To develop a long-haul large-capacity optical transport network, we are conducting R&D on ultra-high-speed optical transmission technologies by using a digital coherent technique. We have demonstrated a realtime 100 Gbit/s transmission with plug & play functionality. We are also conducting research on 400 Gbit/s transmission using multi-level modulation techniques.

**Features**

- 100 Gbit/s per channel realtime massive wavelength-division-multiplexing (WDM) transmission by using a polarization-division-modulation quadrature phase shift keying (PDM-QPSK) modulation scheme and large-scale integrated digital signal processing (DSP) technology*
- Fast disaster recovery by using plug & play functionality of the DSP which automatically configures 100 Gbit/s signal with less than 50 ms.
- Ultra-high speed 400 Gbit/s transmission is possible by using a polarization-division-modulation quadrature amplitude modulation (PDM-QAM) format which modulates both the amplitude and phase of light into multi-levels.

**Application Scenarios**

- 100G photonic transport system (point-to-point, multi-ring).
- Next generation 400G photonic transport system.

**NTT Group Global Advantage**

We successfully demonstrated 100 Gbit/s and post-100 Gbit/s transmission technologies and are leading the world in R&D. We are also contributing to the international standardization activities of 100/400GE over OTN².

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*1 This work is partly supported by R&D of “High-speed Optical Transport System Technologies”, “High-speed Optical Edge Node Technologies” and “Ultra-high Speed and Green Photonic Networks” by the Ministry of Internal Affairs and Communications (MIC) of Japan.
*2 This work is partly supported by the “Universal Link Project” and “R&D of optical transparent transmission technology (Lambda Reach)” of the National Institute of Information and Communications Technology (NICT) of Japan.