

Roadmap to Quantum Network

For the key technologies in the previous section, NICT has compiled a roadmap for the period from 2020 to 2035. The roadmap for R&D of terrestrial and satellite QKD networks is shown in Fig. 12.

The roadmap for R&D of quantum networks is shown in Fig. 13.

Promotion Strategy

A promotion strategy will be important for NICT to develop QKD networks and quantum networks in society in cooperation with external stakeholders.

In order to deploy quantum networks in society, it is necessary to promote five initiatives in an integrated manner:

- ① Research and development
- ② Social implementation
- ③ International cooperation
- ④ System design
- ⑤ Human resource development

Conclusion and Next Step

With regard to quantum networks, work on the social implementation of QKD and research and development for the Quantum

Internet are underway internationally. NICT will collaborate with experts, companies, universities, and research institutions in Japan and overseas to promote the use of quantum networks in society.

NICT will update the Quantum Network White Paper based on future international trends and the latest R&D.

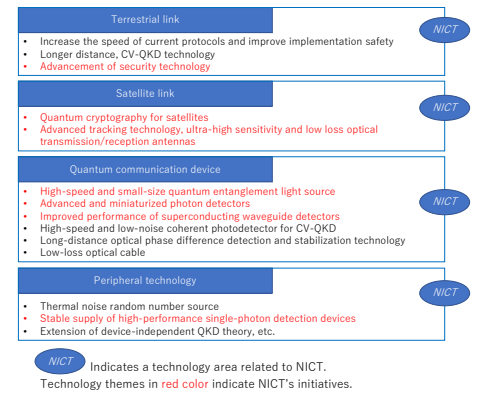


Fig. 8 : Quantum communication and cryptographic link technologies

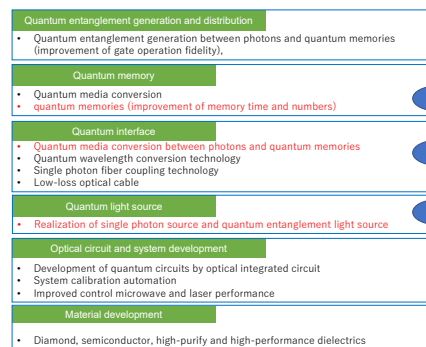


Fig. 9 : Quantum network technologies

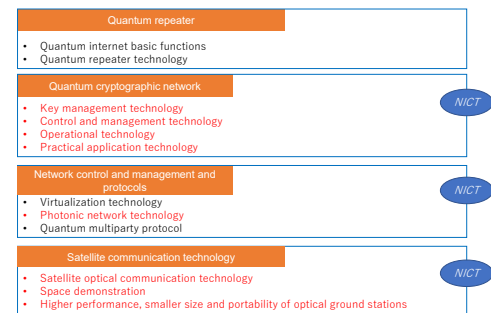


Fig. 10 : Networking technologies

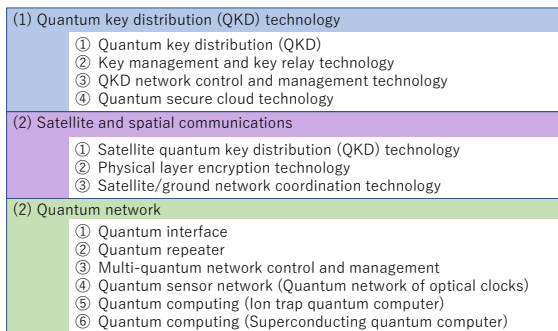


Fig. 11 : R&D Initiatives at NICT

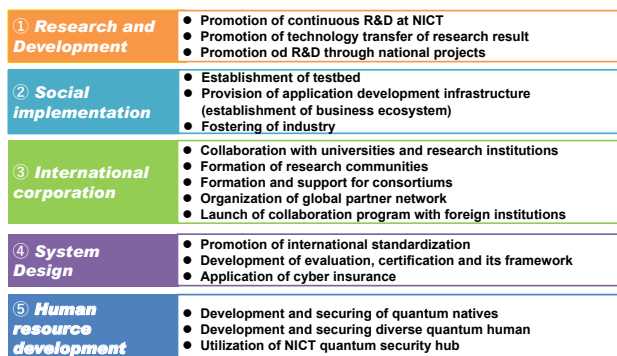


Fig. 14 : Promotion strategy

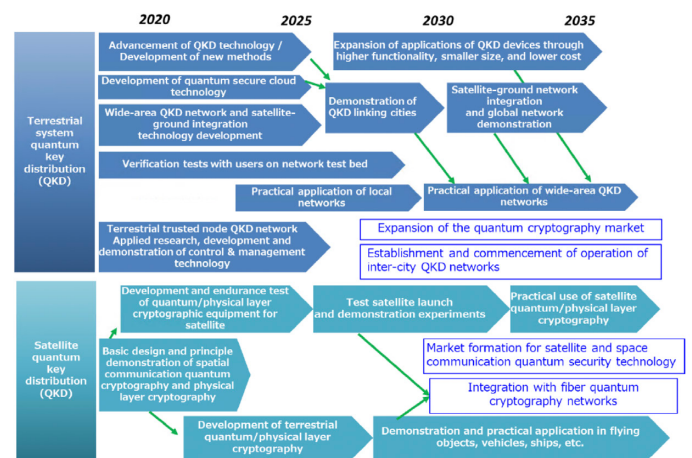


Fig. 12 : R&D roadmap for QKD networks

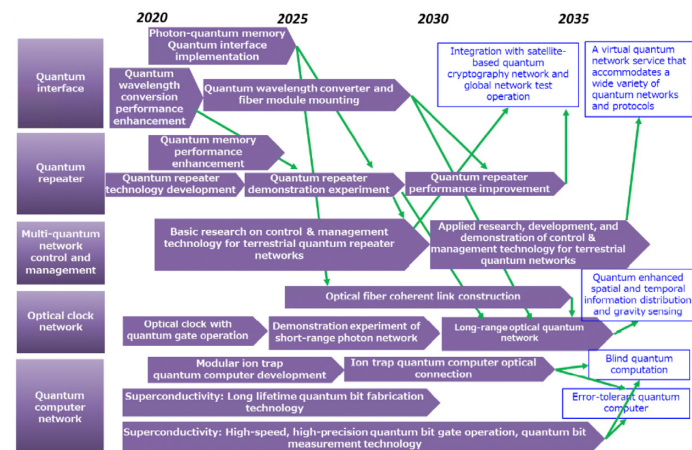


Fig. 13 : R&D roadmap for quantum networks