NTT Technical Review 10 2024

https://www.ntt-review.jp/archive/2024/202410.html

NTT Technical Review



View from the Top

Hidehiko Tanaka, Senior Vice President, Head of Technology and Innovation General Headquarters, NTT DATA Group Corporation

Front-line Researchers

 Masayuki Abe, NTT Fellow, NTT Social Informatics Laboratories

Rising Researchers

Koji Azuma, Distinguished Researcher, NTT Basic Research Laboratories

Feature Articles

Keynote Speeches and R&D on Access Networks Presented at Tsukuba Forum 2024

- Social Well-being Achieved through Social Infrastructure That Is Friendly to People and the Planet
- Creating "Connections to the Future"
- Creating New Value: Access Networks to Support a Sustainable Society
- R&D Activities to Implement an Access Network for the IOWN Era
- R&D of Innovative Optical Fiber Facility Technologies
- Wireless Technology Supporting People to Live a Fulfilling Social Life

Regular Articles

Transponder Aggregator for 64-degree CDC-ROADM Nodes

Global Standardization Activities

Report on the 36th Asia-Pacific Telecommunity Standardization Program Forum (ASTAP-36)

Practical Field Information about Telecommunication Technologies

Case Study of Voice Disconnection During Calls on the Hikari Denwa IP Telephone Service due to DHCP Conflicts

View from the Top

Hidehiko Tanaka, Senior Vice President, Head of Technology and Innovation General Headquarters, NTT DATA Group Corporation

▼ Abstract

In July 2023, NTT DATA shifted to a three-company structure consisting of NTT DATA Japan Corporation, which operates a business in Japan, NTT DATA, Inc., which operates a business outside Japan, and NTT DATA Group Corporation, the holding company that oversees the two aforementioned companies. Under the slogan "Realizing a Sustainable Future," NTT DATA is promoting a sustainable management. We interviewed Hidehiko Tanaka, senior vice president, head of Technology and Innovation General Headquarters, NTT DATA Group Corporation, about the technology strategy and vision of NTT DATA under the new structure.



Feature Articles

Keynote Speeches and R&D on Access Networks Presented at Tsukuba Forum 2024

Social Well-being Achieved through Social Infrastructure That Is Friendly to People and the Planet

Abstract -

With the emergence of generative AI (artificial intelligence), the world is becoming more convenient; however, electricity consumption is increasing, and environmental problems are becoming more serious. By personalizing products and services to meet diversifying needs from a market-in perspective, while using energy-saving technologies and IOWN (Innovative Optical and Wireless Network) access networks as new human and Earth-friendly industrial and social infrastructure, we can achieve social well-being. This article is based on the keynote speech I presented at Tsukuba Forum 2024 held in May 2024.

Breeding Bio/genetic engineering	Agricultural Protected horticulture facilities	production Lane-based cuttivation	Livestock	Fisheries	Logistics and retail, environment, etc.
NTT NTT Green & Food Quality improvement and-based aquaculture Regional Fish NTT AgriTechnology Development of new varieties	NTT EAST NTT AgriTechnology Protected horticulture facilities Remote agricultural- business support Sensing Remote control Yield prediction Work/production management	NTT DATA Pest diagnosis NTT e-Drone Technology Crop dusting Field inspection	NTT Communications (docomo business) Livestock-condition management Execution NTT TechnoCross	NTT EAST NTT AgriTechnology NTT Green & Food Regional Fish Land-based aquaculture NTT Communications (docomo business)	NTT NTT AgriTechnology Streamlining of agricultural-produce distribution NTT Communications (docomo business) Aquaculture- distribution platform
NTT NTT WEST	NTT TechnoCross Sensing Al-based seed-	TA	Cattle-behavior analysis Swine-body-mass estimation	Sensing Aquaculture fish Condition	HALEX Weather forecasting
Land/microorganisms	germination testing			management	

Regular Articles

Transponder Aggregator for 64-degree CDC-ROADM Nodes

▼ Abstract

Colorless, directionless, and contentionless reconfigurable optical add/drop multiplexing (CDC-ROADM) nodes will require throughputs exceeding 8 Pbit/s by 2035, and transponder aggregators supporting high-degree and multi-band functionality will be crucial devices. We demonstrated a low-loss multicast switch capable of supporting a 300-nm bandwidth and 64 degrees, a suitable device for this purpose. The prototype's insertion loss was less than 8.0 dB in all paths, and the extinction ratio exceeded 40 dB.

