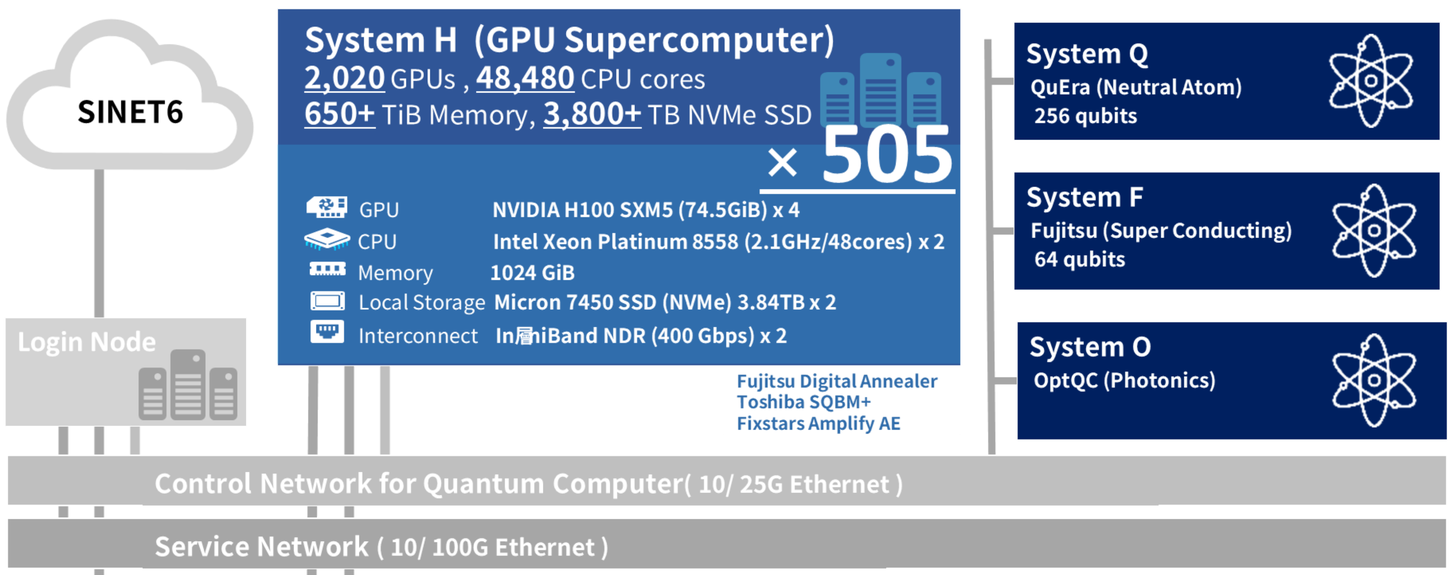
What you can do
- **Experiment with various quantum technologies**
- **Combine quantum computers with large-scale HPC**

Impact/ What this enables
- **Creation of real-world use cases**
- **Practical deployment of quantum technologies**

***Global Access** available in FY2026.*

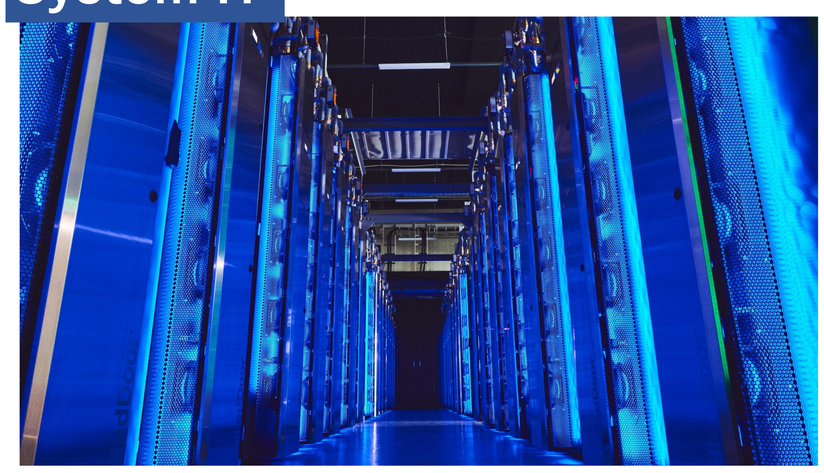
Overview

- A cutting-edge. **Quantum-Classical Hybrid Computing Infrastructure**
- Centered on a large scale HPC system (System H) equipped with 2,020 state-of-the-art NVIDIA GPUs, enabling the flexible use of various quantum computers (QC) depending on the application
- **Gateway to QC**
  - -Neutral Atom QC; Installed!
  - -Superconducting QC; Installed!
  - -Optical QC; available in FY2026
- **Software / Middleware Standardization**
- **Ising Machine, AI, Classical Solvers**, etc



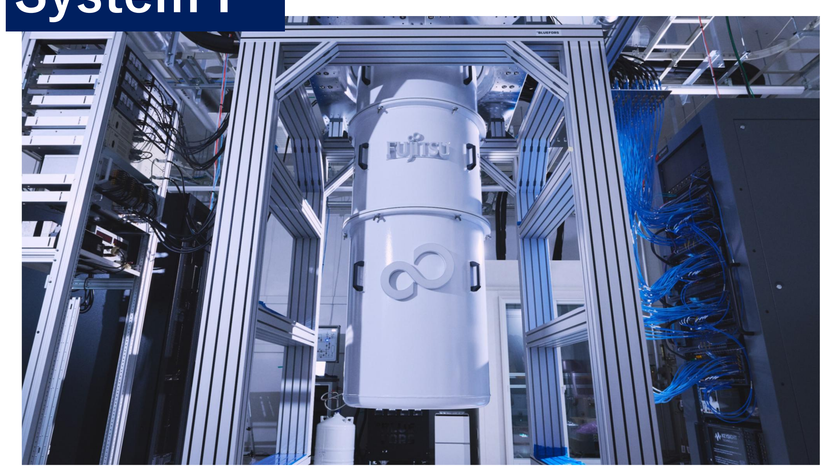
Brief Specification

System H



- **Double precision: 138.4 PFLOPS** (FP64)
- **Half precision: 2.1 EFLOPS for AI training/ interface** (#27 on TOP500 released in June 2025)

System F



- **Super-conducting QC**
- **64 physical qubits**

System Q

- **Neutral Atom QC (Gemini Model)**
- **260 physical qubits implemented with rubidium-87 atoms**

System O

- **Optical QC available in FY 2026**

G-QuAT
Global Research and Development Center for Business by Quantum-AI Technology (G-QuAT), AIST
Contact: M-G-QuAT-plan-ml@aist.go.jp
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