

# MEF 14 Conformance Test Suite

**Net-O<sub>2</sub> ATTEST™-CTS MEF 14** provides equipment manufacturers and service providers an easy and efficient solution to prepare towards MEF 14 certification and offer Ethernet Services conformant to Metro Ethernet Forum (MEF) specifications.

ATTEST-CTS MEF 14 automated test solution verifies that the devices in the network are able to deliver Ethernet services as per the specified Service Performance and Bandwidth Profile Service Attributes in a Service Level Specification. ATTEST enables significant speeding up of testing cycles and reduces the “time-to-market”.

## Product Overview

**ATTEST-CTS MEF 14** is used to determine the readiness of a Metro Ethernet Network to deliver various service level specifications (SLs). It verifies Ethernet services for the Service Performance and Bandwidth profile attributes as specified by MEF 14 Abstract Test suite, benefiting equipment vendors, service providers and subscribers:

- Equipment vendors are assured that their products can be used in the Metro Ethernet Network (MEN) to allow Subscribers to successfully access Ethernet Services.
- Service Providers can determine the ability of the MEN to offer Ethernet Services conformant to MEF specifications.
- Subscribers are ensured the successful integration of Ethernet Services into their overall networking infrastructures.

## Minimum Platform Requirements

- ❖ ATTEST 6.x Framework
- ❖ ATTEST XC-1000/XB-2000 system
- ❖ 6 Ethernet ports

## Specifications Verified

- ❖ MEF 14 ATS for Traffic Management Phase I
- ❖ MEF 10 Ethernet Service Attributes Phase I
- ❖ Iometrix testplan for Traffic Management Phase 1 Release 2.0

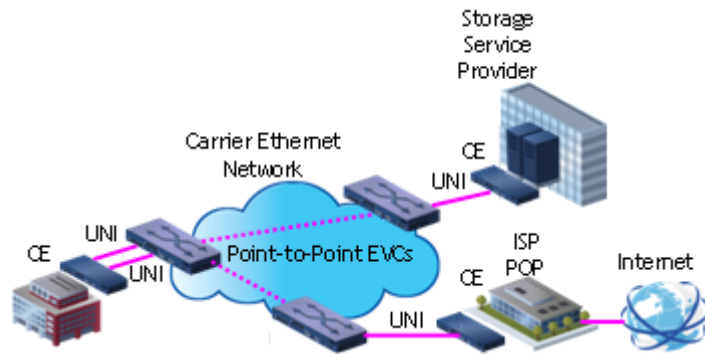
ATTEST-CTS MEF 14 relies on ATTEST -- a powerful test framework that requires minimal time for setup and enables efficient use of time and resources

**Net-O<sub>2</sub>** has devised 170 test cases that comprehensively test the test conditions specified in the MEF 14 ATS. These test cases are designed in such a way to align with the Test Plan for Traffic Management Phase 1 Release 2.0 from Iometrix for MEF 14 certification.

## Ethernet Private Line Service

An Ethernet Private Line (EPL) service uses a single Point-to-Point EVC between two UNIs and does not support Service multiplexing. It is a fully transparent service and all Service frames whether tagged, untagged or priority tagged frames are identical at both the ingress and egress UNIs. Figure 1 shows a typical network topology supporting EPL service.

**ATTEST-CTS MEF14** test suite supports **20** EPL verification test cases. These test cases are functionally grouped such that they verify certain EVC related Performance Attribute or Bandwidth Profile Service Attribute. Table 1 provides the functional grouping and the number of test cases in the ATTEST-CTS MEF 14 that verify the EPL related Service Performance and Bandwidth Profile Service Attributes.



**Figure 1. Example of Carrier Ethernet network deployment with EPL services**

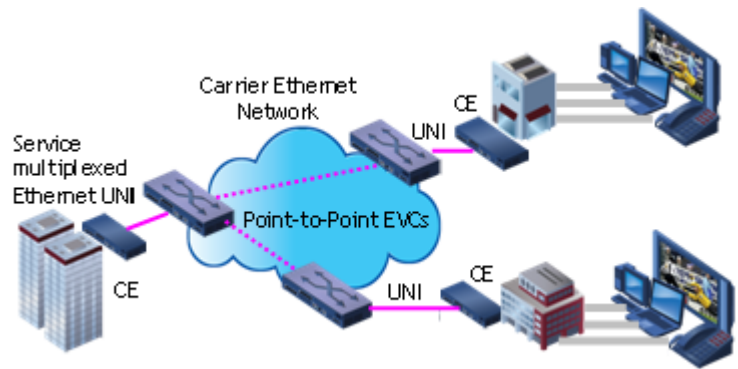
EVC related Performance Service Attributes (number of test cases)	Bandwidth Profile Service Attributes (number of test cases)
Frame Delay Service Performance – Single EVC (5)	Bandwidth Profile Rate Enforcement when CIR > 0 and EIR = 0 (4)
Frame Delay Variation Service Performance – Single EVC (5)	
Frame Loss Ratio Service Performance – Single EVC (5)	Bandwidth Profile per Ingress UNI (1)

**Table 1. Functional grouping of ATTEST-CTS MEF14 EPL test cases**

## Ethernet Virtual Private Line Service

An Ethernet Virtual Private Line (EVPL) service uses Point-to-Point EVCs between two UNIs and supports Service multiplexing. An EVPL service need not provide full transparency of service frames and these frames may or may not be preserved at the ingress and egress UNIs. Figure 2 shows a typical network topology supporting EVPL service.

**ATTEST-CTS MEF14** test suite supports **105** EVPL verification test cases. These test cases are functionally grouped such that they verify certain EVC related Performance Attribute or Bandwidth Profile Service Attribute. Table 2 provides the functional grouping and the number of test cases in the ATTEST-CTS MEF 14 that verify the EVPL related Service Performance and Bandwidth Profile Service Attributes.



**Figure 2. Example of Carrier Ethernet network deployment with EVPL services**

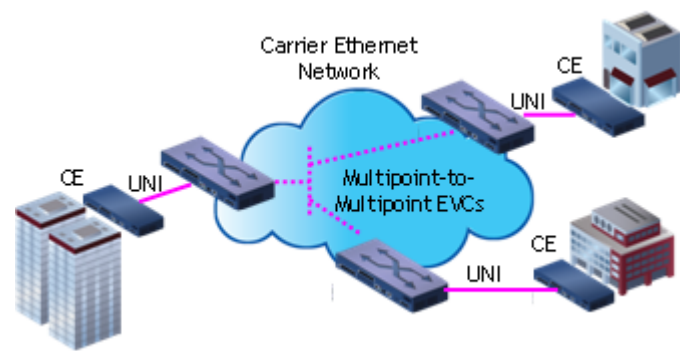
EVC related Performance Service Attributes (number of test cases)	Bandwidth Profile Service Attributes (number of test cases)
Frame Delay Service Performance – Single EVC (15)	Bandwidth Profile Rate Enforcement when CIR > 0 and EIR = 0 (12)
Frame Delay Service Performance – Multiple EVCs (5)	Bandwidth Profile Rate Enforcement when CIR = 0 and EIR > 0 (12)
Frame Delay Variation Service Performance – Single EVC (15)	Bandwidth Profile Rate Enforcement when CIR > 0 and EIR > 0 (12)
Frame Delay Variation Service Performance – Multiple EVCs (5)	Bandwidth Profile per Ingress UNI (6)
Frame Loss Ratio Service Performance – Single EVC (15)	Bandwidth Profile per EVC (1)
Frame Loss Ratio Service Performance – Multiple EVCs (5)	Bandwidth Profile per Class of Service (1)
	Multiple Bandwidth Profiles at the UNI (1)

**Table 2. Functional grouping of ATTEST-CTS MEF14 EVPL test cases**

## Ethernet Private LAN/Virtual Private LAN Service

An Ethernet Private LAN or an Ethernet Virtual Private LAN service uses Multipoint-to-Multipoint EVCs between at least three UNIs and supports Service multiplexing. An EVP-LAN service need not provide full transparency of service frames and these frames may or may not be preserved at the ingress and egress UNIs. Figure 3 shows a typical network topology supporting EP-LAN service.

**ATTEST-CTS MEF14** test suite supports **45** E-LAN verification test cases. These test cases are functionally grouped such that they verify certain EVC related Performance Attribute or Bandwidth Profile Service Attribute. Table 3 provides the functional grouping and the number of test cases in the ATTEST-CTS MEF 14 that verify the EP-LAN related Service Performance and Bandwidth Profile Service Attributes.



**Figure 3. Example of Carrier Ethernet network deployment with EP-LAN services**

<b>Bandwidth Profile Service Attributes (number of test cases)</b>
Bandwidth Profile Rate Enforcement when CIR > 0 and EIR = 0 (12)
Bandwidth Profile Rate Enforcement when CIR = 0 and EIR > 0 (12)
Bandwidth Profile Rate Enforcement when CIR > 0 and EIR > 0 (12)
Bandwidth Profile per Ingress UNI (6)
Bandwidth Profile per EVC (1)
Bandwidth Profile per Class of Service (1)
Multiple Bandwidth Profiles at the UNI(1)

**Table 3. Functional grouping of ATTEST-CTS MEF14 E-LAN test cases**

## Net-O<sub>2</sub> ATTEST Test suites

Together with ATTEST-CTS MEF 9 and MEF 21 test suites, Net-O<sub>2</sub> provides a complete set of tests for preparation towards MEF Certification requirements. Net-O<sub>2</sub> ATTEST-CTS and ATTEST-XP Carrier Ethernet test suites provide comprehensive verification for Carrier Ethernet functionality. Test suites for IPv4, IPv6 and Layer-2 bridging are also available.

## About Net-O<sub>2</sub> Technologies

Net-O<sub>2</sub> is an innovative communications products company that provides solutions in the Testing and Test Automation domains. The unique offerings from Net-O<sub>2</sub> enable customers to drastically reduce the “time-required-to-test” and enhance their “time-to-market”. Net-O<sub>2</sub> offers a wide range of automated test suites to address IP Protocols, Layer 2 Protocols and related standards for applications in Access, Carrier Ethernet, Multi-service, Data Center, Edge, Enterprise, Industrial Networking and Network Security.

### For information contact:

#### UNITED STATES

Net-O<sub>2</sub> Technologies Inc.  
16 West Main Street  
Christiana  
DE 19702.  
Phone: +1 866 638 0272



#### INDIA

Net-O<sub>2</sub> Technologies Pvt. Ltd.  
Floor I, RR Tower III  
T.V.K. Industrial Estate  
Guindy, Chennai 600032.  
Phone: +91 44 2250 0370

Email: [info@net-o2.com](mailto:info@net-o2.com)

Web : [www.net-o2.com](http://www.net-o2.com)