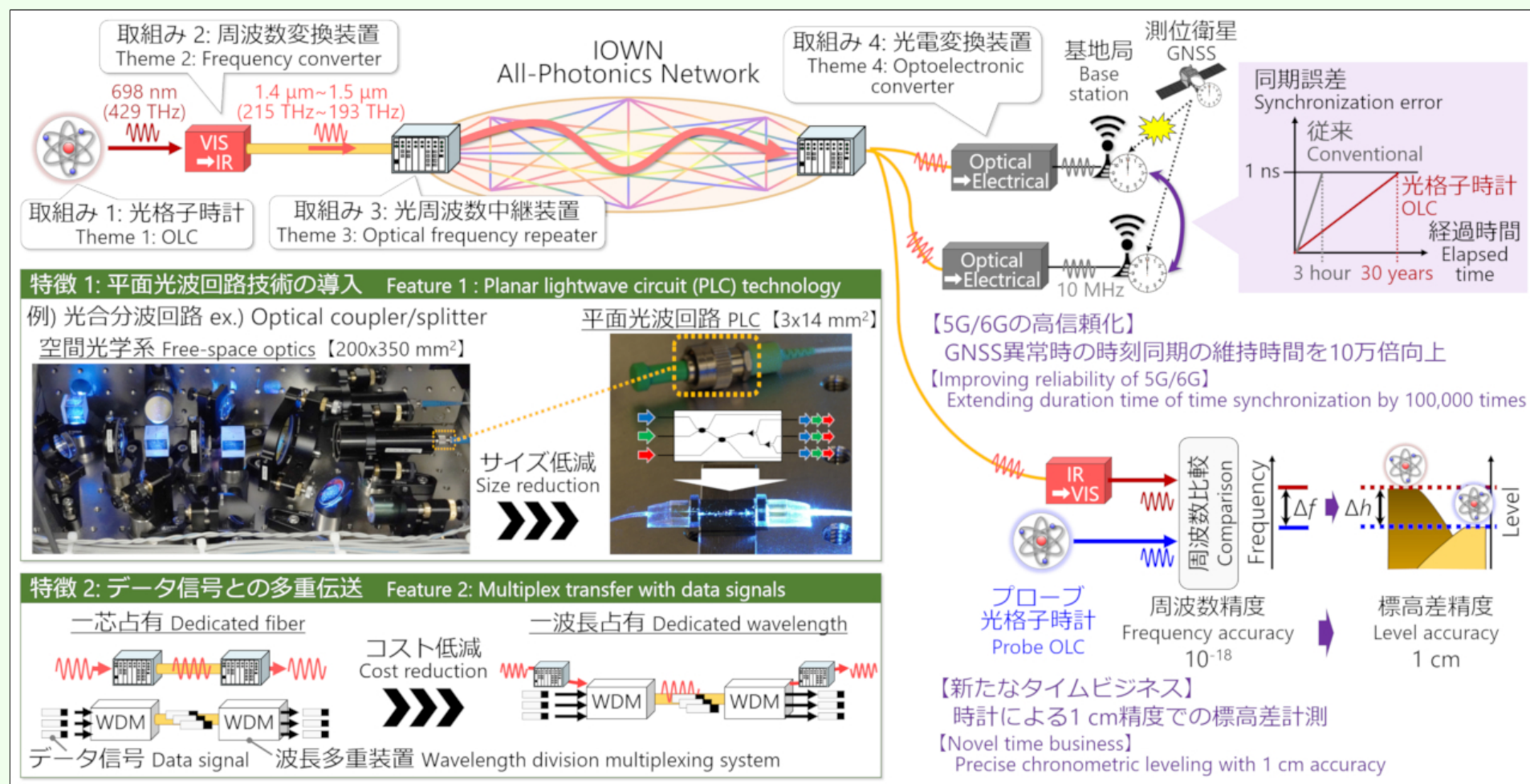




# Stable time synchronization and chronometric leveling

### Abstract

An OLC achieves more than 100,000 times higher accuracy than conventional frequency standards for communications. We are working on techniques to transfer an optical frequency of the OLC to remote site with high accuracy. A network of OLCs enables long-stable time synchronization in 5G/6G and precise chronometric leveling for disaster prevention.



### Features

- Planar lightwave circuit technology for size reduction and stability improvement
- Multiplex transfer of an OLC frequency and data signals for reduction of the transfer cost

### Application Scenarios

- Improvement reliability of 5G/6G systems by time holdover in case of the GNSS error
- Chronometric leveling with 1 cm accuracy for disaster prevention

### Roadmaps

- We will proceed with the demonstration of time synchronization and chronometric leveling using the NTT network, and the study of systemization to improve operability and reliability.

### Collaboration Partners

- JST-Mirai Program, The University of Tokyo, RIKEN

### Exhibitors

Nippon Telegraph and Telephone Corporation,  
 Nippon Telegraph and Telephone East Corporation,  
 NTT Communications Corporation

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