

<https://www.ntt-review.jp/archive/2021/202107.html>



View from the Top

- Tetsuomi Sogawa, Senior Vice President, Head of NTT Science and Core Technology Laboratory Group

Front-line Researchers

- Masayuki Abe, Senior Distinguished Researcher, NTT Secure Platform Laboratories

Rising Researchers

- Naotoshi Abekawa, Distinguished Researcher, NTT Communication Science Laboratories

Feature Articles

NTT's Medical and Health Vision toward Creation of Bio-digital Twin

- Data-driven Medical and Health Support Created Using Bio-digital Twin
- Efforts in Analyzing Risks and Factors Concerning Lifestyle-related Diseases and Long-term Care
- Behavior-change Support Technology that Brings About Positive Mental Changes
- Technology for Visualizing the Circadian Rhythm: Wearable Core-body-temperature Sensor
- New Technology for Measurement and Analysis of Biological Sounds and Electrocardiographic Signals—Toward Early Detection of Heart Disease and Rehabilitation by Using Personal Heart Modeling
- Bionics Technology for the Future of Medicine and Health

Feature Articles

Disaggregated Computing Will Change the World

- Disaggregated Computing, the Basis of IOWN
- Photonics-electronics Convergence Technologies for Disaggregated Computing
- Memory-centric Architecture for Disaggregated Computers
- Power-aware Dynamic Allocation-control Technology for Maximizing Power Efficiency in a Photonic Disaggregated Computer

Global Standardization Activities

- Latest Activities in TM Forum

View from the Top

Tetsuomi Sogawa, Senior Vice President, Head of NTT Science and Core Technology Laboratory Group

▼Overview

The NTT Science and Core Technology Laboratory Group is engaged in research and development with the following three missions: "Research and development of cutting-edge technologies to expand NTT's business domains," "Creation of new principles and concepts that will revolutionize society," and "Research and development of technologies that are friendly to the global environment and people." To contribute to society, the laboratory group is creating new values through the results of its research while keeping an eye on current trends. We interviewed Tetsuomi Sogawa, senior vice president, head of the NTT Science and Core Technology Laboratory Group, about the social mission of the laboratory group and mindset required for researchers to lead the world.



Feature Articles

NTT's Medical and Health Vision toward Creation of Bio-digital Twin

Data-driven Medical and Health Support Created Using Bio-digital Twin

▼Abstract

Humanity is currently experiencing a pandemic unprecedented in recent history. In November 2020, NTT announced its Medical and Health Vision, "Realization of the Bio-digital Twin," to create a medical future in which people can avoid unknown risks and remain healthy and hopeful about the future through predictions of their physical and mental states. In the Feature Articles in this issue, NTT's Medical and Health Vision as well as the latest technological details concerning acquiring and analyzing biological information and enabling treatment in the body, namely, elemental technologies concerning bio-digital twins, are introduced.



Feature Articles

Disaggregated Computing Will Change the World

Disaggregated Computing, the Basis of IOWN

▼Abstract

To achieve IOWN (the Innovative Optical and Wireless Network), we need advanced computer systems that can efficiently process huge amounts of data compared with current capabilities. To meet this demand, NTT is studying an innovative computer architecture, called *disaggregated computing*, that makes maximum use of photonics-electronics convergence technology. This article describes the overall outline and basic concept of this new computer architecture.

