OIF Workshop
448Gbps Signaling for AI
Addressing the Next Rate Challenges

April 15-16, 2025

Nathan Tracy, OIF President

Sr. Principal Engineer, TE Connectivity

OIF - Where the optical networking industry’s interoperability work gets done

Who:

- 150+ member companies
    - Network operators
    - System vendors
    - Component vendors
    - Test & measurement vendors
    - Academia & research

What:

- Identify needs, gaps
- Develop interoperable optical, electrical, and control solutions
- Publish Implementation Agreements

Why:

- Accelerate adoption of advanced technology to connect a global, open networked world

Challenge: Support innovation while preserving interoperability, optimizing performance and cost

ACCELERATING MARKET ADOPTION OF OPTICAL NETWORKING TECHNOLOGIES

PROJECT HIGHLIGHTS 2025

150+ Member Companies → Identifies Industry Needs and Gaps → Publishes Implementation Agreements (specifications), Requirements and White Papers → Performs Interoperability Demonstrations

OPTICAL

Multi-Vendor Interoperability in Client Form Factors

1600ZR+
- <1000km Multi-Span Coherent DWDM

1600ZR, 800ZR, 400ZR
- >80km Coherent DWDM

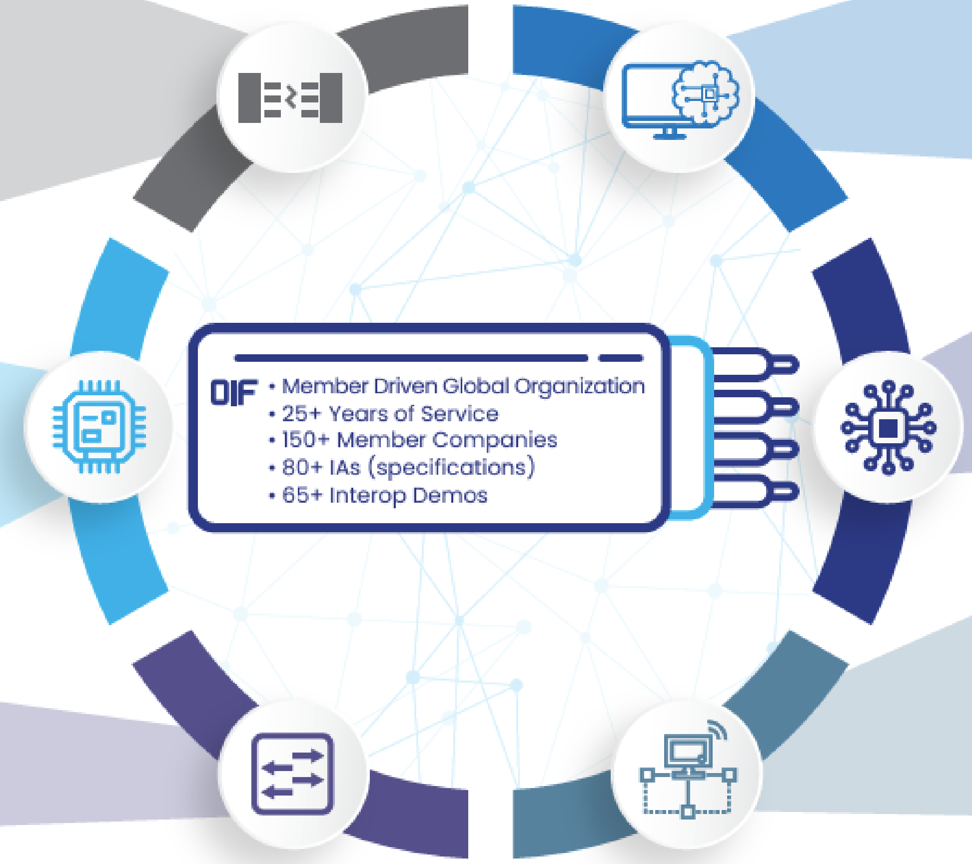
1600LR, 800LR
- <10km Coherent Point-to-Point

ENERGY EFFICIENT INTERFACES

Next Generation Low Latency Interfaces for AI/ML & Data Centers
- Compute Optics Interface (COI)
- RTLR (Retimed Tx, Linear Rx)
- External Laser Sources (ELSFP)
- Co-Packaged Modules (3.2T)
- CEI-Linear

PROTOCOL

FlexE
- More Efficient
- Agile Networking



OIF
- Member Driven Global Organization
- 25+ Years of Service
- 150+ Member Companies
- 80+ IAs (specifications)
- 65+ Interop Demos

MANAGEMENT

Common Management Interface Specification (CMIS)
- Single Solution Ranging From Copper to Coherent
- Simplified Bring up Between Host and Module
- Supports Standard and Custom Interfaces

ELECTRICAL

Common Electrical I/O (CEI)
- High-Speed Building Blocks
- 448G, 224G, 112G, 56G, 28G
- LR, MR, VSR, XSR+, XSR, MCM, Linear
- Protocol Agnostic Link Training

NETWORKING

Transport SDN APIs
- Automation, Programmability

Enhanced Network Operations
- Artificial Intelligence
- Digital Twin
- DC Storage and Optical Multi-Layer Coordination

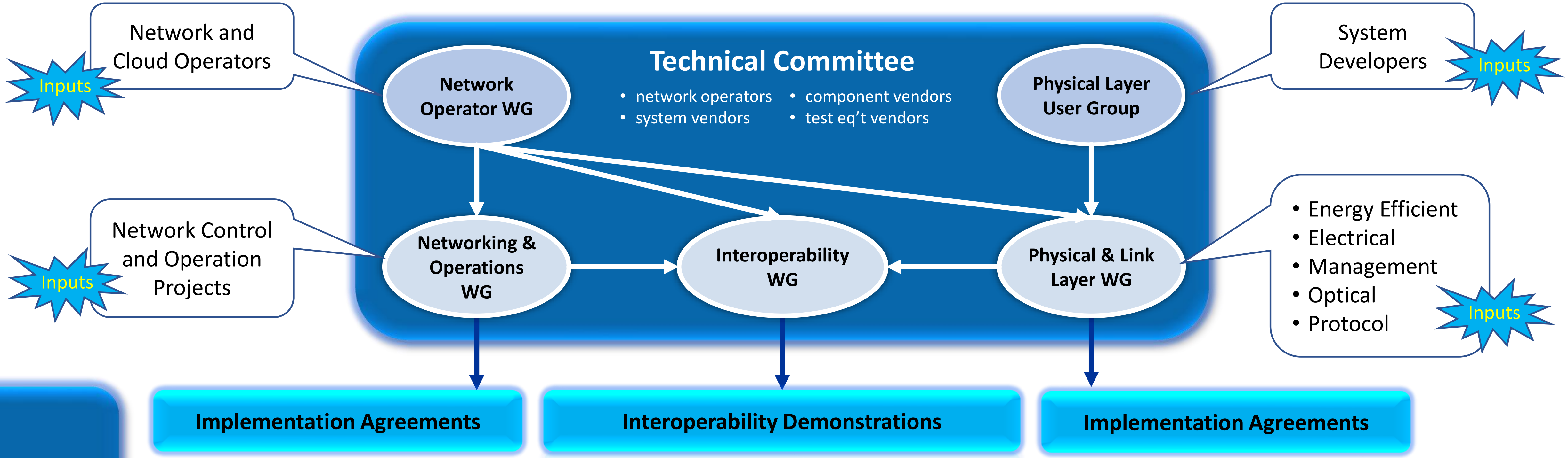
FOR MORE INFORMATION, VISIT WWW.OIFORUM.COM/TECHNICAL-WORK/CURRENT-WORK/

OIF Removes Roadblocks

- Proprietary solutions
- Lacking or lagging standards
- Lack of opportunities for collaboration

- Building industry consensus
- Contributing to formal standard bodies
- Accelerating progress through collaboration

OIF: How Work Gets Done



Network and Cloud Operators

Inputs

Network Control and Operation Projects

Inputs

Technical Committee

- network operators
- system vendors
- component vendors
- test eq't vendors

Network Operator WG

Physical Layer User Group

Networking & Operations WG

Interoperability WG

Physical & Link Layer WG

System Developers

Inputs

- Energy Efficient
- Electrical
- Management
- Optical
- Protocol

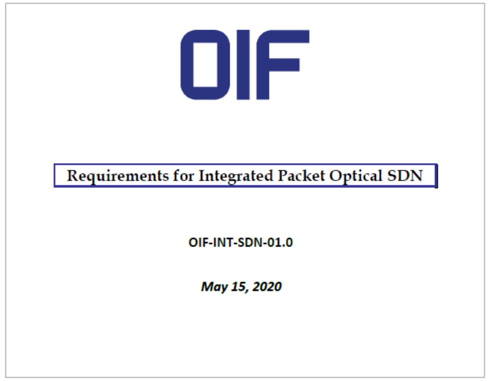
Inputs

Implementation Agreements

Interoperability Demonstrations

Implementation Agreements

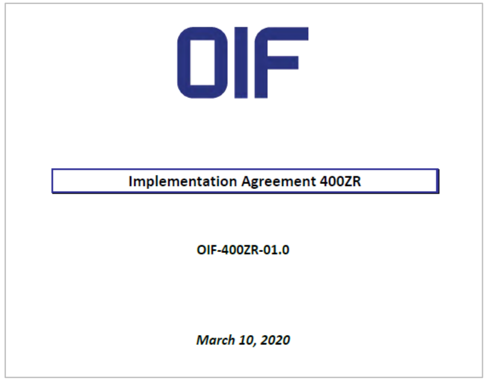
Market Awareness and Education Committee



Requirements for Integrated Packet Optical SDN

OIF-INT-SDN-01.0

May 15, 2020



Implementation Agreement 400ZR

OIF-400ZR-01.0

March 10, 2020

How Did We Get To This Workshop?

A Conversation Started Around AI Needs

Q2 2024

Initial Effort

OCP 1Q: Open Systems for AI: Vision White paper

OCP Short Reach Optical Interconnect

Q4 2024

First Meetings

OIF: 448G Framework

EA TEF 4Q 2024: Initial Discussions

Q2 2025

Exploration

SNIA 1Q: 400G AI Workshop

IEEE802.3: Ethernet for AI

OIF 2Q: 400G Workshop

OCP 2Q: Open Systems for AI Workshops

Q4 2025

Gaining Clarity

4Q OCP Global Summit

…TBD

448G AI WORKSHOP

AGENDA

Day One

8:00AM	Continental Breakfast in the Hotel Lobby
9:00AM	**Opening Remarks in the Sierra Ballroom - Nathan Tracy, OIF President, TE Connectivity**
9:15AM	**SDO Panel - moderated by Nathan Tracy, OIF President, TE Connectivity** Kurtis Bowman, Ultra Accelerator Link Consortium Anthony Constantine, SNIA John D'Ambrosia, Futurewei, Chair, IEEE 802.3 NEA "Ethernet for AI" Assessment Mark Nowell, Ultra Ethernet Consortium Bijan Nowroozi, Open Compute Project David Rodgers, Ethernet Alliance Nathan Tracy, OIF
10:40AM	**Keynote - Tad Hofmeister, Google**
11:20AM	Coffee Break
11:40AM	**System Architecture Panel - moderated by Lisa Huff, Senior Principal Analyst, Optical Components, Omdia** Dave Ofelt, Juniper Networks Mark Nowell, Cisco Edo Poleg, Toga Networks (a Huawei company)
12:55PM	Buffet Lunch
1:55PM	**Electrical Channel Panel - moderated by Alan Weckel, Founder and Technology Analyst, 650 Group** Mike Peng Li, Intel Andrew Josephson, Samtec John Calvin, Keysight Technologies Vivek Shah, Molex Srinivas Venkataraman, Meta Platforms Howard Heck, TE Connectivity
4:05PM	Coffee Break
4:35PM	**Keynote - Xu Wang, Meta Platforms**
5:20PM	**SERDES Panel - moderated by Cathy Liu, OIF VP, Broadcom Inc.** Kaisheng (Klaus) Hu, Ciena Mike Klempa, Alphawave Semi Lenin Petra, Marvell Kent Lusted, Synopsys
6:40PM	Day One Closing Remarks
6:45PM	Social Reception - Taco Truck & Drinks - Outdoors (weather permitting)

AGENDA
Day Two

DAY TWO - WEDNESDAY APRIL 16

448G AI WORKSHOP

8:00AM	Continental Breakfast in the Hotel Lobby
9:00AM	Opening Remarks in the Sierra Ballroom
9:10AM	**Interconnect & Testing Panel - moderated by Tom Issenhuth, OIF MA&E Chair, Huawei Technologies** Matt Traverso, Marvell Toshiyasu Ito, Yamaichi Electronics Paul Brooks, VIAVI Solutions
10:10AM	**Keynote - Ashwin Gumaste, Microsoft**
10:50AM	Coffee Break
11:20AM	**Optical Modulation Panel - moderated by Scott Wilkinson, Lead Analyst, Networking Components, Cignal AI** Balazs Matuz , Huawei Technologies Co., Ltd. Massimo Sorbara, Global Foundries
12:20PM	Buffet Lunch
1:20PM	**Electrical Modulation Panel - moderated by Scott Wilkinson, Lead Analyst, Networking Components, Cignal AI** Naim Ben-Hamida, Ciena Curtis Ling, MaxLinear Peter Graumann, Microchip David Stauffer, Kandou Bus Adam Healey, Broadcom Inc.
2:55PM	Coffee Break
3:25PM	**Keynote - Sara Zebian, OpenAI**
4:00PM	**Q&A with Keynote Speakers - moderated by Nathan Tracy, OIF President, TE Connectivity** Ashwin Gumaste, Microsoft Tad Hofmeister, Google Xu Wang, Meta Platforms Sara Zebian, OpenAI
4:35PM	Closing Remarks

Thank You

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