

# 量子コンピュータ産業化と国際情勢

## Quantum Computer Industrialization and International Trends

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### 概要

大規模な量子コンピュータを実現するためには、これまでのラボレベルの延長での量子コンピュータシステム開発では、性能、コスト、消費電力や品質保証など様々な点で限界があり、また、ごく限られたサプライヤーに依存した部素材の調達は、昨今の経済安全保障の観点からも量子コンピュータの産業化において世界的な課題となっている。本セッションでは、今後の量子コンピュータの進化と昨今の国際情勢を紹介する。

<p><b>Global Collaboration</b></p> <ul style="list-style-type: none"> <li>✓ Collaboration with global stakeholders by leveraging Japan's strengths (win-win relationship formation)</li> </ul>   <p>グローバル戦略を説(2024.6.26)</p>	<p><b>Linkage with Government Strategy</b></p> <ul style="list-style-type: none"> <li>✓ Role as an implementation tool for government strategies and policies</li> <li>✓ Play a role in social implementation of SIP quantum computers</li> </ul>   <p>産総研と米NISTとの協力の覚書の署名を日米首脳共同声明で言及</p>
<p><b>Industry Creation Support</b></p> <ul style="list-style-type: none"> <li>✓ Computational Resources for Use Case Creation</li> <li>✓ Trial Quantum Classical Environment</li> <li>✓ Support functions for next-generation machine development (prototypes and systems)</li> </ul>  	<p><b>Supply Chain Industrialization</b></p> <ul style="list-style-type: none"> <li>✓ Establishment of Supplier Support Frame (NEDO Leading Project)</li> <li>✓ Joint development of parts and equipment for next-generation machines</li> </ul>
<p><b>Intelligence Function</b></p> <ul style="list-style-type: none"> <li>✓ Research on government strategies and industry trends in various countries</li> <li>✓ Collection and analysis of press releases, articles, information on intellectual property and investment status, etc.</li> </ul> 	<p><b>Intellectual Property/Standardization</b></p> <ul style="list-style-type: none"> <li>✓ Central role in ISO/IEC JTC-3</li> <li>✓ Also supports standardization of peripheral technologies</li> <li>✓ Securing intellectual property for elemental technologies</li> </ul>   <p>The 1st ISO/IEC JTC3 Plenary meeting (Soeul, South Korea) May 28-30, 2024</p>

### ☒ G-QuAT Strategic Activity

### Abstract

To realize a large-scale quantum computer, the development of quantum computer systems as an extension of the conventional laboratory level has limitations in various aspects such as performance, cost, power consumption, and quality assurance. Recently, in the industrialization of quantum computers, material procurement, which depends on a very limited number of suppliers, has become a global issue from the viewpoint of economic security. In this session, we will introduce the future development of quantum computers and the recent international situation.