

# MEEF

**Introducing the Specifications of the Metro  
Ethernet Forum**

# Introducing the Specifications of the Metro Ethernet Forum

<b>MEF 2</b>	<b>Requirements and Framework for Ethernet Service Protection</b>
<b>MEF 3</b>	<b>Circuit Emulation Service Definitions, Framework and Requirements in Metro Ethernet Networks</b>
<b>MEF 4</b>	<b>Metro Ethernet Network Architecture Framework Part 1: Generic Framework</b>
<b>MEF 6</b>	<b>Metro Ethernet Services Definitions Phase I</b>
<b>MEF 7</b>	<b>EMS-NMS Information Model</b>
<b>MEF 8</b>	<b>Implementation Agreement for the Emulation of PDH Circuits over Metro Ethernet Networks</b>
<b>MEF 9</b>	<b>Abstract Test Suite for Ethernet Services at the UNI</b>
<b>MEF 10</b>	<b>Ethernet Services Attributes Phase I</b>
<b>MEF 11</b>	<b>User Network Interface (UNI) Requirements and Framework</b>
<b>MEF 12</b>	<b>Metro Ethernet Network Architecture Framework Part 2: Ethernet Services Layer</b>
<b>MEF 13</b>	<b>User Network Interface (UNI) Type 1 Implementation Agreement</b>
<b>MEF 14</b>	<b>Abstract Test Suite for Ethernet Services at the UNI</b>
<b>MEF 15</b>	<b>Requirements for Management of Metro Ethernet Phase 1 Network Elements</b>
<b>MEF 16</b>	<b>Ethernet Local Management Interface</b>

\* MEF 10 \* replaced MEF 1 and MEF 5

# This Presentation

- **Purpose**

- This presentation is intended as an introduction and companion to the MEF 13 Specification

- **Audience**

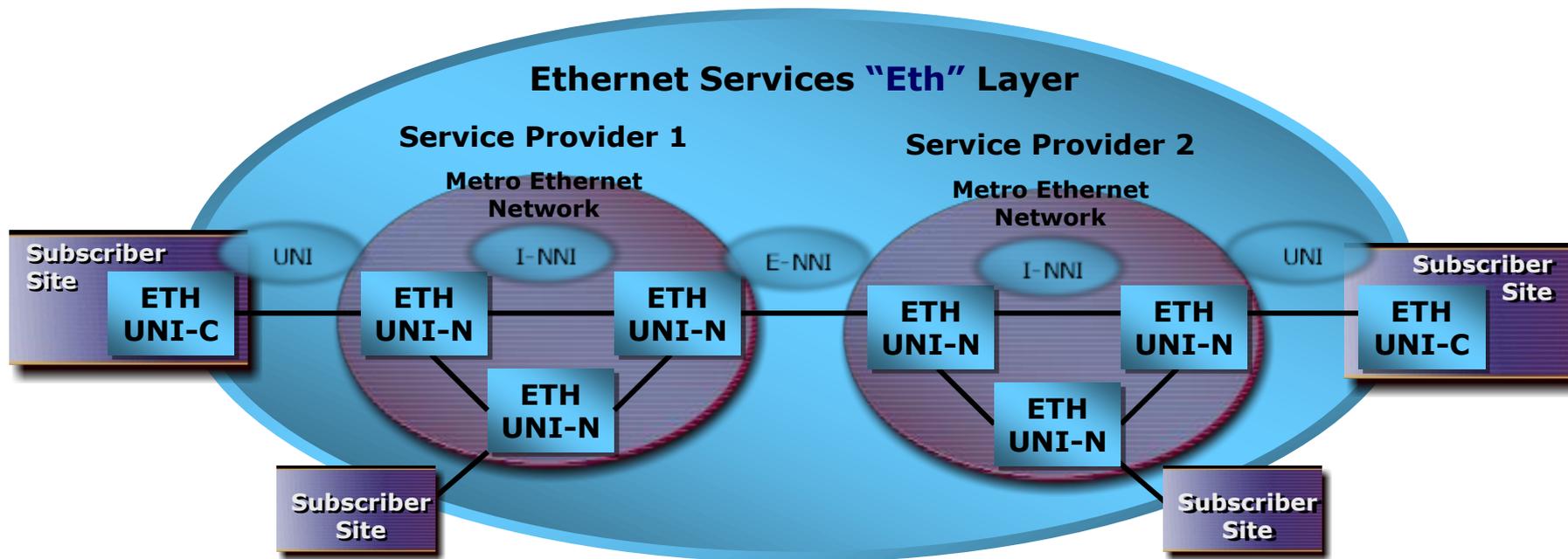
- It is intended for Product Marketing, Engineering staff of member companies, for members of other standards bodies, Enterprise networking staff, and service providers who
  - Would like a quick overview of the specifications
  - Plan to read the specifications in detail

- **Other Documents**

- Presentations of the other specifications and an overview of all specifications is available on the MEF web site
- Other materials such as white papers and case studies are also available

# Introduction to MEF 13

<b>MEF 13</b>	<b>User Network Interface (UNI) Type 1 Implementation Agreement</b>
<b>Purpose</b>	This allows existing Ethernet devices (switch, router, workstation, etc) acting as Customer Edge devices to be compliant to this IA with no additional software or hardware upgrades
<b>Audience</b>	Equipment Manufacturers building devices that will carry Carrier Ethernet Services. Useful for Service Providers architecting their systems.



UNI: User Network Interface, UNI-C: UNI-customer side, UNI-N network side  
 NNI: Network to Network Interface, E-NNI: External NNI; I-NNI Internal NNI

# Objectives of the MEF 13 Implementation Agreement

- **The main objective is to specify the MEF UNI characteristics and operation in manual configuration mode.**
- **This is intended to allow existing Ethernet devices (switch, router, workstation, etc) acting as Customer Edge devices to comply to this IA with no additional software or hardware upgrades. It is, however, a necessary specification as it allows compliance to occur immediately but will be followed by further MEF UNI specifications.**
- **The main functionality allows data-plane Ethernet connectivity between the UNI-C and UNI-N.**
- **This document references MEF UNI Requirements and Framework: MEF 11, User Network Interface (UNI) Requirements and Framework for all concepts, constructs and terminology.**
- **The UNI Type 1 mode provides bare minimum data-plane connectivity services with no control-plane or management-plane capabilities.**

# Content of the Specification

MEF 13 defines the minimum level of compliance, features, functions, required granularity of bandwidth, capacity, protocols, etc.

- **Common Characteristics: Physical Medium and Data Frames**
  - UNI-C and UNI-N interface must comply to one of the IEEE 802.3 PHYs from 10Mbps to 10Gbps and support Ethernet data frames and VLAN tags. (UNI-C “MAY” Support VLAN tags)
  - This section is straightforward and the details are in the specification
- **Service Specific Characteristics: UNI Type 1.1**
  - Supports non-service multiplexed UNIs, such as those required to support the EPL Service defined in MEF 6
- **Service Specific Characteristics: UNI Type 1.2**
  - Supports service multiplexed UNIs, such as those required to support the EVPL service defined in MEF 6

*Further details of the **Service Specific Characteristics** follow on the next few slides*

# Service Specific Characteristics

- **UNI Type 1.1**
  - Supports non-service multiplexed UNIs, such as those required to support the EPL Service defined in MEF 6
  - Definitions cover:
    - EPL CE-VLAN ID
    - CE-VLAN ID/EVC Map,
    - Traffic Management
      - Defines the bandwidth granularity for UNI-C & UNI-N
    - L2 Control Processing
      - Specifies spanning tree management and attribute registration protocols that must be passed by a UNI-N
    - EVC Type,
    - CE-VLAN ID Processing,
    - CE-VLAN CoS Preservation and
    - Service Frame Delivery

# Service Specific Characteristics

- **UNI Type 1.2**
  - Supports service multiplexed UNIs, such as those required to support the EVPL service defined in MEF 6
  - Definitions cover:
    - Service Multiplexing
      - Defines number of EVCs to be supported by bandwidth
    - CE-VLAN ID
      - The number to be supported by bandwidth
    - CE-VLAN ID/EVC Map
    - Bundling
    - Traffic Management
      - Defines the bandwidth granularity for UNI-C & UNI-N
    - L2 Control Processing
      - Specifies spanning tree management and attribute registration protocols that must be passed by a UNI-N
    - EVC Type
    - CE-VLAN ID Processing
    - CE-VLAN CoS Preservation

# Summary and Next Actions

- **After reading this document you should now be familiar with**
  - The scope of MEF 13 and know that the specification defines the simple implementation requirements for UNI-C and UNI-N
- **Next Actions**
  - This introduction to the specification should be read along with the other related introductions and specifications and become familiar with the Eth Layer elements
  - For equipment manufacturers the next step is to read the specification to understand what (if any) changes to your systems are required to comply with the MEF 13 Implementation Agreement
  - Read the MEF 13 Specification to see the details of each element of the 20 clauses of the implementation agreement

# For Full Details ...

... visit [www.metroethernetforum.org](http://www.metroethernetforum.org)  
to access the MEF 13 specification

