

Development of long-distance quantum communication system and market creation (LQUOM, Inc.)



City	Year of Establishment	Founder
Yokohama-shi, Kanagawa	2020	Kazuya Niizeki

Partner VC	Latest round of Fundraising	Valuation
SBI Investment Co., Ltd.	Series A	JPY 1,800 million

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○ Business Plan

LQUOM, named after Long-Distance Quantum Communication, develops hardware for "quantum repeater systems" necessary for long-distance quantum communication. Quantum key distribution is a well-known application of quantum communication. The highest communication security based on information theory makes it possible to prepare for the "Harvest now, decrypt later" cyberattacks (holding the ciphertext until future improvements in computing power). The quantum repeater system we are developing can generate "quantum entangled states," which will enable applications other than key distribution, such as quantum teleportation and world clocks, and will be extended to a network that can be called the quantum Internet.

Aiming for such technological innovation, LQUOM will continue to develop long-distance quantum communication hardware day by day, with a group of physicists specializing in cutting-edge technologies such as quantum mechanics and optics at the core.

○ Research Outline

In this R&D, we will develop the two-photon source toward the entanglement generation, quantum memory, and interface technologies based on the research results we have cultivated so far. These are essential elemental technologies for the development of quantum repeater products. At the same time, we will conduct global market research and customer development using the two-photon sources as initial products.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2023～2025FY	JPY 402 million	—