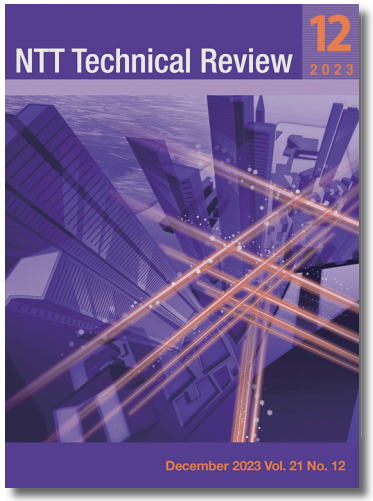
December 2023 Vol. 21 No. 12
NTT Technical Review 12 2023
https://www.ntt-review.jp/archive/2023/202312.html



View from the Top
- Hidehiro Tsukano, President & CEO, NTT Innovative Devices

Front-line Researchers
- Hiroshi Yamaguchi, NTT Fellow, NTT Basic Research Laboratories

Rising Researchers
- Tomonori Fujita, Distinguished Researcher, NTT Software Innovation Center

Feature Articles
Toward More Robust Networks
- Operation to Achieve Robust Networks
- Technologies for Promptly Understanding Network Conditions When Large-scale System Failure Occurs
- Network Reliability Design and Control Technology for Robust Networks
- NW-AI Self-evolving Framework for Fault-tolerant Robust Networks

Regular Articles
- Human-behavior-understanding Engine: Video-recognition AI Library for Understanding Human Behavior
- Low-latency Function-dedicated Network Providing Sustained and Stable Services

Global Standardization Activities
- Report on the Second Plenary Meeting of ITU-T SG2 Standardization of Telecommunication Numbering

Practical Field Information about Telecommunication Technologies
- Case Studies in 50-bit/s Leased Lines: Modem Communication Failure at Earth-return Circuit and the Cause of Failure to Replace Metallic Transmission Line with Optical Cable

View from the Top

Hidehiro Tsukano, President & CEO, NTT Innovative Devices

▼Abstract

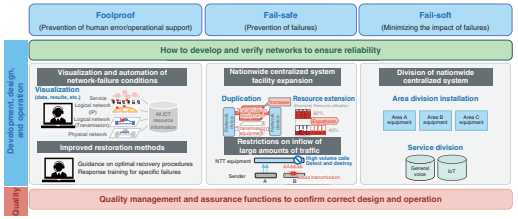
NTT Innovative Devices has begun its journey as a manufacturer specialized in photonics-electronics convergence devices. By designing, developing, manufacturing, and selling strategic devices that make up the core infrastructure of the Innovative Optical and Wireless Network (IOWN), the company strives to enable high-speed, large-capacity communications through innovative technologies focused on photonics and contribute to reducing power consumption and building a sustainable society in accordance with the IOWN concept. We asked Hidehiro Tsukano, president & CEO, NTT Innovative Devices, about the company's business and his mindset as a top executive.

Feature Articles
Toward More Robust Networks

Operation to Achieve Robust Networks

▼Abstract

Large-scale communication-infrastructure failures have a tremendous impact on daily life and economic activities, requiring more resilient networks. We at NTT laboratories aim to achieve robust networks that minimize service impact by improving network adaptability to system failures and shorten recovery time by improving network resilience. This article describes our research and development efforts in operation-related technologies to achieve robust networks.



Regular Articles

Human-behavior-understanding Engine: Video-recognition AI Library for Understanding Human Behavior

▼Abstract

To enable all many types of work to be conducted remotely as needed and overcome geographical constraints, NTT Human Informatics Laboratories is developing telepresence technology for understanding the conditions at a remote location and remotely operate an artificial body, such as a robot, in real time. Remote operation of an artificial body requires that conditions at a remote location be analyzed and information on operating the artificial body and on people and the environment in the vicinity of the artificial body be fed back to the operator in real time. This article introduces the development of a human-behavior-understanding engine for automatically recognizing human behavior from camera video to recognize how people at a remote location might behave.

Low-latency Function-dedicated Network Providing Sustained and Stable Services

▼Abstract

NTT is investigating a function-dedicated network (FDN), which consists of a combination of optical and wireless networks with edge computing, to provide services meeting various network requirements simultaneously on the same infrastructure. NTT Access Network Service Systems Laboratories has been researching and developing a low-latency FDN to achieve continuous and stable service provision by meeting the service-performance requirements of low latency and low jitter. This article provides an overview and features of our low-latency FDN.