

2012 OIF Worldwide Interoperability Demo Enabling High-Speed Dynamic Services

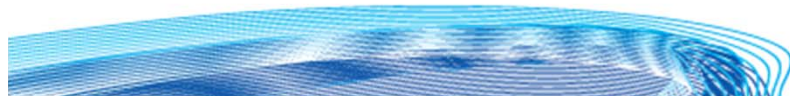


Collaboration and Innovation. At Light Speed.

About the OIF

- Mission: To foster the development and deployment of interoperable products and services for data switching and routing using optical networking technologies
- The OIF was the first industry group to bring together professionals from the data and optical worlds
- Our 100+ member companies represent the entire industry ecosystem:
 - Carriers and network users
 - Component and systems vendors
 - Testing and software companies

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Market Drivers for Interoperable Networks

Market Trend/Needs

- Demand for high-speed, flexible, resilient transport services – regionally and globally

Challenges

- Deliver end-to-end services across multiple network domains
- Multi-layer transport technologies
- Competition

The Need

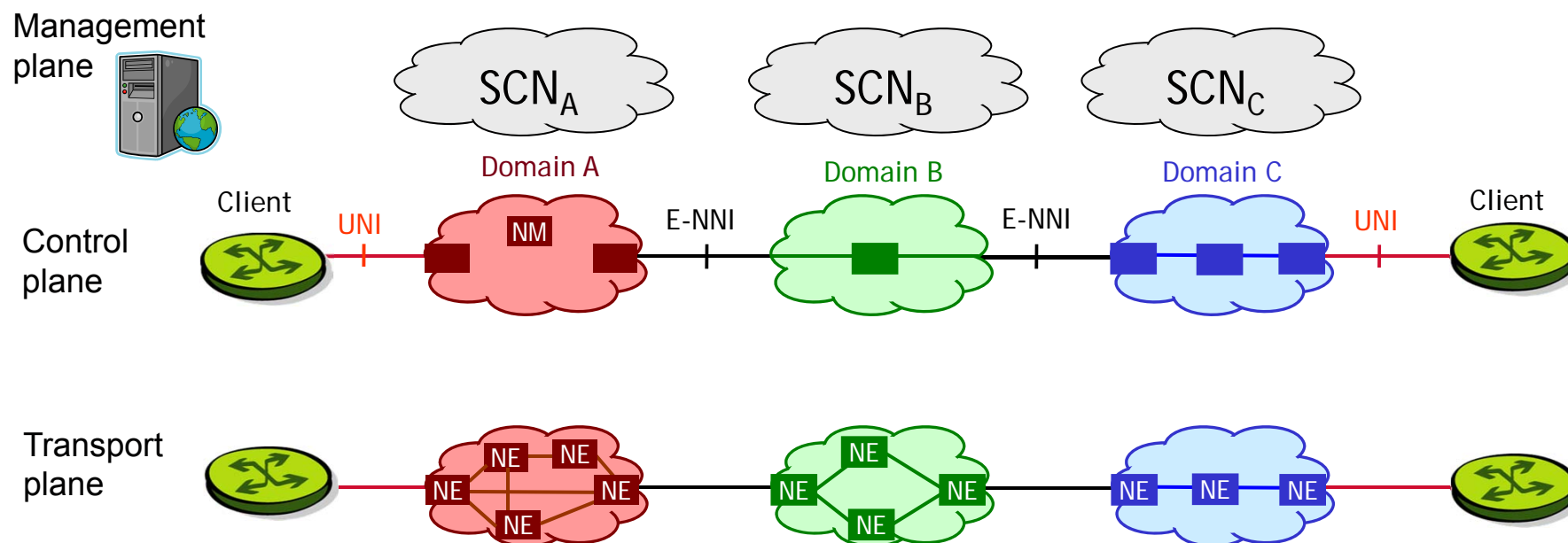
- Interoperable networks that can support cost-effective dynamic bandwidth services - on a global scale



The Vision – Seamless Interworking

On-demand services are provisioned, based on ASON/GMPLS control plane functions

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

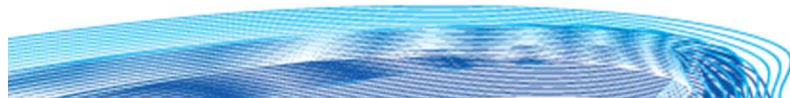


OIF Worldwide Interoperability Demonstration

- End-to-end provisioning of dynamic Ethernet Private Line (EPL) services over Optical Transport Network (OTN) using OIF UNI 2.0 and E-NNI 2.0
- Data plane interoperability testing of Ethernet and OTN
- Hosted by four major Carriers, supported by seven leading vendors
- Testing completed in Carrier labs January – March 2012
- Builds on OIF worldwide Interop Demos of 2004, 2005, 2007, 2009



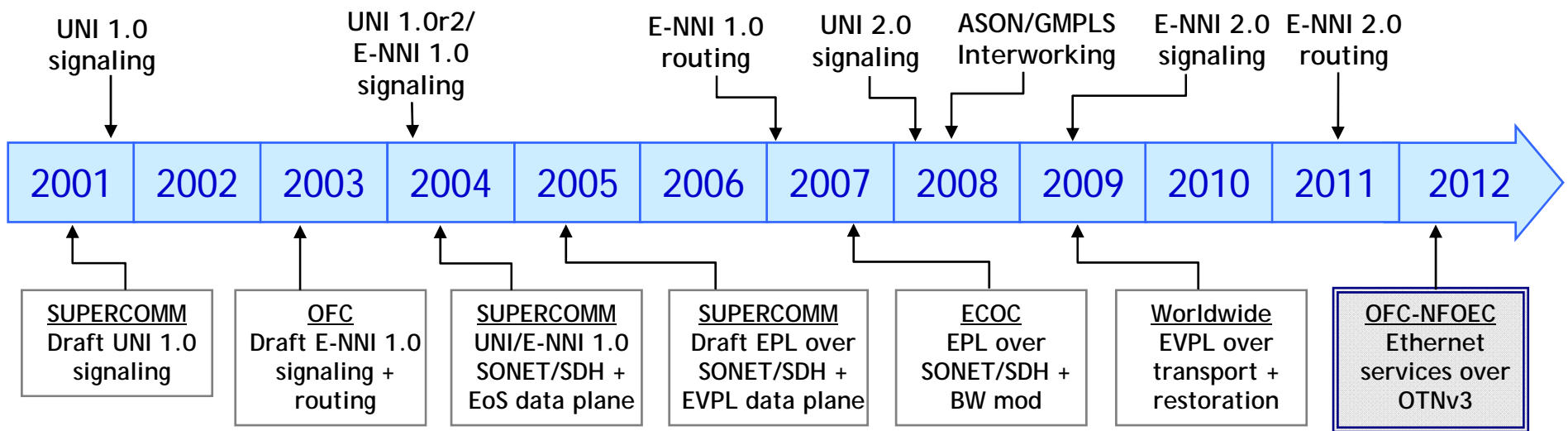
On-Demand Ethernet Services over OTN



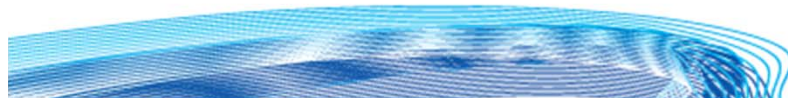
Putting the Pieces Together

OIF Implementation Agreements and Interoperability Demos

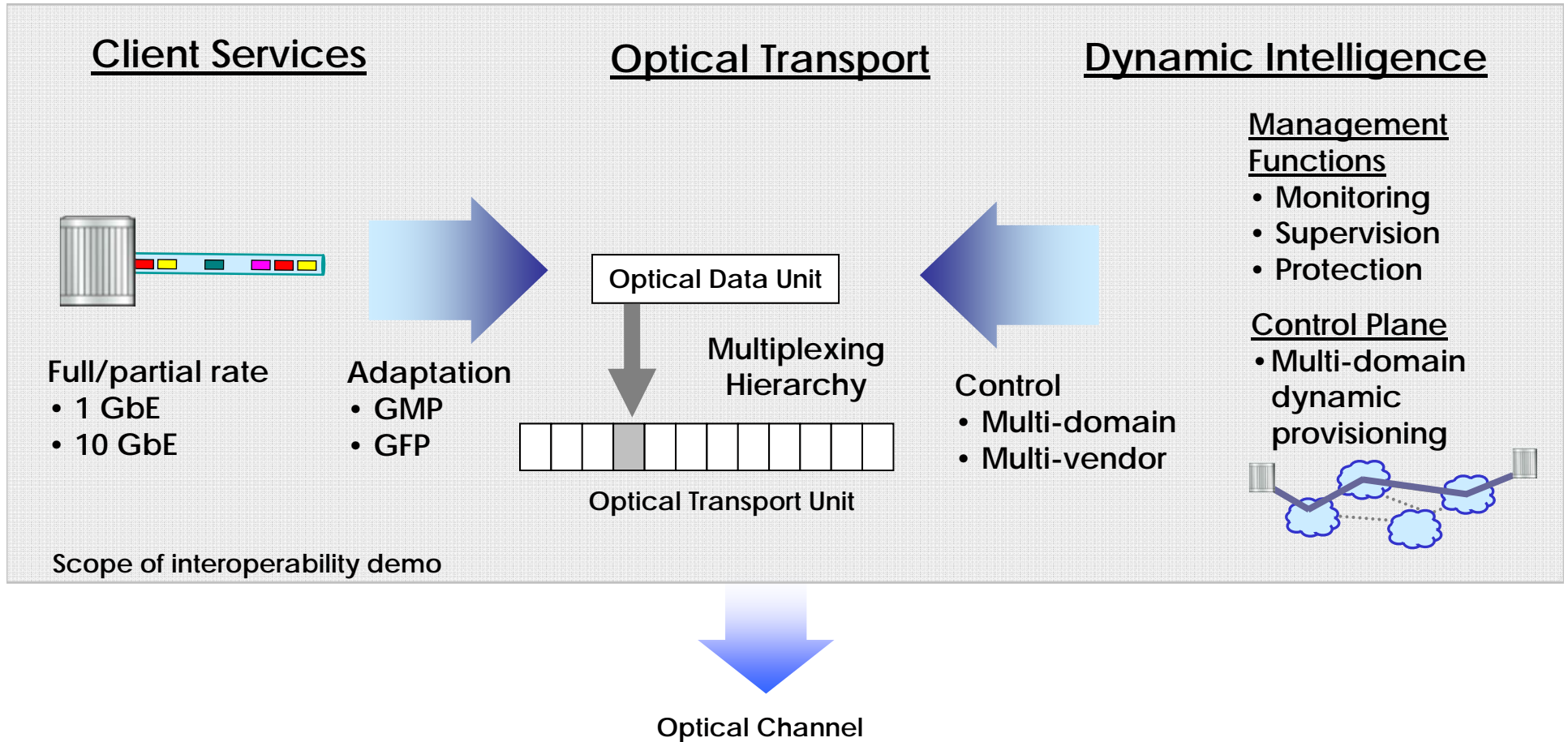
OIF Implementation Agreements



OIF Networking Interoperability Demonstrations



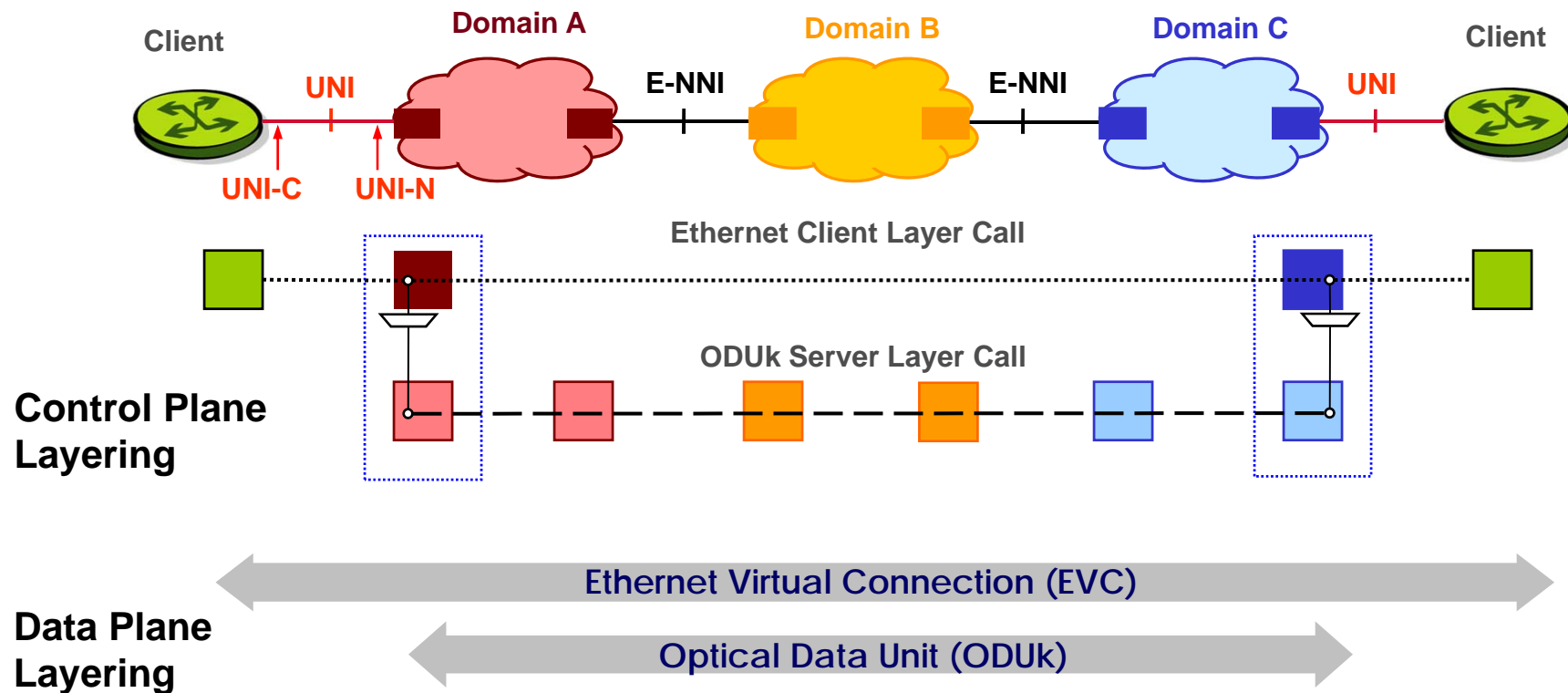
Ethernet over OTN Demo Features



Dynamic and Efficient Transport of Ethernet Services

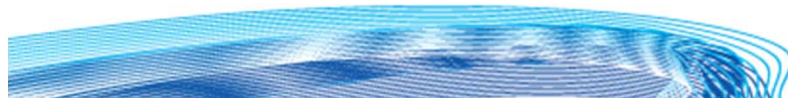
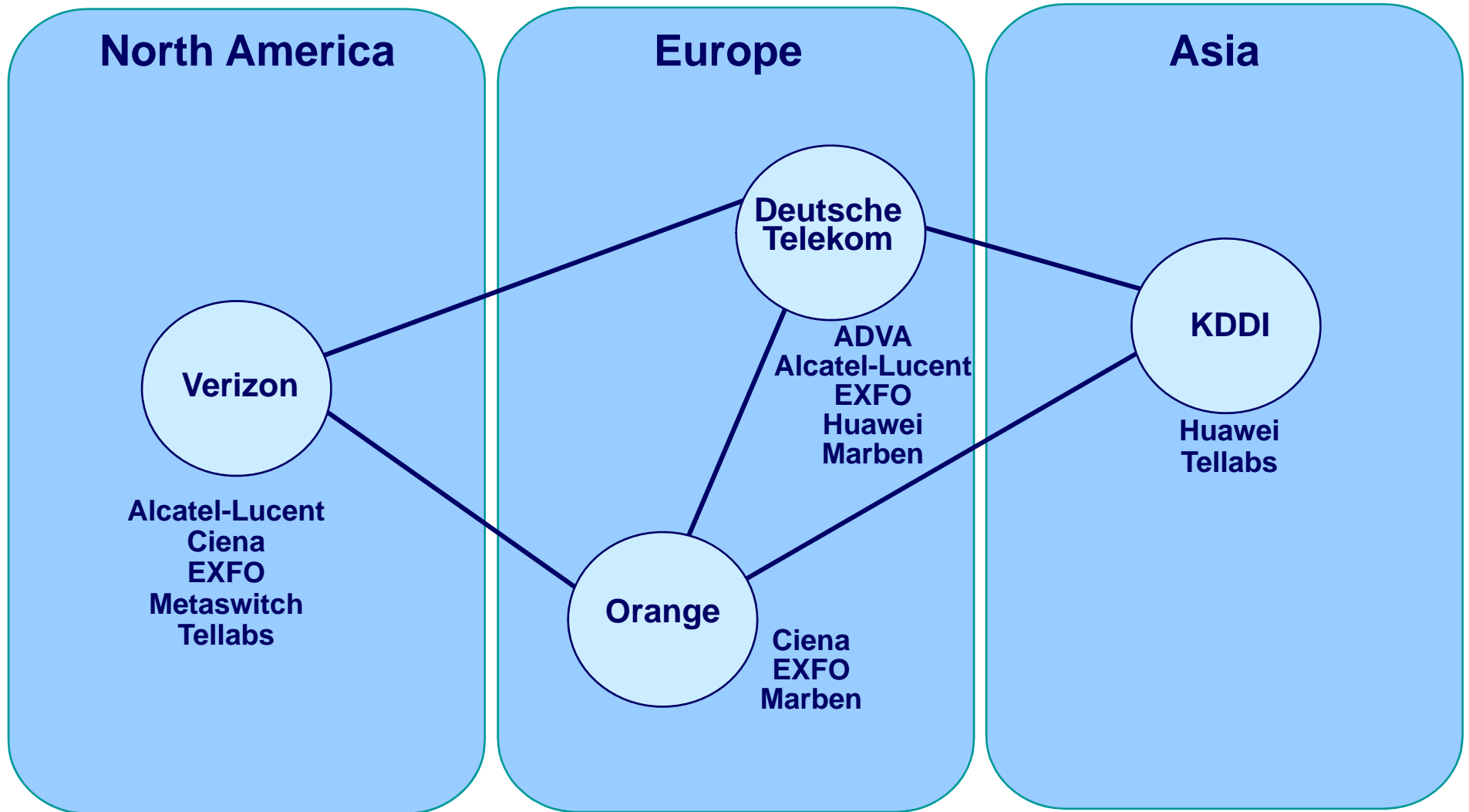
Multi-layer Control Plane Example

Ethernet Services over OTN

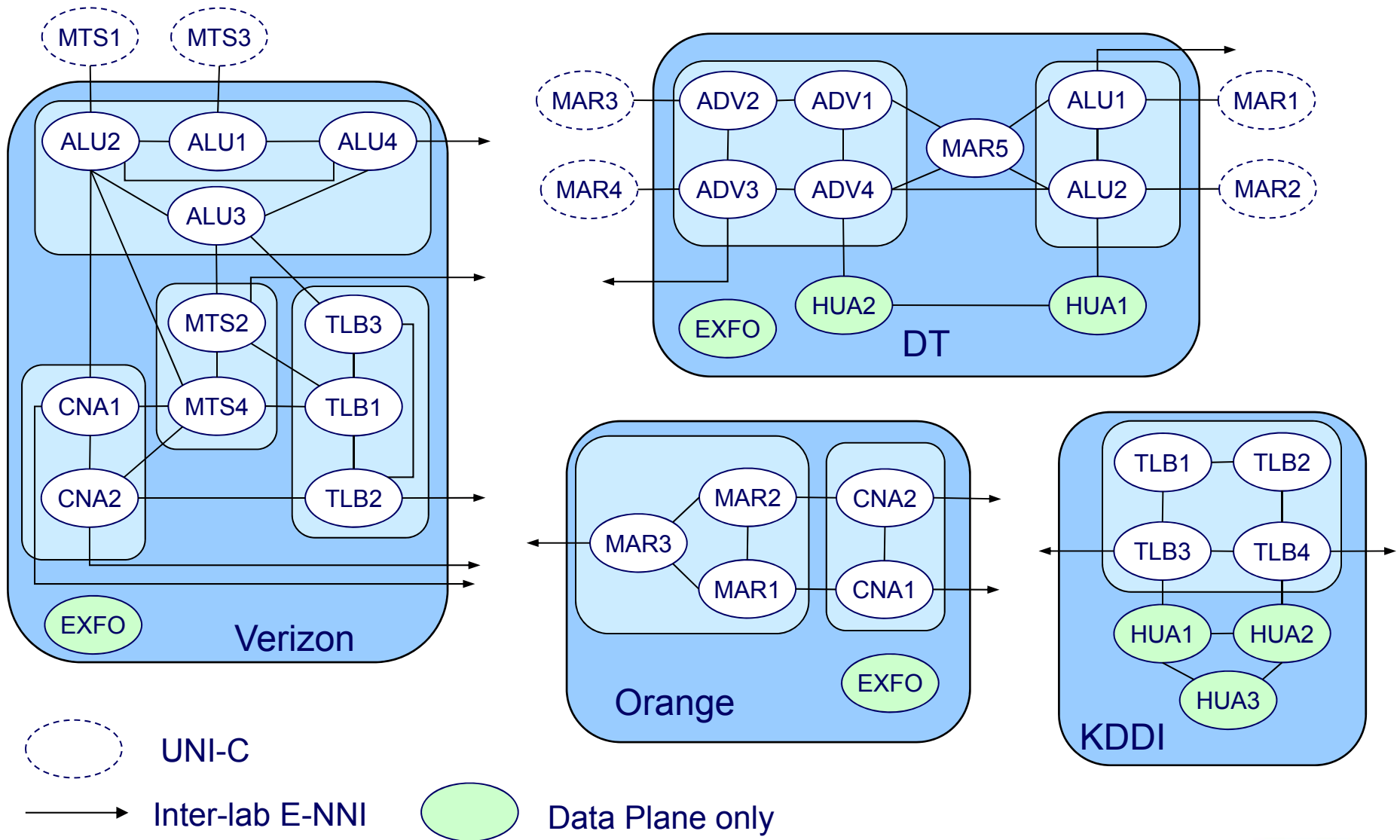


Each Node Supports Specific Layers

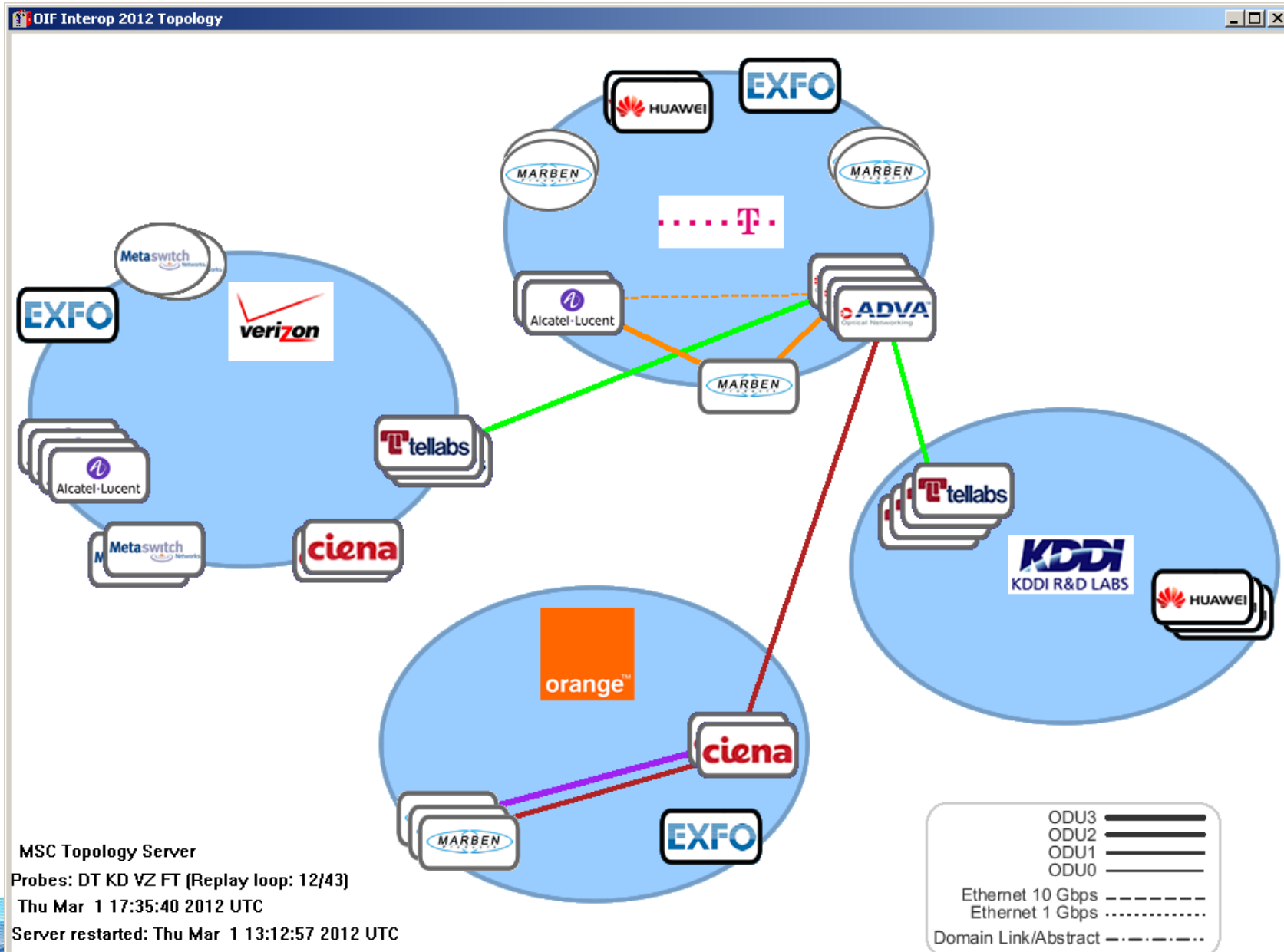
OIF Global Topology 2012



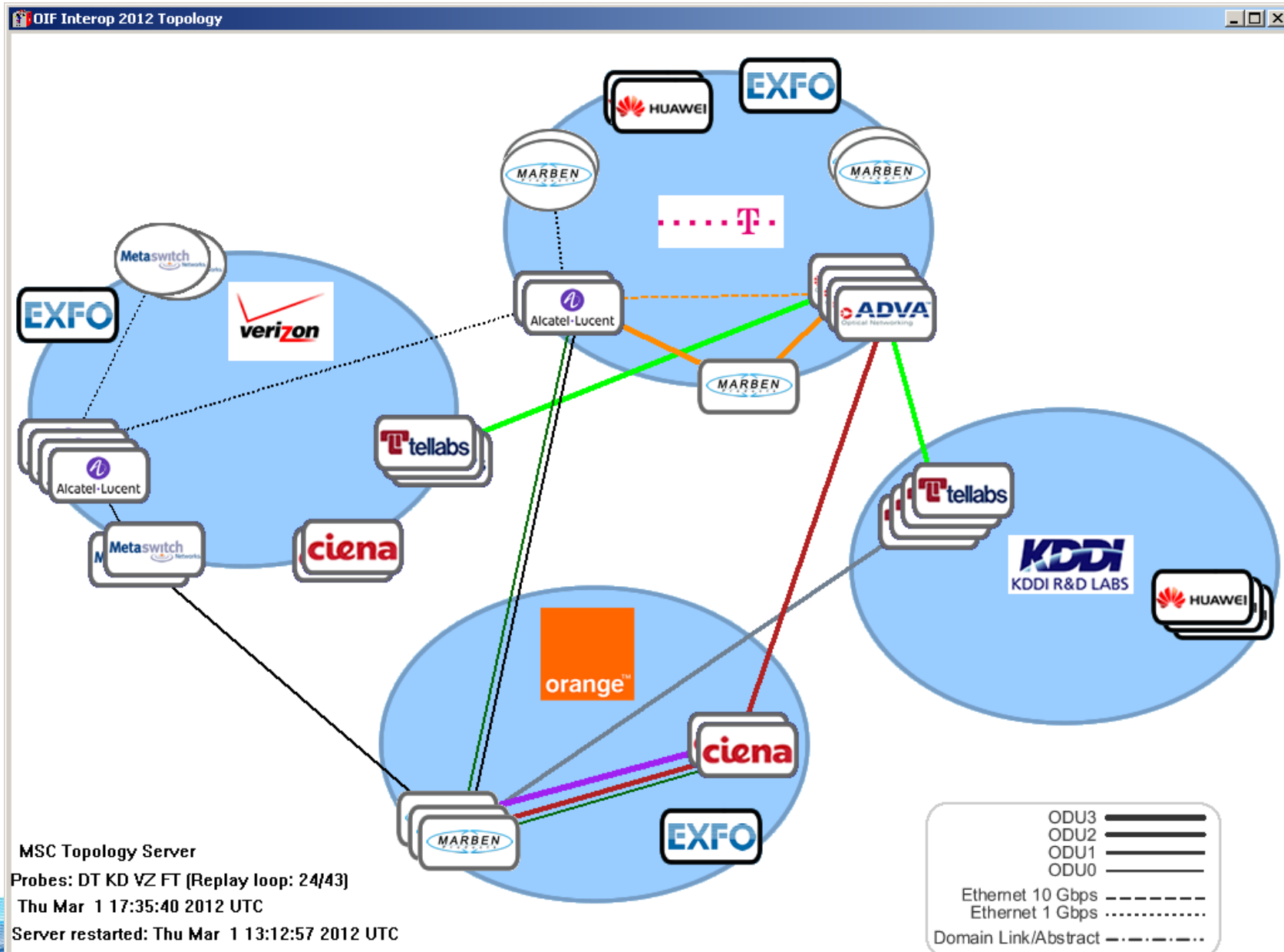
Detailed Network Topology 2012



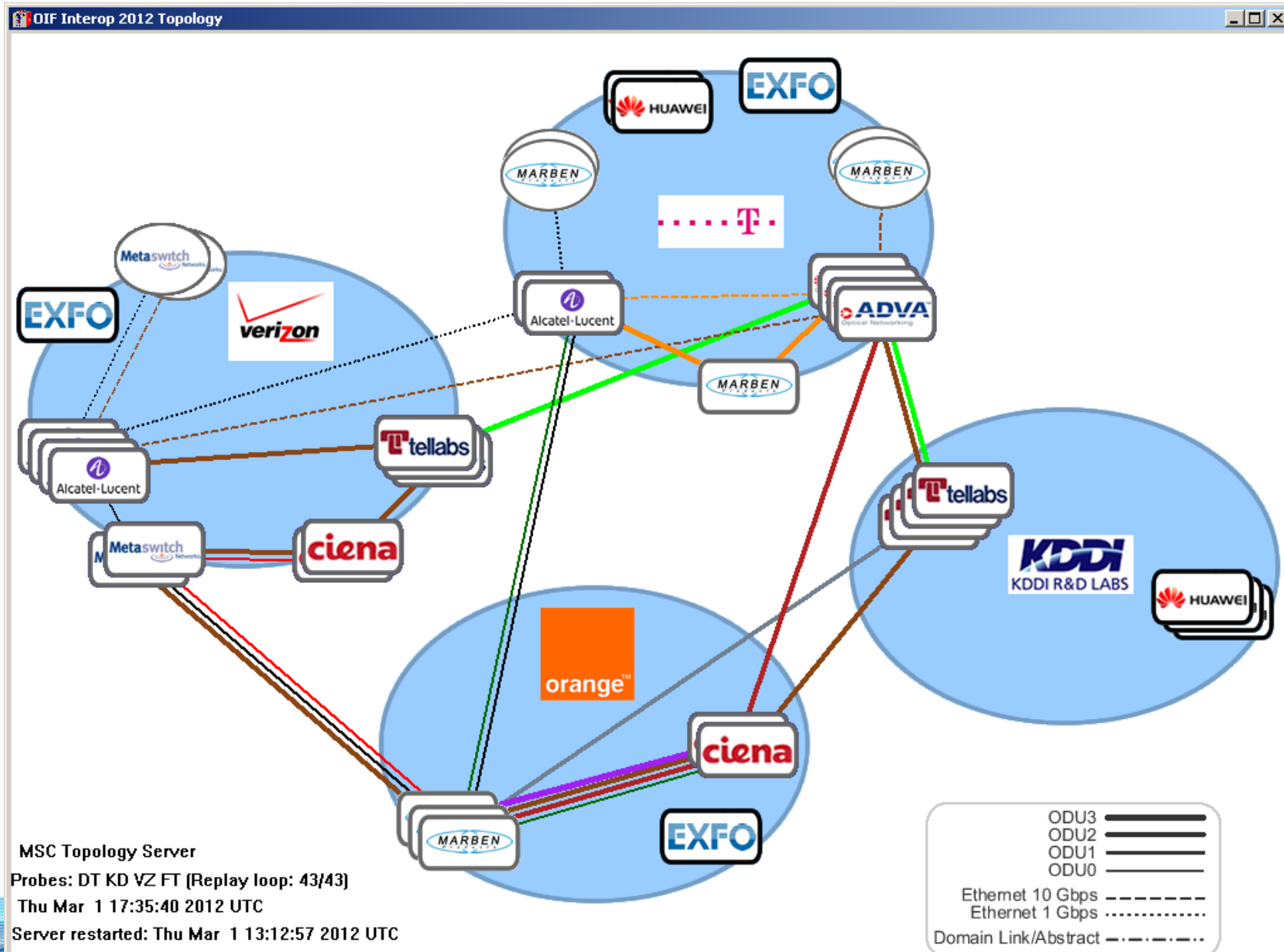
Examples of Connection Setups



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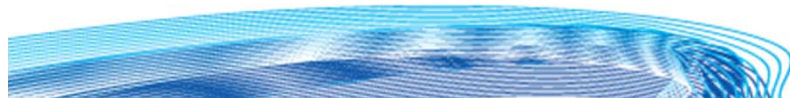
Worldwide Interoperability Practical Test Cases

□ Network Environment

- Multi-vendor and multi-domain networks with ASON/GMPLS-enabled nodes and OTN transport
- Interconnected via an OIF control plane with inter-domain links and supported by a global SCN

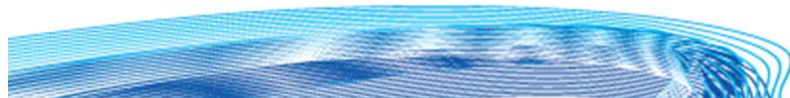
□ Technical Features in Worldwide Demonstration

- UNI 2.0 and E-NNI 2.0 testing for EPL services over OTN
- Ethernet over OTN data plane – adaptation, multiplexing
- Draft GMPLS extensions for OTN hierarchy
- Multi-layer and OTN extensions to E-NNI 2.0
- Control plane security
- Intra-domain service level interworking



Benefits of OIF Ethernet over OTN Demo

- Shows vendor and carrier commitment to interoperability
- Eases system integration of different vendor solutions
- Technical lessons are fed back into standards
- Gives carriers a firsthand look at the latest OTN standards, products and features
- Important stepping stone toward operationalizing the technology



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