

The Mission and Work of the OIF

What is the OIF?

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OIF OPTICAL
INTERNETWORKING
FORUM

What is the OIF?

- **The OIF brings together industry groups from the data and optical worlds**

- **Mission: To foster the development and deployment of interoperable products and services for data switching and routing using optical networking technologies**

- **Our 100+ member companies represent the entire industry ecosystem:**
 - **Carriers and network users**
 - **Component and systems vendors**
 - **Testing and software companies**

The Challenge

- **Allow network providers to manage the underlying technical complexity of their networks**
- **Support vendor innovation while:**
 - **Preserving interoperability**
 - **Maximizing performance**
 - **Minimizing costs**

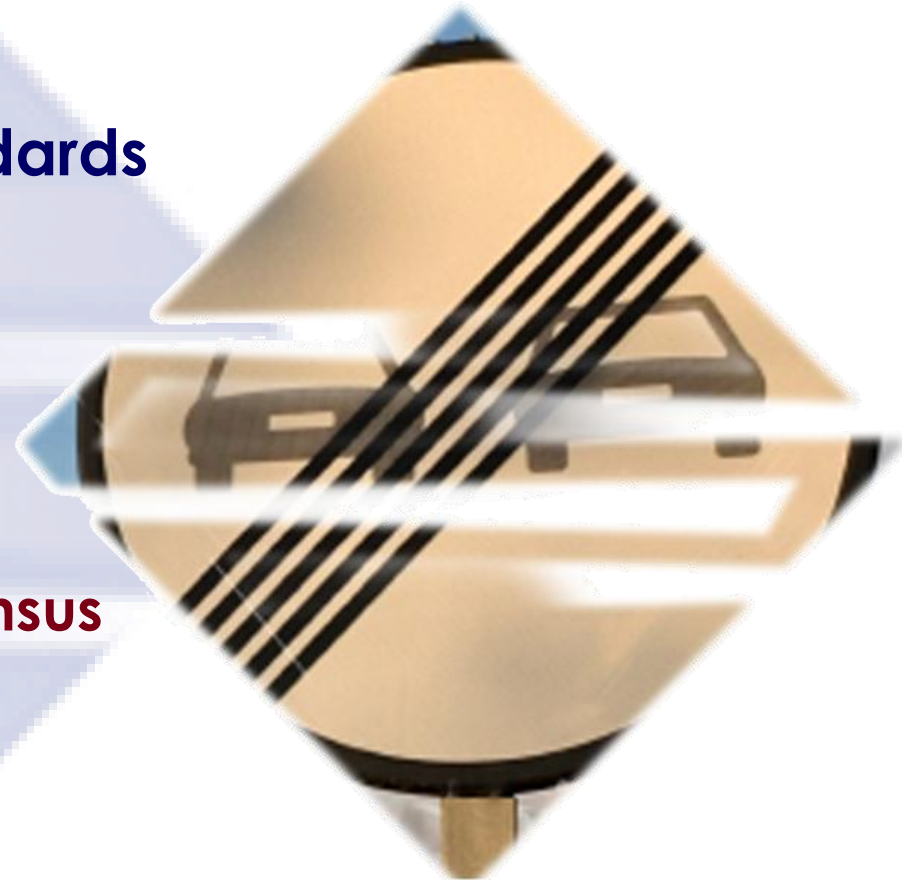


Roadblocks to Progress

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

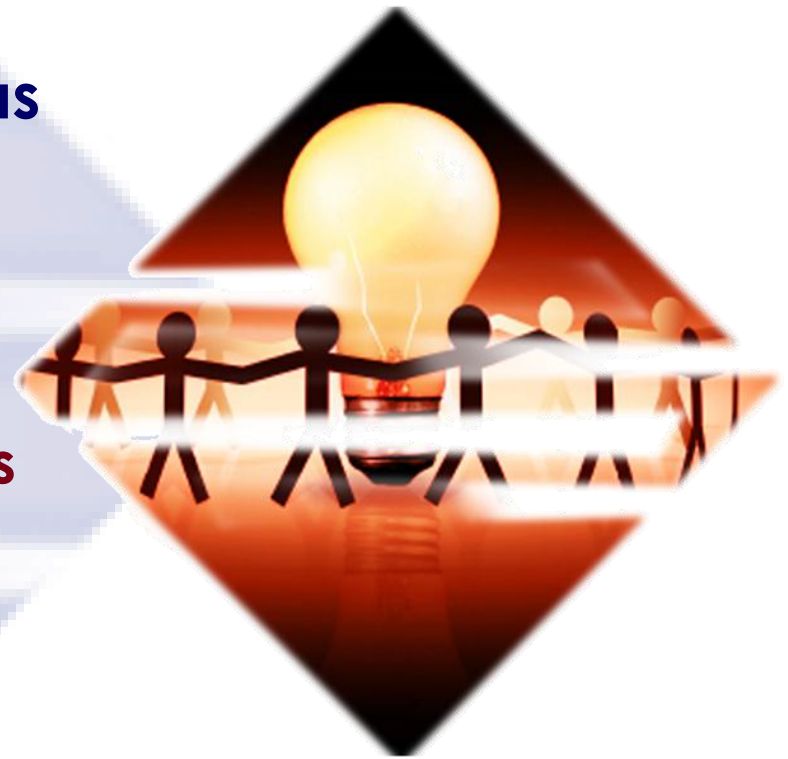
OIF Removes those Roadblocks

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

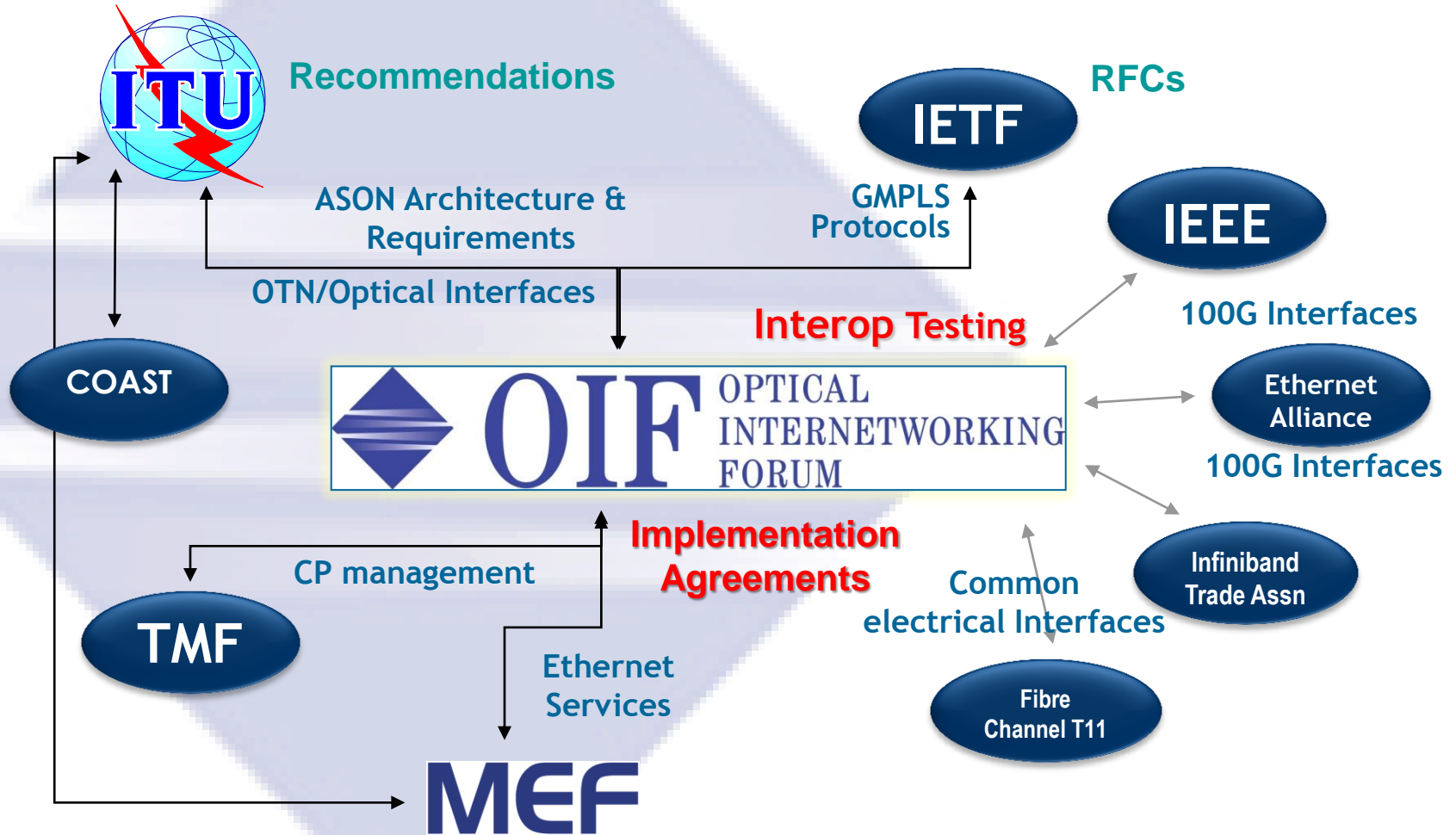


OIF Offers a Formal Process for:

- **Identifying gaps and presenting new ideas**
- **Selecting among the best ideas and creating work projects**
- **Drafting and adopting Implementation Agreements**
 - **Detailed technical specs agreed between OIF members**
 - **Free for public download**
- **Proving concepts through interoperability demos**
- **Presenting results to formal standards bodies**



Where we fit



OIF Gap Analysis/Consensus Building: Ethernet Services Example

□ Carrier Input:

- **Ethernet services are critical, fast growing area**

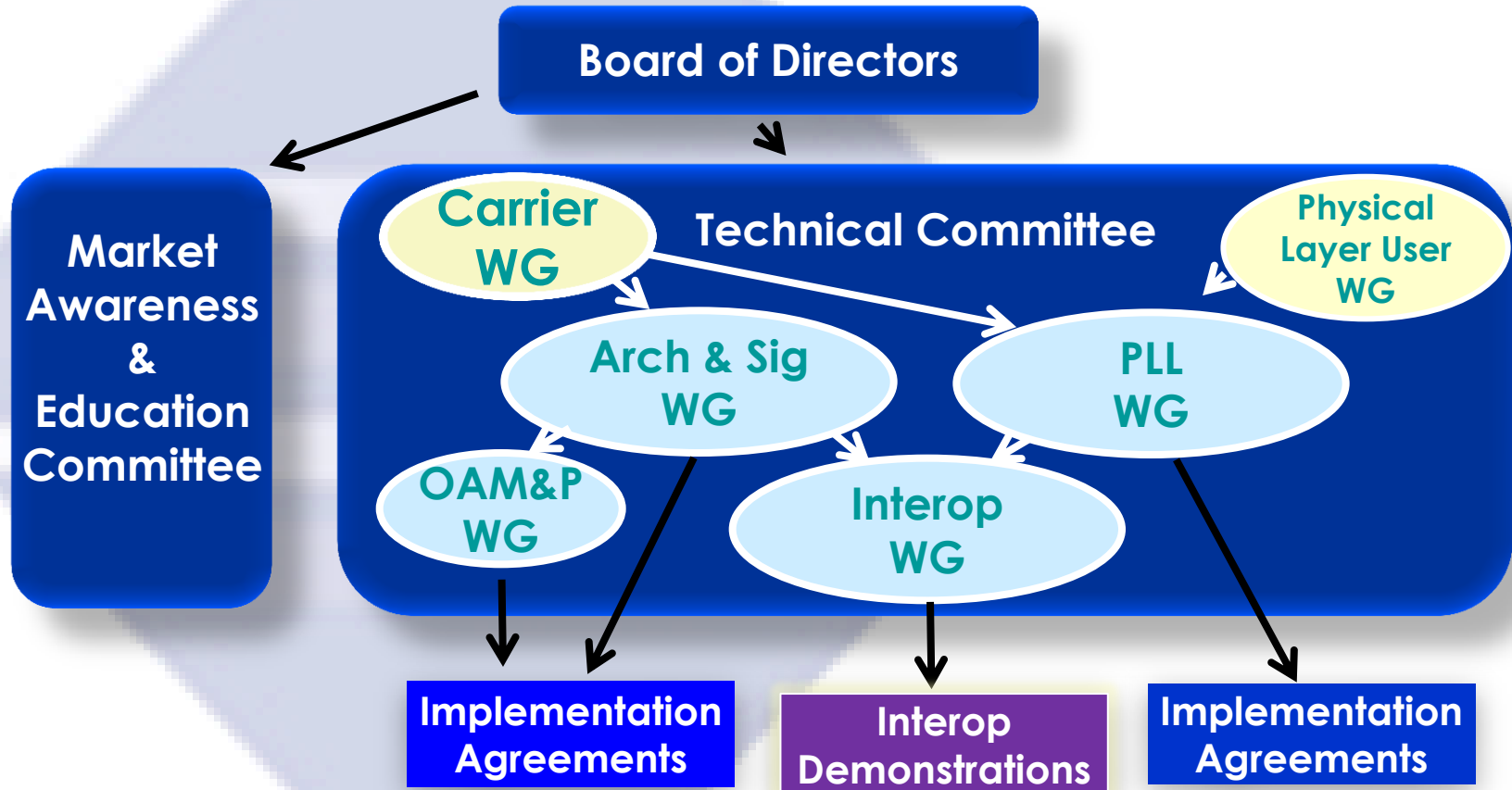
□ Ethernet Services Analysis:

- **Multiple bodies involved: MEF & ITU-T (Service Specifications), IETF (Control Plane Protocol RFCs)**
- **OIF role: Build consensus to ensure carrier service needs are met**

□ Actions:

- **Work with MEF to understand services**
 - **Liaison to exchange documents and verify understanding**
- **Work with IETF to implement protocol extensions**
 - **Liaison to request new RSVP objects and encodings**
- **Test in OIF Interoperability Demonstrations**
 - **Demonstrate Ethernet Services across multiple Transport domains**
- **Document in OIF IAs for control plane Signaling and Routing**

How OIF is Organized





IMPLEMENTATION AGREEMENTS

PLL Projects

Project	Type	Status
100G Long Distance DWDM Transmission Framework	Optical	Whitepaper complete and published
100G Long Distance DWDM Integrated Photonics Receiver	Optical	Approved Implementation Agreement
100G Long Distance DWDM Integrated Photonics Transmitter	Optical	Approved Implementation Agreement
Forward Error Correction (FEC) for 100G DP-QPSK Long Distance Communication	Optical	Whitepaper complete and published
100G Long-Haul DWDM Transmission Module - Electromechanical	Optical	Approved Implementation Agreement
100G Long-Haul DWDM Transmission Module – Management Interface	Optical	In Progress
Micro Integrable Tunable Laser Assembly (uTLA)	Optical	In Progress
Common Electrical Interface - 25Gb (CEI-25-LR/28-SR/28-VSR)	Electrical	In Progress
OTN over Packet Fabric	Electrical	In Progress, baseline text established
Faceplate Thermal Management	Energy	In Progress

Networking Projects

Project	Type	Status
UNI	Arch & Signaling	Version 2.0 published 2008
E-NNI Signaling	Arch & Signaling	Version 2.0 published 2009
E-NNI Routing	Arch & Signaling	Version 2.0 in Progress
E-NNI Multi-layer Amendment	Arch & Signaling	In Progress
E-NNI Multi-domain Recovery	Arch & Signaling	In Progress
E-NNI OTNv3 Amendment	Arch & Signaling	In Progress
Control Plane Security	OAM&P	Security Extensions v2.0 published 2010 Security of Management Interfaces End-to-end authentication for UNI
Control Plane Logging and Auditing	OAM&P	Version 2.0 published 2010
OSS Control Plane Management	OAM&P	In Progress

Newer Projects

□ OTN over packet fabric

- **Goal: define protocol to enable switching of OTN over a packet fabric with proper timing transfer.**
- **Helping enable convergence of packet and optical.**

□ OSS

- **Goal: remove any barriers hindering operators from deploying control plane due to operational concerns**
- **Address gaps in operationalizing the control plane through TMF involvement**

□ OTNv3 Amendment

- **Goal: enhance control plane for OTN extensions such as ODUFlex and ODUFlex resizing**
- **Accelerate ability for carriers to deploy OTN technologies**



INTEROP DEMONSTRATIONS

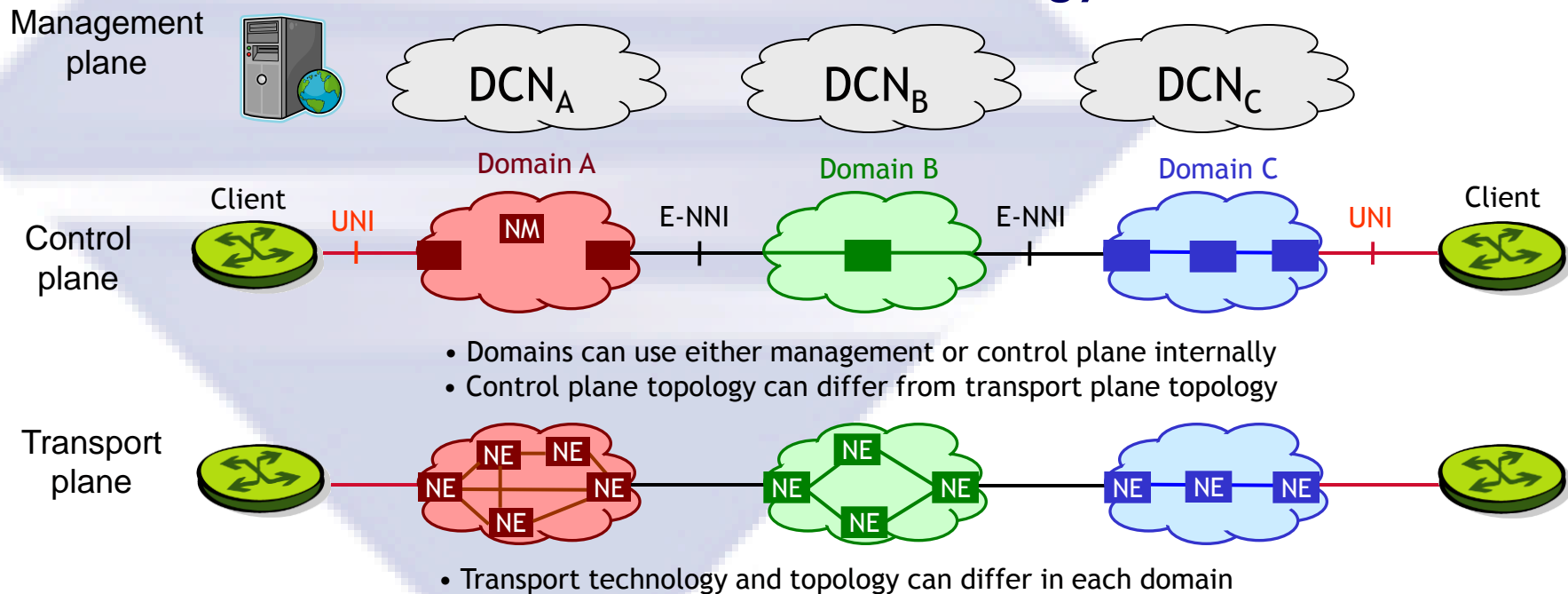
OIF Interoperability Demonstrations

- **Proof of concept based on working prototypes**
- **Cooperative effort of both carrier and vendor members**
- **Presented at major industry trade shows around the world**
- **An opportunity to clarify and enhance the details of Implementation Agreements**
 - **Incorporation of results in the work of formal standards bodies**

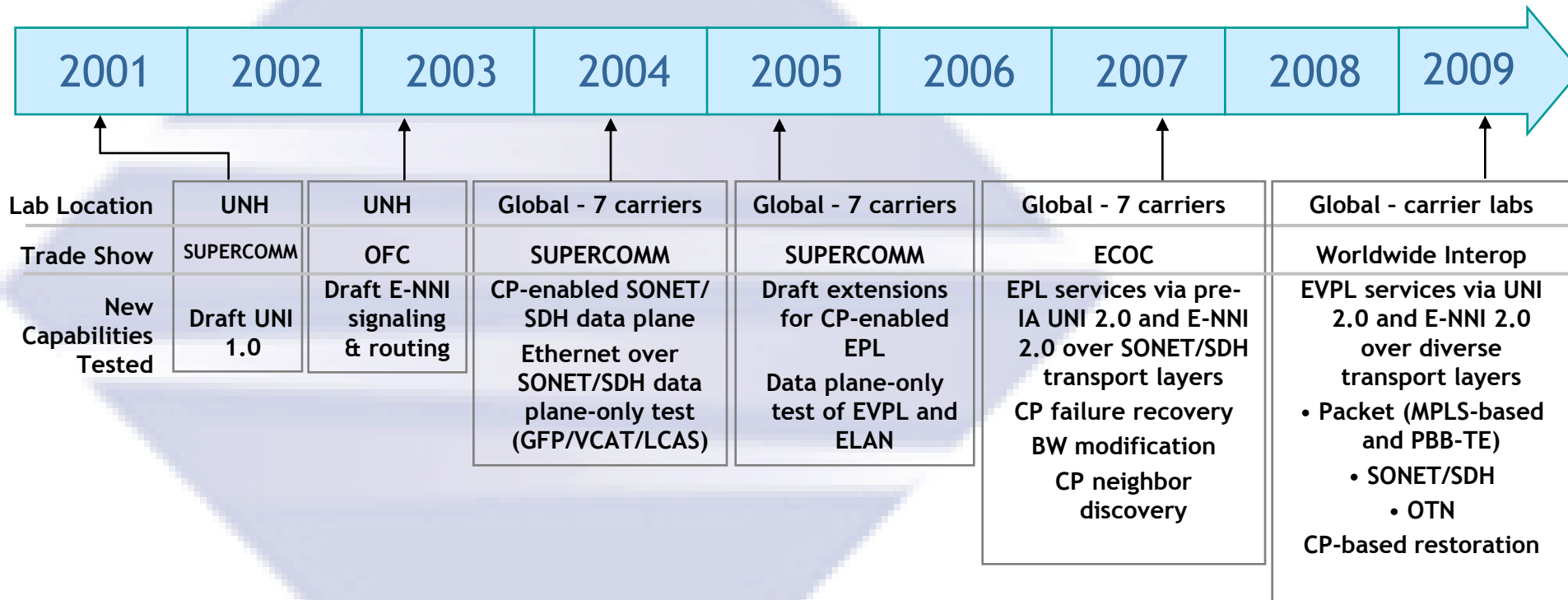
The Vision – Seamless Interworking

On-demand services provisioned based on ASON/GMPLS control plane functions, across heterogeneous network infrastructures

- Multi-domain
- Multi-layer
- Multi-technology

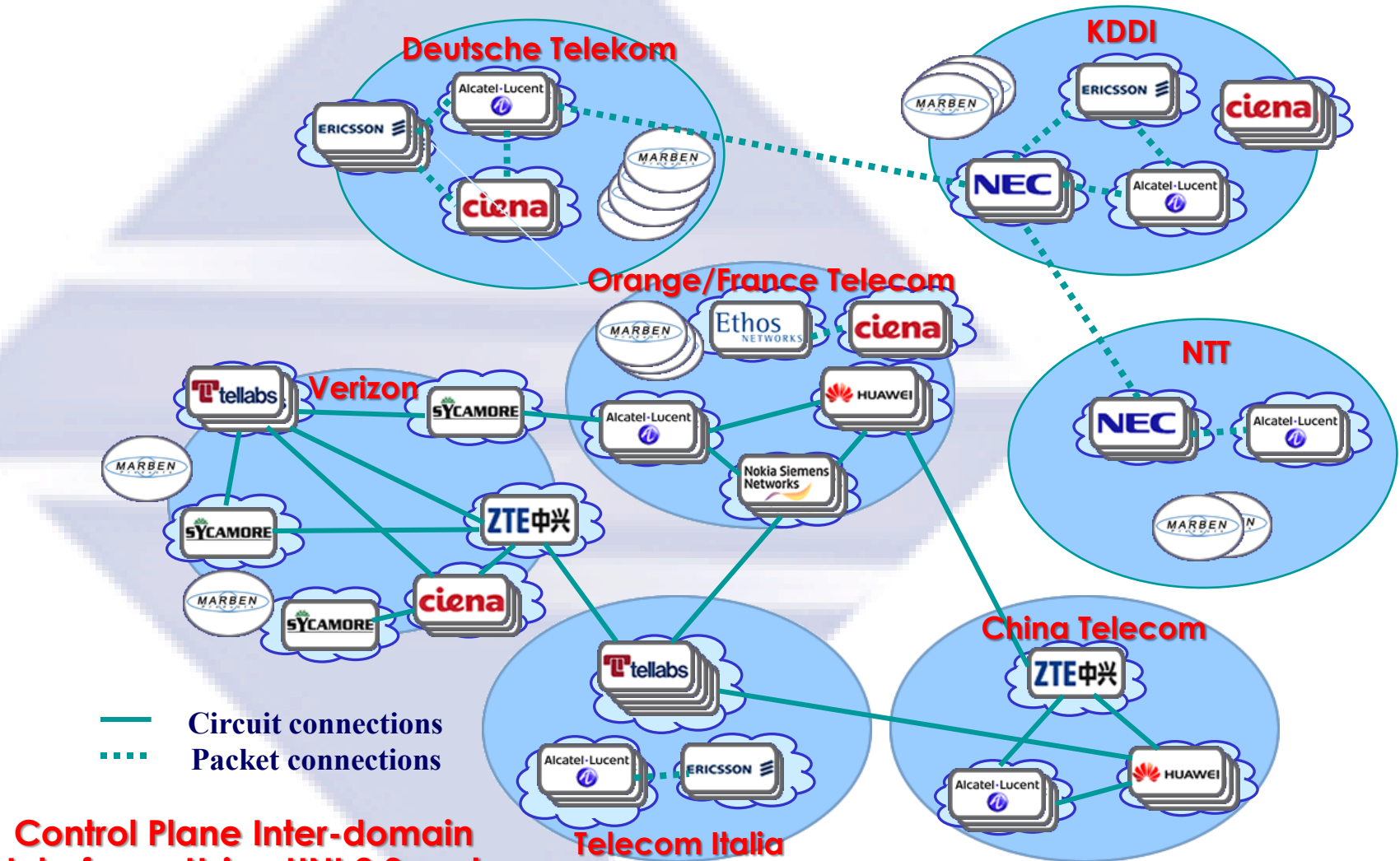


OIF Interop History



OIF Networking Interoperability Demonstrations

Vision to Testing – 2009 Demo



Control Plane Inter-domain Interfaces Using UNI 2.0 and E-NNI 2.0 IAs

□ See www.oiforum.com for further details

□ Thank You for your time!