

# Opening Remarks from Japan

## - workshop objectives, Joint Call objectives -

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The 3rd term Cross-Ministerial Strategic Innovation Promotion Program (SIP) for  
Quantum Technologies

Secretariat of Science, Technology and Innovation

Cabinet Office

# 1. Japan's National Quantum Strategies

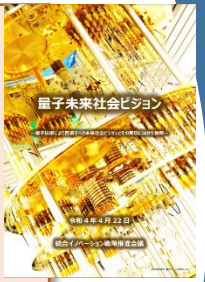
Three National Strategies have been established in 2020, 2022 and 2023.

## Research

**Quantum Technology and Innovation Strategy**  
Established in January 2020  
Revision in April 2022

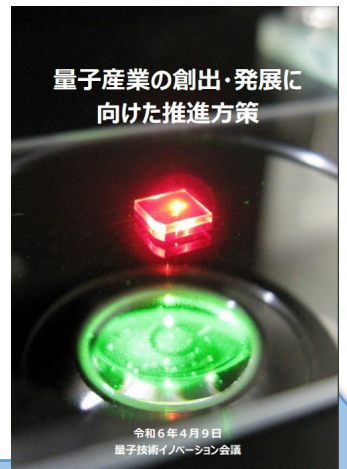
## Vision

**Vision of Quantum Future Society**  
Established in April 2022



## Industry

**Strategy of Quantum Future Industry Development**  
Established in April 2023



**Promotion Measures**  
Reported in April 2024

## Goals by 2030

**10 million quantum technology users in Japan**



**Through quantum technology, production to 50 trillion Yen**

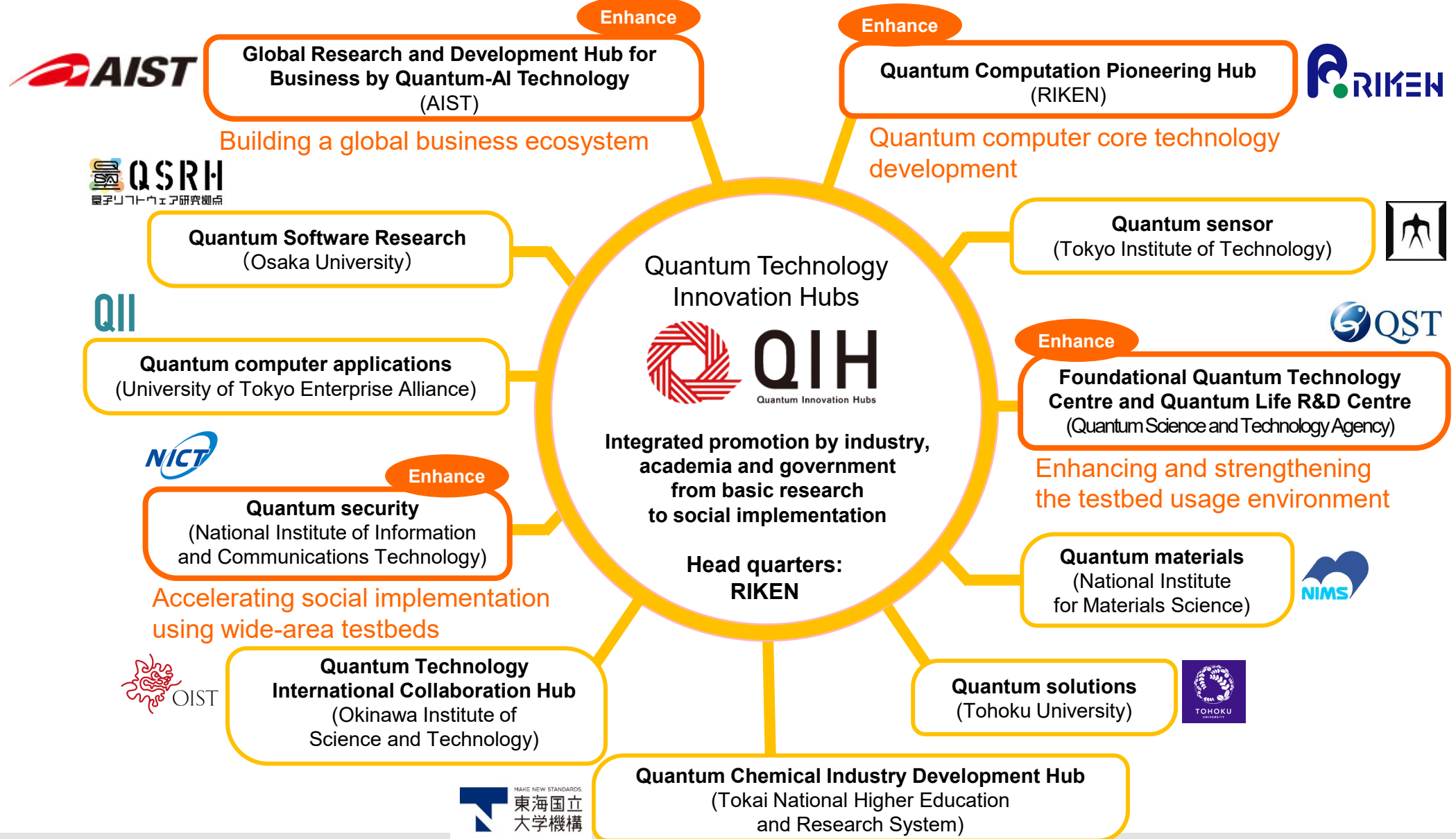


**Fostering quantum unicorn companies to create future markets**



**Global collaboration is so important for achievement of these goals**

# 1. Japan's National Quantum Strategies: Quantum Technology Innovation Hub



## 2. Global Research and Development Center for Business by Quantum-AI Technology (G-QuAT) in AIST

- A global R&D center, G-QuAT, as an international hub for business development of QT was set up at AIST on July 2023.
- METI strongly supports the activities of G-QuAT by imposing budgets, **32 billion yen at 2022FY, 30 billion yen at 2023FY**, etc..



### ○Activity Overview

- **Use case creation** by utilizing advanced computing technology with quantum computers.
- Provision of facilities to industry for **prototyping quantum devices** and **evaluating components of QC in extra low-temperature environments**
- Industrial talent development

### ○International Activity

- **MOUs** including the QT between **NIST (US), NRC (Canada), KRISS (Korea), IBM(US), Keysight(US)**
- **International advisory board** (8 member including 6 oversea member)

### G-QuAT main buildings

(scheduled for completion in March 2025.)



# 3. The 3rd term Cross-Ministerial Strategic Innovation Promotion Program (SIP) for Quantum Technologies

Prompting R&D in a consistent manner from basic research to social implementation.

Quantum computing	Quantum security/network	Quantum sensing	Innovation Platform
<p><b><u>Testbed</u></b> Quantum-classical hybrid computing</p>	<p><b><u>Infrastructure using quantum secure cloud</u></b> Development and performance demonstration of next-gen. cryptography platform, etc.</p>	<p><b><u>Usage/test/evaluation environment</u></b> Accessible environment for usage, test and environment for quantum materials and devices.</p>	<p><b><u>Startup creation &amp; support</u></b> Creating new start-up companies through new market development.</p>
<p><b><u>Use case development</u></b> Drug discovery, finance, delivery, traffic, energy, etc.</p>	<p><b><u>Use case development</u></b> Development and demonstration in specific user industry area, i.e. finance, medical/biotech., factory and mobility.</p>	<p><b><u>Use case development</u></b> Creating and demonstration of use case, i.e. heals care/medical, energy, etc., using quantum sensors</p>	<p><b><u>Education program</u></b> Developing and producing education programs for young talents in various area</p>
<p><b><u>Benchmark · Standard</u></b> Hardware performance, application level, ROI, Carbon neutrality, etc.</p>	<p><b><u>Secure calculation, etc.</u></b> Enhancement and demonstration of secure calculation/analysis with protecting privacy.</p>	<p><b><u>Building a space-time business platform</u></b> Realization of high-precision positioning and ultra-high-speed communication by optical lattice clocks</p>	<p><b><u>Idea discovery</u></b> Developing new products and services through hackathon, etc.</p>
<p><b><u>Roadmap</u></b> Supply chain of quantum computer, i.e. components, instruments and cryogenic, etc.</p>			<p><b><u>Build-up Ecosystem</u></b> Promoting new business by matching both stakeholders holding needs and seeds.</p>

## Quantum computing

### Testbed

Quantum-classical hybrid computing

### **Research Theme A-1a (presented by AIST as oral and Poster)**

Research and development of quantum/classical hybrid basic algorithm construction and testbed utilization environment

### **Research Theme A-1b**

Building and operation of a domestically developed quantum computer testbed environment

### Use case development

Drug discovery, finance, delivery, traffic, energy, etc.

### **Research Theme A-2a**

Development of quantum computer calculation system for high-precision material R&D

### **Research Theme A-2b (presented by Q-STAR as oral and AIST, KDDI, Chodai as Poster)**

Strategic initiatives to build a business ecosystem with quantum computing solutions

### Benchmark·Standard

Hardware performance, application level, ROI, Carbon neutrality, etc.

### **Research Theme A-3 (presented by QunaSys as oral and Fixstars Amplify as Poster)**

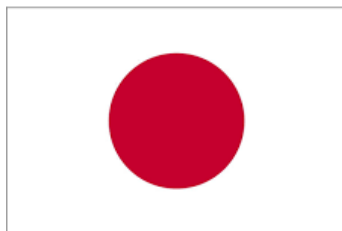
Development of quantum algorithm Platform through establishment of standard benchmarks and global challenges

### Roadmap

Supply chain of quantum computer, i.e. components, instruments and cryogenic, etc.

### **Research Theme A-4 (presented by AIST as oral and Poster)**

A technology overview and roadmap for large-scale quantum computer systems and their supply chain resilience



**EuroHPC**  
Joint Undertaking

Finding common issues between Japan and the EU and working together to solve them.

- **Classical-quantum computing platform**  
*Mutual use of diverse computing resources between Japan and the EU*
- **Industry-level global use-case**  
*Collaborative use-case development and benchmarking*
- **Industry-level next-generation quantum computer**  
*Supply chain resilience and social security*