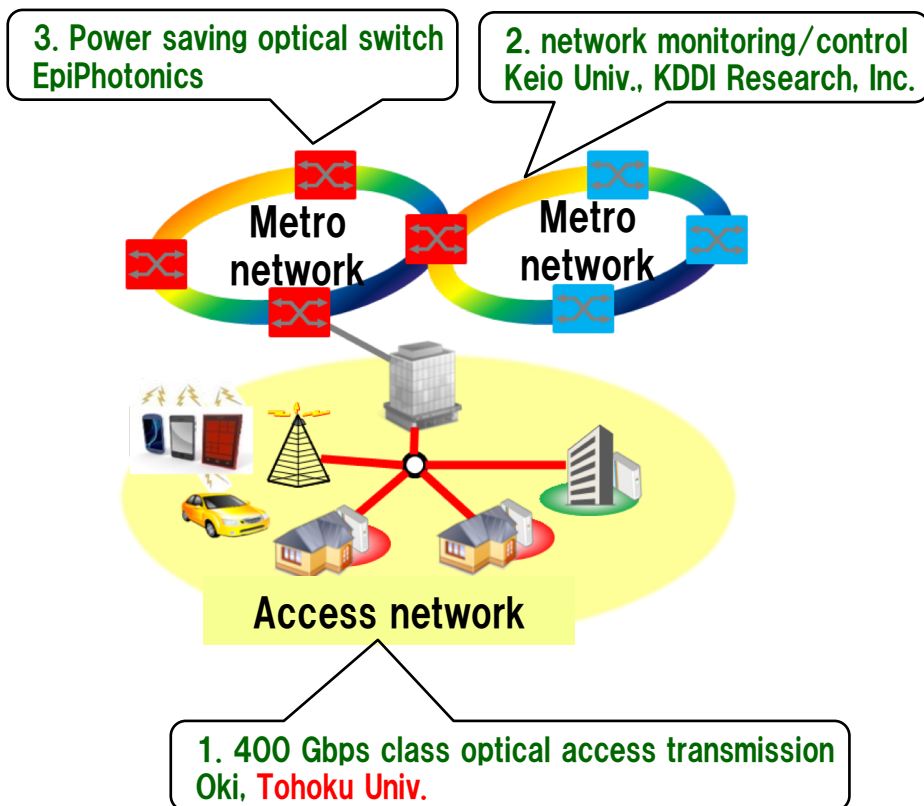


Research and development of innovative optical network technology for a novel social infrastructure

Research and development of high-efficiency optical metro-access technology

Due to the spread of IoT devices and the progress of mobile systems such as 5G, communication traffic will continue to increase. In particular, it is urgent to increase the capacity and efficiency of the metro-access network applied to the mobile front hole/backhaul. In this research, we will establish a 400 Gbps high-speed and large-capacity optical access technology and network monitoring/control technology to increase the capacity and efficiency of the metro-access network.



1. R&D of 400 Gbps class optical access transmission technology

- Construction of 400 Gbps four-wave WDM-polarization multiplexing 16 QAM coherent transmission system using the existing 10 G-PON system optical device. The target loss budget is 30 dB.
- Development of optical phase synchronization technique of uplink burst 16 QAM signal using optical injection locking method.

2. R&D of optical network monitoring/control technology

- Operation man-hours required for multi-vendor increase equals to or less than that of a single vendor.
- Development of optical signal quality estimation / route search technology for multi-vendor.
- Realization of transfer expectation guaranteed routing technology.

3. R&D Flexible optical switching technology

- Realization of 4×4 flexible optical switch using LCoS.
- Reduce power consumption to 1/2 or less compared with existing switches.