OIF Physical and Link Layer (PLL)
25-28 Gbaud Interoperability 2012
Enabling High-Speed Dynamic Services

Collaboration and Innovation. At Light Speed.
Market Drivers for Physical Layer Electrical Interoperability at 25-28 Gbaud

Market Trend/Needs
- Next generation architectures capable of supporting industry growth rates
- To enable economical adoption of 100Gb/s, definition of signals was required for board-to-board, chip-to-chip and chip-to-module
- Broad deployment through interoperable chips, connectors, and optical modules

Interconnect Challenges
- Ensure robust electrical interfaces able to meet system Bit Error Rate (BER) targets
- Multi-vendor Interoperability
- Defined parameters meeting industry objectives
PLL Demo Overview

PLL Demo includes five individual Interop Demo’s made up of ten participating companies and one test equipment vendor.

Three demos focused on Very Short Reach chip-to-module applications based upon CEI-28G-VSR.

Two demos focused on Long Reach backplane applications using CEI-25G-LR.

Plugfests completed in January 2012.
CEI-28G-VSR and CEI-25G-LR Application Overview

28G-VSR targeted to chip-to-module channels of up to 10 dB loss

25G-LR targeted to backplane channels of up to 25 dB loss
Three CEI-28G-VSR demos

**Demo No. 1**
**Altera - Gennum - Molex**

- Altera FPGA with 28G VSR SERDES
- VSR channel Board
- Gennum Retimer Board
- Molex zQSFP+ Connector
- Molex Optical module
- Tx
- Rx
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**Demo No. 2**
**Xilinx - TE Connectivity - Fujitsu Optical Components**

- Xilinx chip with 25G VSR SERDES
- VSR channel Board
- Fujitsu CFP2 Style Optical module
- 2x TE Connectivity zQSFP+ Connectors

**Demo No. 3**
**IBM - Amphenol - Inphi - Luxtera**

- IBM 28G ASIC
- Inphi Retimer Board
- Luxtera Optical Module
- Amphenol QSFP+ MCB/HCB
- 14dB channel
Two CEI-25G-LR demos

**Demo No. 4**
IBM - Molex

- 4x 25Gb/s Long Reach Backplane Links
- Molex Impact Connector

**Demo No. 5**
IBM - TE Connectivity

- 4x 25Gb/s Long Reach Backplane Links
- TE STRADA Whisper Connector
Benefits of PLL Interoperability Demo

Demonstration of viability of next generation 25 - 28 Gb/s electrical system interfaces for switches, routers, transport and data center equipment

Validation of interface architectures and constraints as defined in the Implementation Agreement

Demonstration that an Ecosystem is now in place to deliver the next generation of data rates to System OEM vendors and manufacturers
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