Introducing the Specifications of the Metro Ethernet Forum
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* MEF 10 * replaced MEF 1 and MEF 5
This Presentation

• **Purpose**
  – This presentation is intended as an introduction and companion to the MEF 15 Specification

• **Audience**
  – Equipment Manufacturers building devices that will carry Carrier Ethernet Services.
  – Useful for Service Providers architecting their systems

• **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
Purpose of MEF 15

**MEF 15**

**Requirements for Management of Metro Ethernet Phase 1 Network Elements**

**Purpose**

Specifies the network management requirements to be met by Network Elements supporting Ethernet Service Phase 1. MEF 15 specifies the network management requirements to be met by Provider Edge Metro Ethernet Network Elements supporting Ethernet Service Phase 1 [MEF10] providing Carrier Class Ethernet Services.

**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.
This specification focuses on the essential network management functionality of Metro Ethernet Network Elements (ME-NEs) supporting Ethernet Service Phase 1 as defined in MEF10.

The ME-NE is a Provider Edge network element supporting Carrier Ethernet Services.

This specification defines operations requirements supporting:

- The management of interfaces (e.g., User-Network Interface (UNI)), Ethernet Virtual Connections (EVCs / Flow Domain Fragments), and EVC endpoints (Flow Points).

MEF 15 supports other MEF work:

- Ethernet services and service attributes defined to date MEF10
- MEF11 UNI Types 1
Nomenclature

The specification is organized into 39 “Requirement Groups” spanning the following five areas:

• **General Requirements**
  – Management Interface Requirements
  – Transport Layer Interfaces

• **Configuration Management Requirements**
  – Update Notifications
  – Configuration Backup and Recovery
  – Network Provisioning and Installation
  – Service Activation
  – Status Management and Control

• **Fault Management Requirements**
  – Alarm Surveillance
  – Fault Localization
  – Testing

• **Performance Management Requirements**
  – General Performance Monitoring Requirements
  – MEF Specific Performance Monitoring Requirements

• **Security Management Requirements**
  – Network Element Security Management Requirements
General Requirements

• **Management Interface Requirements**
  – Management interfaces (e.g., NE-EMS) provide an open automated or manual means by which management systems can directly or indirectly communicate with and manage various elements within the ME-NE

• **Transport Layer Interfaces**
  – The ME-NE may support various types of transport terminations that are used by the ETH layer as a server layer for the transport of ETH frames as payload
• **Configuration Management**
  – Refers to functions associated with network and service provisioning as well as the administration of the configuration of a ME-NE
  – Deals with the initialization, maintenance, and graceful shutdown of resources within a system

• **Requirements cover**
  – Update Notifications
  – Configuration Backup and Recovery
  – Network Provisioning and Installation
  – Service Activation
  – Status Management and Control
Fault Management and Performance Management Requirements

- Fault Management and Performance Management functions
  - These are designed to maintain the MEN. This includes the maintenance of ME-NEs, ME-NE components, transport terminations, and EVCs. In addition, the Performance Data Collection requirements defined are needed to gather data to support network capacity planning and engineering purposes Alarm Surveillance.
• **Fault Management functions handle**
  – Detection and isolation of faults and the repair of failed components.

• **A fault condition occurs**
  – When a resource fails to function correctly
  – When an excessive number of errors occur.

• **Fault Management assists isolation & diagnostics with**
  – Connectivity tests, integrity tests, response time tests, diagnostic tests,

• **Requirements covered in the Specification:**
  – Fault Localization
  – Testing
• **Performance Management**
  – Collection and analysis of data to assess a resource's ability to carry out its function

• **Requirements cover**
  – General Performance Monitoring Requirements
  – MEF Specific Performance Monitoring Requirements
Security Management Requirements

• **Security management supports ...**
  – Prevention and detection of improper use of network resources and services
  – Containment of and recovery from theft of services or other breaches of security
  – Security administration
  – Prevention, Detection, Containment and Recovery, and Security Administration.
  – Enforcement of security policies

• **Requirements cover ...**
  – Network Element Security Management Requirements
Summary and Next Actions

• After reading this document you should be familiar with

• Next Actions
  – Read the full MEF 15 specification
  – Understand how to implement the management functions
  – Be aware of the capabilities and limitations when implementing Carrier Ethernet Services based on MEF 15
For Full Details …

... visit [www.metroethernetforum.org](http://www.metroethernetforum.org) to access the MEF 15 specification