

# Fujitsu Successfully Demonstrates Interoperability of 10GbE-LANPHY Interface for Next-Generation Photonic Networks

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Fujitsu Laboratories Ltd. and Fujitsu Limited today announced their successful demonstration of the interoperability of 10GbE-LANPHY(1) interface for the next-generation photonic network known as the Optical Transport Network (OTN)(2), using the market-leading Fujitsu Reconfigurable Optical Add/Drop Multiplexer (ROADM) FLASHWAVE 7500(3) transmission platform. This 10GbE-LANPHY over OTN interoperability trial (4), the world's first trial of its kind, was organized by the National Institute of Information and Communications Technology (NICT)(5) of Japan and was conducted in collaboration with participating organizations both in and outside of Japan.

Currently, widespread deployment of photonic networks with the 10GbE-LANPHY standard is progressing, particularly in North America. The Fujitsu FLASHWAVE 7500 ROADM platform, which has a solid track record of deployment with carriers and cable companies, achieving extremely high market share exceeding 80% of the ROADM market in North America(6), features 10GbE-LANPHY interface.

However, due to the fact that the 10GbE-LANPHY standard was originally developed primarily for enterprise networks, details of specifications for use over the OTN were not standardized and interoperability between various vendors remained untested.

This latest successful trial organized by NICT is part of an initiative to establish interface interoperability among many carriers with diverse equipment, and to enable standardization of specifications for transmission of optical signals over the OTN with 10GbE-LANPHY interface. The participation of Fujitsu in this trial as a member of the working group for interoperability verification that conducted the test, and the successful demonstration of the interoperability of the FLASHWAVE 7500 ROADM with the systems of other vendors incorporating the 10GbE-LANPHY interface, represent a major achievement and contribution toward the realization of reliable 10GbE-LANPHY interface next-generation photonic networks and thereby has enormous significance for Fujitsu and its customers.

## Results of the interoperability trial

Through the trial, Fujitsu successfully demonstrated the interoperability of the FLASHWAVE 7500 ROADM with systems of other vendors which incorporate the 10GbE-LANPHY interface, with extremely minimal latency of approximately 10 microseconds with 100% data transmission efficiency (throughput), without any additional processing required to the 10GbE-LANPHY interface signals.

## Future Developments

As a member of the working group verifying interoperability, Fujitsu will continue to cooperate for the establishment of standards while promoting further progress in inter-carrier interoperability interface technology for the OTN and other next-generation optical networks.

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### Glossary and Notes

1 10GbE-LANPHY: The common name of the 10 gigabit per second data speed for the Ethernet physical standard IEEE 802.3ae, established

in 2002 by IEEE. Due to its capability for handling huge volumes of data transmissions, this standard is being widely adopted in enterprise networks and Multiple Systems Operator data networks.

2 Optical Transport Network (OTN): An ultra-high capacity wavelength division multiplexing network based on the concept of handling a two-point connection (light path) of optical wavelength signals. OTN architecture (construction technology and its protocols) known as G.872 was recommended by the International Telecommunication Union's Telecommunication Standardization Sector in February 1999.

3 FLASHWAVE 7500: A next-generation dense wavelength division multiplexing (DWDM) system with 40 channels wavelength-division multiplexing (WDM), capable of accommodating data signals (e.g. Ethernet, Fiber Channel, etc.) and SONET/SDH-type signals and which supports various communications protocols and topologies.

FLASHWAVE 7500 lays the groundwork for the metro/regional transport network of the future. Its advanced optical core creates the ultimate in wavelength routing and topology migration flexibility to remove the fear and complexity from network planning decisions. Sophisticated self-tuning features enable touchless service and capacity activation to eliminate time-consuming, manual adjustments at every node, producing faster revenue and more satisfied customers. Advanced optical line cards provide efficient on-ramps for VoD, residential high-speed services and Enterprise data services across metro and regional networks over 1000 kilometers.

4 10GbE-LANPHY over OTN interoperability trial : The interconnectivity test carried out primarily through the efforts of the Interoperability Working Group, led by Professor Naoaki Yamanaka of Keio University in Japan, of the Keihanna Info-Communication Open Laboratory and organized by the National Institute of Information and Communications Technology (NICT) of Japan. This Working Group

seeks to promote the study of interface standards for direct transmission of 10GbE-LANPHY signals over OTN and to offer recommendations for standardization. Both Fujitsu Laboratories Ltd. and Fujitsu Limited are members. NICT, two telecommunication carriers and six vendors in Japan, and one vendor outside of Japan took part in the recent trial.

5 National Institute of Information and Communications Technology (NICT): NICT: The National Institute of Information and Communications Technology, an independent administrative agency in Japan.

6 Market share exceeding 80% of the ROADM market in North America: Source - In March 2005, RHK, a leading independent telecom research and advisory service firm, named Fujitsu the dominant supplier of ROADMs with a 75% share of the global metro ROADM market and 83% share of the North American ROADM market.

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