## **Optical Soliton Transmission Technology**

The dynamic soliton method was proposed by making full use of optical fiber amplifier technology, and a 10Gbit/s, 180 million km orbit transmission experiment was successfully performed at the laboratory level, showing theoretically and experimentally that the transmission distance is no longer limited by soliton control. Furthermore, it has been theorized that soliton transmission is possible if the average value is in the anomalous dispersion region, even in actual optical lines with dispersion values, and a 20Gbit/s, 2,000km multi-relay transmission experiment was successfully performed using a relay optical fiber transmission line installed on site, which is used commercially by NTT.

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## **Optical CDMA Networks**

A method for mapping identification information of data flows such as packets to optical code labels and performing routing has been invented and has been verified. 10Gbit/s class optical code division multiplexing transmission was pioneered in the world, and the milestone of completely asynchronous 10-user multiplexing was achieved by using the world's longest optical coding and decoding of 511 chips at that time, pioneering next-generation broadband access.

CDMA: Code Division Multiple Access

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## **Photo Telegraph Transmitters**

In 1930, the then Ministry of Communications started using NE-type photographic transmission equipment to launch a public photographic telegram service between Tokyo and Osaka. The photographic transmission equipment used at this time was called No. 1 photographic transmission equipment (For bare wire) (The spare equipment (For cable) was called No. 2. The No. 3 equipment was introduced in 1950.) In fiscal 1951, the No. 4 photographic transmission equipment was introduced as the No. 4 equipment. This equipment is a phototube bridge modulation system proposed by the Research Institute of Electrical Communication, and a push-pull phototube and the like are used for this.

NE: Nippon Electric