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- ▶ Shingo Kinoshita, Senior Vice President, Head of Research and Development Planning, NTT Corporation

## Front-line Researchers

- ▶ Shinji Matsuo, NTT Fellow, NTT Device Technology Laboratories and NTT Basic Research Laboratories

## Rising Researchers

- ▶ Masahiro Nakano, Distinguished Researcher, NTT Communication Science Laboratories and NTT Basic Research Laboratories

## Feature Articles

### High-capacity, Low-delay Transmission Technologies Utilizing Optical, Radio, and Acoustic Waves for IOWN/6G

- ▶ Achieving IOWN/6G and Creating New Value with World-leading Technologies
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## View from the Top

### Shingo Kinoshita, Senior Vice President, Head of Research and Development Planning, NTT Corporation

#### ▼ Abstract

In 2023, NTT Group announced its new medium-term management strategy: "New Value Creation & Sustainability 2027 Powered by IOWN." To execute this strategy, NTT laboratories are committed to pursuing the world's best research and development (R&D) under the following guiding principles: keep researchers motivated and excited, research and develop powerful technology to benefit society in a scalable and sustainable manner, create the future rather than predict it, and nurture intuition and be creative. We interviewed Shingo Kinoshita, NTT senior vice president, head of Research and Development Planning, about the strengths of NTT's R&D and his mindset as a top executive.



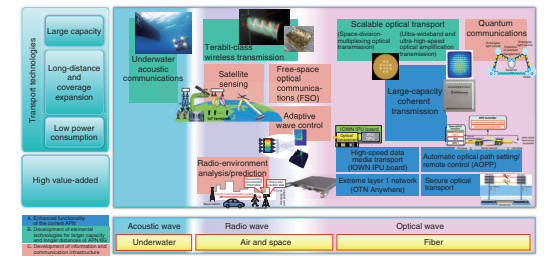
## Feature Articles

### High-capacity, Low-delay Transmission Technologies Utilizing Optical, Radio, and Acoustic Waves for IOWN/6G

#### Achieving IOWN/6G and Creating New Value with World-leading Technologies

#### ▼ Abstract

NTT Network Innovation Laboratories (NIL) is committed to the practical application of IOWN (the Innovative Optical and Wireless Network) with its world-leading technological capabilities. NIL also conducts research and development with the mission of enhancing the competitiveness of the NTT Group by developing the world's first and most advanced technologies to bring about social change and create new value. This article provides an overview of the technologies being researched and developed by NIL.



## Regular Articles

### Mistimed Motor Signals from the Brain Affect Force Precision

#### ▼ Abstract

Even a seasoned baseball pitcher has difficulty throwing a ball to the same location repeatedly. Such movement variability is assumed to come from neural noise, which causes the muscle activity's amplitude to fluctuate between movements. We explored an alternative source of noise, namely the variability in the muscle activity's timing. We constructed a computational model of a shoulder controlled by two muscles then varied the muscle activity's amplitude and timing independently to predict their effect on the shoulder's force. These predictions were then tested by recording the muscle activity from human participants who used their shoulder to produce periodic forces. The force's variability was explained more accurately by timing noise, suggesting that variable motor timing could play an important role in determining movement precision.

