Development of quantum repeater utilizing cavity QED （Nanofiber Quantum Technologies, Inc.）

City	Year of Establishment	Founder	Website
Shinjyuku, Tokyo	2023	Masashi Hirose Takao Aoki Akihisa Goban	https://www.nano-qt.com/

Partner VC	Latest round of Fundraising	Valuation
Waseda University Ventures	Non-Disclosure	Non-Disclosure

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○ Business Plan

Quantum network combines quantum computing and communication. This project develops core technology, quantum repeaters, using a unique method to set global standards.

○ Research Outline

This project aims to implement foundational technology for an optical fiber network with absolute security, different from existing information and communication systems, by developing quantum repeaters using cavity QED. To achieve this goal, the following development items are undertaken:

1. Manufacturing of low-loss nano-fiber resonators in the communication wavelength band
2. Development of Yb atom arrays trapped near nano-fiber resonators
3. Implementation of logic gate operations in the communication wavelength band
4. Research on business strategy, regulations, and standardization activities

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2023～2025FY	JPY 492 million	United States (California/ Maryland State)

○International collaborative technology demonstration

・Contract with local partners

NanoQT Inc.: Conducting site surveys and feasibility studies on the U.S. market environment and technology demonstrations.

University of Maryland: Exploring applications of quantum networks using quantum repeaters and detailed examination of small-scale quantum networks using Yb cavity QED systems.

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