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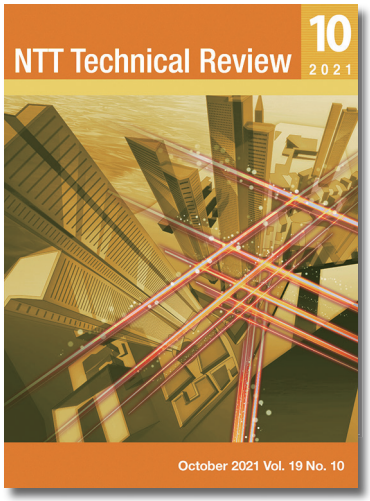

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Front-line Researchers

- William John Munro, Senior Distinguished Researcher, NTT Basic Research Laboratories

Rising Researchers

- Takeru Inoue, Distinguished Researcher, NTT Network Innovation Laboratories

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- Release of NTT Technology Report for Smart World 2021

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View from the Top

Tomoyoshi Oono, Senior Vice President, Head of NTT Service Innovation Laboratory Group

▼Overview

The NTT Service Innovation Laboratory Group aims to create a world in which all people are happy and can live their lives safely, securely, and healthy. Its three laboratories (i.e., NTT Human Informatics Laboratories, NTT Social Informatics Laboratories, and NTT Computer and Data Science Laboratories) research and develop technologies for integrating cyber and physical spaces to create a world in which a harmonious relationship between the Earth, society, and individuals is built. We interviewed Tomoyoshi Oono, senior vice president, head of the NTT Service Innovation Laboratory Group, who is orchestrating the laboratory group's efforts to solve social issues and create new value by thinking outside the box, about his new mission and the qualities required of top management.

Front-line Researchers

William John Munro, Senior Distinguished Researcher, NTT Basic Research Laboratories

▼Overview

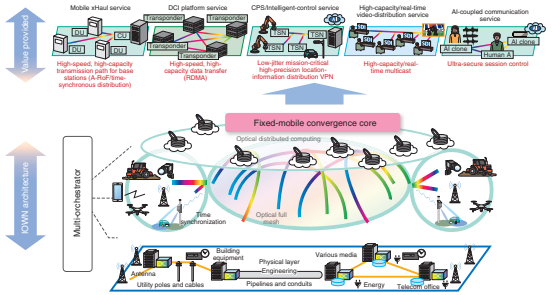
Researchers at NTT Basic Research Laboratories are aiming to create new technologies harnessing the power of quantum mechanics. In November 2020, they proposed a method for compressing quantum circuits to enable high-speed quantum computation and the miniaturization of quantum computers in the US scientific journal Physical Review X. In February 2021, the British scientific journal Nature Communications published a paper on the demonstration of a high-speed quantum random-number generator that achieves the highest levels of security by using the world's first practical optical device. We interviewed William John Munro, a senior distinguished researcher at the laboratories and leading figure in the broad field of quantum technology, about his research activities and his attitude as a researcher.

Feature Articles
Network-service Technologies Enabled by the All-Photonics Network for IOWN

Network-service Technology Enabled by the All-Photonics Network

▼Abstract

To implement the Innovative Optical and Wireless Network (IOWN), an advanced network that can efficiently process a large amount of data incomparable with the conventional Internet is required. To satisfy this requirement, NTT is researching and developing the epoch-making All-Photonics Network (APN), which will make maximum use of photonics-electronics convergence technology. This article describes activities related to function-dedicated network (FDN) architecture and the network-service technology that can be implemented on an FDN to provide various services via the APN.



A-RoF: analog radio-over-fiber
CPS: cyber-physical system
CU: central unit
AI: artificial intelligence
DU: distributed unit
DCI: data-centric infrastructure
RDMA: remote direct memory access
SDI: serial digital interface
TSN: time-sensitive networking
VPN: virtual private network