MPLIFY

Testing Guide

# Carrier Ethernet Certification Blueprint

January 2026

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# 1. Abstract

Mplify is evolving the Carrier Ethernet Certification Program by:

- Rebranding the existing MEF 3.0 CE certifications to Carrier Ethernet for Business
- Introducing the first phase of Carrier Ethernet for AI certifications

The service types eligible for Carrier Ethernet (CE) for Business certification are E-Line, E-LAN, E-Tree, Access E-Line, and Transit E-Line. CE for Business certification testing is based on the requirements specified in MEF 91 '*Carrier Ethernet Test Requirements*' and MEF 91.0.1 '*Amendment to MEF 91: Satellite Performance Tier*'. For each service type eligible for CE for Business certification, the test requirement references and a description of the tested attributes, parameters and values are listed in tables 3 through 12 of this document and referred to as the **'Business Profiles**'.

The service types eligible for Carrier Ethernet (CE) for AI certification are E-Line, Access E-Line, and Transit E-Line. CE for AI certification testing is based on the requirements specified in MEF 91 '*Carrier Ethernet Test Requirements*' and MEF 91.0.1 '*Amendment to MEF 91: Satellite Performance Tier*'. For each service type eligible for CE for AI certification, the test requirement references and a description of the tested attributes, parameters and values are listed in tables 3 through 8 of this document and referred to as the **'AI Profiles**'.

The purpose of this document is to provide a framework for testing and certification of Carrier Ethernet Services supporting business and AI applications. It is not intended to mandate how Operators, Service Providers or Subscribers map particular applications to specific Performance Tiers and CoS Labels within their networks.

# 2. Scope

The service types that are in scope for CE for Business and CE for AI certifications phase 1 are listed in the following table.

| | CE for Business Certification | CE for AI Certification |
|---|---|---|
| E-Line | • | • |
| Access E-Line | • | • |
| Transit E-Line | • | • |
| E-LAN | • | |
| E-Tree | • | |

*Table 1: Service types in scope for CE for Business and CE for AI certifications phase 1*

The combinations of Performance Tiers (PTs) and CoS Labels that are in scope for CE for Business and CE for AI certifications phase 1 are listed in the following table.

| | CE for Business Certification | CE for AI Certification |
|---|---|---|
| PT0.3 CoS Label H | • | • |
| PT0.3 CoS Label M | • | |
| PT0.3 CoS Label L | • | |
| PT1 CoS Label H | • | |
| PT1 CoS Label M | • | |
| PT1 CoS Label L | • | |
| PT2 CoS Label H | • | |
| PT2 CoS Label M | • | |
| PT2 CoS Label L | • | |
| PT3 CoS Label H | • | |
| PT3 CoS Label M | • | |
| PT3 CoS Label L | • | |
| PT4 CoS Label H | • | |
| PT4 CoS Label M | • | |
| PT4 CoS Label L | • | |
| PT5 CoS Label H | • | |
| PT5 CoS Label M | • | |
| PT5 CoS Label L | • | |
| Note 1: New Performance Tiers and associated CoS Labels and Performance Objectives are currently being defined in MEF 23.3 and may be added to the scope of this document, in the future. | | |

*Table 2: Performance Tiers and CoS Labels in scope for CE for Business and CE for AI certifications phase 1*

# 3. E-Line Service - Business and AI Profiles

## 3.1 Service Provider Certification

| E-Line | CE for Business Certification | CE for AI Certification |
|---|---|---|
| Test Requirements | Business Profile | AI Profile *** Orange values are to be agreed within TCC* |
| MEF 91/91.0.1 Index | Functional Testing | Functional Testing |
| 2 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 11, 38, 40, 41 | Tested with one point-to-point EVC connecting two UNIs | Tested with one point-to-point EVC connecting two UNIs |
| 7, 48 | Tested with UNI and EVC MFS ≥ 1522-Byte | Tested with UNI and EVC MFS ≥ 9000-Byte |
| 9, 10, 12, 13 | Tested with one of [All, List, UT/PT] mappings | Tested with one of [All, List, UT/PT] mappings |
| 6 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 45 | Tested with one of CE-VLAN ID preservation [Enabled, Disabled] | Tested with one of CE-VLAN ID preservation [Enabled, Disabled] |
| 46 | Tested with one of CoS ID preservation [Enabled, Disabled] | Tested with one of CoS ID preservation [Enabled, Disabled] |
| 42 | Tested with one of Unicast Delivery [Unconditional, Conditional] | Tested with one of Unicast Delivery [Unconditional, Conditional] |
| 43 | Tested with one of Multicast Delivery [Unconditional, Conditional, Discard] | Tested with one of Multicast Delivery [Unconditional, Conditional, Discard] |
| 44 | Tested with one of Broadcast Delivery [Unconditional, Conditional, Discard] | Tested with one of Broadcast Delivery [Unconditional, Conditional, Discard] |
| 35 | Tested with one of Source MAC Address Limit [Enabled, Disabled] | Tested with one of Source MAC Address Limit [Enabled, Disabled] |
| MEF 91/91.0.1 Index | Class of Service Testing | Class of Service Testing |
| 24, 25, 26, 28, 29, 30 | Tested with one of [Single, Multiple] Classes of Service | Tested with one of [Single, Multiple] Classes of Service |
| 24, 25, 26, 28, 29, 30 | Tested with one of [EVC EP, PCP, IP/DSCP] Class of Service Identifiers | Tested with one of [EVC EP, PCP, IP/DSCP] Class of Service Identifiers |
| 27, 33, 34 | Tested with one of [PCP, DEI, IP/DSCP] Color Identifiers | - |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing | Bandwidth Profile Testing |
| 14, 15 | Tested with one BWP Flow per Envelope & Token Share Disabled | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 33, 34 | Tested with one of [Committed only, Committed + Excess] Information Rates and Burst Sizes. *(Note 1)* | Tested with Committed Information Rates and Burst Sizes |
| 33, 34 | If Committed + Excess, tested with Σ Committed & Excess Information Rates up to 75% of EI Speed | - |
| 33, 34 | If Committed only, tested with Σ Committed Information Rates up to 75% of EI Speed | Tested with Σ Committed Information Rates up to 95% of EI Speed |
| 33, 34 | Tested with one of [Color Blind, Color Aware] mode | Tested with Color Blind mode |
| 33, 34 | Tested with one of [CF=0, CF=1] | Tested with CF=0 |
| 33, 34, 6 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes | Tested with a range of IEEE 802.3 Ethernet frames up to 9000 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing | L2CP Testing |
| 21, 22 | Tested with one of [CTA, CTB, CTB-2] Address Sets | Tested with one of [CTA, CTB, CTB-2] Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing | SOAM Testing |
| 37 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 37 | Tested with one of [Enabled, Disabled] Subscriber MEG MIP | Tested with one of [Enabled, Disabled] Subscriber MEG MIP |
| MEF 91/91.0.1 Index | Performance Testing | Performance Testing |
| 47 | Tested with one of [PT0.3, PT1, PT2, PT3, PT4, PT5] Performance Tier | Tested with PT 0.3 Performance Tier. *(Note 2)* |
| 47 | Tested with at least one of [High, Medium, Low] CoS Label & Parameter Values | Tested with High CoS Label & Parameter Values. *(Note 2)* |
| MEF 91/91.0.1 Index | Efficiency Testing | Efficiency Testing |
| 33, 34, 7 | - | Tested with information rate ≥ 99% of EI Speed, without bandwidth profile, using MFS-Byte frames, and FLR performance objective ≤ 0.001% |
| MEF 91/91.0.1 Index | Uptime Testing | Uptime Testing |
| 47 | - | *(Note 3)* |

Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification.
Note 2: New PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3 may be added to the PTs and CoS Label & Parameter Values available for CE for AI certification.
Note 3: Availability testing may be added to CE for AI certification testing if the metric gets included part of the new PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3.

*Table 3: E-Line Business and AI Profiles for Service Provider Certification*

## 3.2 Technology Provider Certification

| E-Line | CE for Business Certification | CE for AI Certification |
|---|---|---|
| Test Requirements | Business Profile | AI Profile ** *Orange values are to be agreed within TCC* |
| MEF 91/91.0.1 Index | Functional Testing | Functional Testing |
| 2 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 11, 38, 40, 41 | Tested with one point-to-point EVC connecting two UNIs | Tested with one point-to-point EVC connecting two UNIs |
| 7, 48 | Tested with UNI and EVC MFS = 1522-Byte | Tested with UNI and EVC MFS ≥ 9000-Byte |
| 9, 10, 12, 13 | Tested with All, List and UT/PT mappings | Tested with All, List and UT/PT mappings |
| 6 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 45 | Tested with CE-VLAN ID preservation Enabled and Disabled | Tested with CE-VLAN ID preservation Enabled and Disabled |
| 46 | Tested with CoS ID preservation Enabled and Disabled | Tested with CoS ID preservation Enabled and Disabled |
| 42 | Tested with Unicast Delivery Unconditional | Tested with Unicast Delivery Unconditional |
| 43 | Tested with Multicast Delivery Unconditional, Conditional and Discard | Tested with Multicast Delivery Unconditional, Conditional and Discard |
| 44 | Tested with Broadcast Delivery Unconditional, Conditional and Discard | Tested with Broadcast Delivery Unconditional, Conditional and Discard |
| 35 | Tested with Source MAC Address Limit Enabled and Disabled | Tested with Source MAC Address Limit Enabled and Disabled |
| MEF 91/91.0.1 Index | Class of Service Testing | Class of Service Testing |
| 24, 25, 26, 28, 29, 30 | Tested with Single and Multiple Classes of Service | Tested with Single and Multiple Classes of Service |
| 24, 25, 26, 28, 29, 30 | Tested with EVC EP, PCP and IP/DSCP Class of Service Identifiers | Tested with EVC EP, PCP and IP/DSCP Class of Service Identifiers |
| 27, 33, 34 | Tested with PCP, DEI and IP/DSCP Color Identifiers | - |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing | Bandwidth Profile Testing |
| 14, 15 | Tested with one BWP Flow per Envelope & Token Share Disabled | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 33, 34 | Tested with Committed only and Committed + Excess Information Rates and Burst Sizes. *(Note 1)* | Tested with Committed Information Rates and Burst Sizes |
| 33, 34 | Tested with Σ Committed & Excess Information Rates up to 75% of EI Speed | - |
| 33, 34 | Tested with Σ Committed Information Rates up to 75% of EI Speed | Tested with Σ Committed Information Rates up to 95% of EI Speed |
| 33, 34 | Tested with Color Blind and Color Aware modes | Tested with Color Blind mode |
| 33, 34 | Tested with CF=0 and CF=1 | Tested with CF=0 |
| 33, 34, 6,7 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes | Tested with a range of IEEE 802.3 Ethernet frames up to 9000 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing | L2CP Testing |
| 21, 22 | Tested with CTA, CTB and CTB-2 Address Sets | Tested with CTA, CTB and CTB-2 Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing | SOAM Testing |
| 37 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 37 | Tested with Subscriber MEG MIP Enabled and Disabled | Tested with Subscriber MEG MIP Enabled and Disabled |
| MEF 91/91.0.1 Index | Performance Testing | Performance Testing |
| 47 | Tested with PT0.3 Performance Tier | Tested with PT 0.3 Performance Tier. *(See note 2)* |
| 47 | Tested with High, Medium and Low CoS Label & Parameter Values | Tested with High CoS Label & Parameter Values. *(See note 2)* |
| MEF 91/91.0.1 Index | Efficiency Testing | Efficiency Testing |
| 33, 34 | - | Tested with information rate ≥ 99% of EI Speed, without bandwidth profile, using MFS-Byte frames, and FLR performance objective ≤ 0.001% |
| MEF 91/91.0.1 Index | Uptime Testing | Uptime Testing |
| 47 | - | *(Note 3)* |

Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification.
Note 2: New PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3 may be added to the PTs and CoS Label & Parameter Values available for CE for AI certification.
Note 3: Availability testing may be added to CE for AI certification testing if the metric gets included part of the new PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3.

*Table 4: E-Line Business and AI Profiles for Technology Provider Certification*

# 4. Access E-Line Service - Business and AI Profiles

## 4.1 Service Provider Certification

| Access E-Line | CE for Business Certification | CE for AI Certification |
|---|---|---|
| Test Requirements | Business Profile | AI Profile *** Orange values are to be agreed within TCC* |
| MEF 91/91.0.1 Index | Functional Testing | Functional Testing |
| 146, 173 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 169, 185, 186, 187, 188 | Tested with one point-to-point OVC connecting one UNI and one ENNI | Tested with one point-to-point OVC connecting one UNI and one ENNI |
| 152, 183, 189 | Tested with UNI MFS ≥ 1522-Byte and ENNI and OVC MFS ≥ 1526-Byte | Tested with UNI MFS ≥ 9000-Byte and ENNI and OVC MFS ≥ 9004-Byte |
| 153, 201, 212 | Tested with one of [All, List, UT/PT] mappings at UNI and single S-VLAN ID at ENNI | Tested with one of [All, List, UT/PT] mappings at UNI and single S-VLAN ID at ENNI |
| 151, 174 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 190 | Tested with CE-VLAN ID preservation Preserved | Tested with CE-VLAN ID preservation Preserved |
| 191 | Tested with CoS ID preservation Enabled | Tested with CoS ID preservation Enabled |
| 196 | Tested with Unicast Unconditional Delivery | Tested with Unicast Unconditional Delivery |
| 197 | Tested with Multicast Unconditional Delivery | Tested with Multicast Unconditional Delivery |
| 198 | Tested with Broadcast Unconditional Delivery | Tested with Broadcast Unconditional Delivery |
| 207, 218 | Tested with one of Source MAC Address Limit [Enabled, Disabled] | Tested with one of Source MAC Address Limit [Enabled, Disabled] |
| MEF 91/91.0.1 Index | Class of Service Testing | Class of Service Testing |
| 202, 213 | Tested with one of [Single, Multiple] Classes of Service | Tested with one of [Single, Multiple] Classes of Service |
| 202, 213 | Tested with one of [OVC EP, PCP, IP/DSCP] Class of Service Identifiers | Tested with one of [OVC EP, PCP, IP/DSCP] Class of Service Identifiers |
| 204, 215 | Tested with one of [PCP, DEI, IP/DSCP] Color Identifiers | - |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing | Bandwidth Profile Testing |
| 162, 163, 170, 171 | Tested with one BWP Flow per Envelope & Token Share Disabled | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 204, 215 | Tested with one of [Committed only, Committed + Excess] Information Rates and Burst Sizes. *(See note 1)* | Tested with Committed Information Rates and Burst Sizes |
| 204, 215 | If Committed + Excess, tested with Σ Committed & Excess Information Rates up to 75% of EI Speed | - |
| 204, 215 | If Committed only, tested with Σ Committed Information Rates up to 75% of EI Speed | Tested with Σ Committed Information Rates up to 95% of EI Speed |
| 204, 215 | Tested with one of [Color Blind, Color Aware] mode | Tested with Color Blind mode |
| 204, 215 | Tested with one of [CF=0, CF=1] | Tested with CF=0 |
| 204, 215, 151, 174 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes | Tested with a range of IEEE 802.3 Ethernet frames up to 9000 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing | L2CP Testing |
| 164, 165, 181, 182 | Tested with one of [CTA, CTB, CTB-2] Address Sets | Tested with one of [CTA, CTB, CTB-2] Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing | SOAM Testing |
| 199 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 199 | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level |
| 209, 220 | Tested with one of [Enabled, Disabled] Subscriber MEG MIP and SP MEG MIP | Tested with one of [Enabled, Disabled] Subscriber MEG MIP and SP MEG MIP |
| MEF 91/91.0.1 Index | Performance Testing | Performance Testing |
| 195 | Tested with one of [PT0.3, PT1, PT2, PT3, PT4, PT5] Performance Tier | Tested with PT 0.3 Performance Tier. *(Note 2)* |
| 195 | Tested with at least one of [High, Medium, Low] CoS Label & Parameter Values | Tested with High CoS Label & Parameter Values. *(Note 2)* |
| MEF 91/91.0.1 Index | Efficiency Testing | Efficiency Testing |
| 204, 215, 152, 183, 189 | - | Tested with information rate ≥ 99% of EI Speed, without bandwidth profile, using MFS-Byte frames, and FLR performance objective ≤ 0.001% |
| MEF 91/91.0.1 Index | Uptime Testing | Uptime Testing |
| 195 | Not tested | *(Note 3)* |

Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification.
Note 2: New PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3 may be added to the PTs and CoS Label & Parameter Values available for CE for AI certification.
Note 3: Availability testing may be added to CE for AI certification testing if the metric gets included part of the new PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3.

*Table 5: Access E-Line Business and AI Profiles for Service Provider Certification*

## 4.2 Technology Provider Certification

| Access E-Line | CE for Business Certification | CE for AI Certification |
|---|---|---|
| Test Requirements | Business Profile | AI Profile *** Orange values are to be agreed within TCC* |
| MEF 91/91.0.1 Index | Functional Testing | Functional Testing |
| 146, 173 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 169, 185, 186, 187, 188 | Tested with one point-to-point OVC connecting one UNI and one ENNI | Tested with one point-to-point OVC connecting one UNI and one ENNI |
| 152, 183, 189 | Tested with UNI MFS = 1522-Byte and ENNI and OVC MFS = 1526-Byte | Tested with UNI MFS ≥ 9000-Byte and ENNI and OVC MFS ≥ 9004-Byte |
| 153, 201, 212 | Tested with All and List mappings at UNI and one S-VLAN ID at ENNI | Tested with All and List mappings at UNI and one S-VLAN ID at ENNI |
| 151, 174 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 190 | Tested with CE-VLAN ID preservation Preserved | Tested with CE-VLAN ID preservation Preserved |
| 191 | Tested with CoS ID preservation Enabled | Tested with CoS ID preservation Enabled |
| 196 | Tested with Unicast Unconditional Delivery | Tested with Unicast Unconditional Delivery |
| 197 | Tested with Multicast Unconditional Delivery | Tested with Multicast Unconditional Delivery |
| 198 | Tested with Broadcast Unconditional Delivery | Tested with Broadcast Unconditional Delivery |
| 207, 218 | Tested with Source MAC Address Limit Enabled and Disabled | Tested with Source MAC Address Limit Enabled and Disabled |
| MEF 91/91.0.1 Index | Class of Service Testing | Class of Service Testing |
| 202, 213 | Tested with Single and Multiple Classes of Service | Tested with Single and Multiple Classes of Service |
| 202, 213 | Tested with OVC EP, PCP and IP/DSCP Class of Service Identifiers | Tested with OVC EP, PCP and IP/DSCP Class of Service Identifiers |
| 204, 215 | Tested with PCP, DEI and IP/DSCP Color Identifiers | - |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing | Bandwidth Profile Testing |
| 162, 163, 170, 171 | Tested with one BWP Flow per Envelope & Token Share Disabled | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 204, 215 | Tested with Committed only and Committed + Excess Information Rates and Burst Sizes. *(See note 1)* | Tested with Committed Information Rates and Burst Sizes |
| 204, 215 | Tested with Σ Committed & Excess Information Rates up to 75% of EI Speed | - |
| 204, 215 | Tested with Σ Committed Information Rates up to 75% of EI Speed | Tested with Σ Committed Information Rates up to 95% of EI Speed |
| 204, 215 | Tested with Color Blind and Color Aware modes | Tested with Color Blind mode |
| 204, 215 | Tested with CF=0 and CF=1 | Tested with CF=0 |
| 204, 215, 151, 174 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes | Tested with a range of IEEE 802.3 Ethernet frames up to 9000 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing | L2CP Testing |
| 164, 165, 181, 182 | Tested with CTA, CTB and CTB-2 Address Sets | Tested with CTA, CTB and CTB-2 Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing | SOAM Testing |
| 199 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 199 | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level |
| 209, 220 | Tested with Enabled and Disabled Subscriber MEG MIP and SP MEG MIP | Tested with Enabled and Disabled Subscriber MEG MIP and SP MEG MIP |
| MEF 91/91.0.1 Index | Performance Testing | Performance Testing |
| 195 | Tested with PT0.3 Performance Tier | Tested with PT 0.3 Performance Tier. *(See note 2)* |
| 195 | Tested with High, Medium and Low CoS Label & Parameter Values | Tested with High CoS Label & Parameter Values. *(See note 2)* |
| MEF 91/91.0.1 Index | Efficiency Testing | Efficiency Testing |
| 204, 215, 152, 183, 189 | - | Tested with information rate ≥ 99% of EI Speed, without bandwidth profile, using MFS-Byte frames, and FLR performance objective ≤ 0.001% |
| MEF 91/91.0.1 Index | Uptime Testing | Uptime Testing |
| 195 | - | *(Note 3)* |

Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification.
Note 2: New PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3 may be added to the PTs and CoS Label & Parameter Values available for CE for AI certification.
Note 3: Availability testing may be added to CE for AI certification testing if the metric gets included part of the new PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3.

*Table 6: Access E-Line Business and AI Profiles for Technology Provider Certification*

# 5. Transit E-Line Service - Business and AI Profiles

## 5.1 Service Provider Certification

| Transit E-Line | CE for Business Certification | CE for AI Certification |
|---|---|---|
| Test Requirements | Business Profile | AI Profile *** Orange values are to be agreed within TCC* |
| MEF 91/91.0.1 Index | Functional Testing | Functional Testing |
| 228 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 224, 240, 241, 243 | Tested with one point-to-point OVC connecting two ENNIs | Tested with one point-to-point OVC connecting two ENNIs |
| 238, 244 | Tested with ENNI and OVC MFS ≥ 1526-Byte | Tested with ENNI and OVC MFS ≥ 9004-Byte |
| 257 | Tested with one of [Single, Bundled] S-VLAN ID at each ENNI | Tested with one of [Single, Bundled] S-VLAN ID at each ENNI |
| 229 | Tested with Tagged IEEE 802.3 frames | Tested with Tagged IEEE 802.3 frames |
| 245 | Tested with CE-VLAN ID preservation Preserved | Tested with CE-VLAN ID preservation Preserved |
| 246 | Tested with CoS ID preservation Enabled | Tested with CoS ID preservation Enabled |
| 247 | Tested with S-VLAN ID preservation Preserved | Tested with S-VLAN ID preservation Preserved |
| 248 | Tested with S-VLAN CoS (PCP) preservation Enabled | Tested with S-VLAN CoS (PCP) preservation Enabled |
| 251 | Tested with Unicast Unconditional Delivery | Tested with Unicast Unconditional Delivery |
| 252 | Tested with Multicast Unconditional Delivery | Tested with Multicast Unconditional Delivery |
| 253 | Tested with Broadcast Unconditional Delivery | Tested with Broadcast Unconditional Delivery |
| 263 | Tested with one of Source MAC Address Limit [Enabled, Disabled] | Tested with one of Source MAC Address Limit [Enabled, Disabled] |
| MEF 91/91.0.1 Index | Class of Service Testing | Class of Service Testing |
| 258 | Tested with one of [Single, Multiple] Classes of Service | Tested with one of [Single, Multiple] Classes of Service |
| 258 | Tested with PCP Class of Service Identifiers | Tested with PCP Class of Service Identifiers |
| 260 | Tested with one of [PCP, DEI] Color Identifiers | - |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing | Bandwidth Profile Testing |
| 225, 226 | Tested with one BWP Flow per Envelope & Token Share Disabled | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 260 | Tested with one of [Committed only, Committed + Excess] Information Rates and Burst Sizes. *(See note 1)* | Tested with Committed Information Rates and Burst Sizes |
| 260 | If Committed + Excess, tested with Σ Committed & Excess Information Rates up to 75% of EI Speed | - |
| 260 | If Committed only, tested with Σ Committed Information Rates up to 75% of EI Speed | Tested with Σ Committed Information Rates up to 95% of EI Speed |
| 260 | Tested with one of [Color Blind, Color Aware] mode | Tested with Color Blind mode |
| 260 | Tested with one of [CF=0, CF=1] | Tested with CF=0 |
| 260, 229 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes | Tested with a range of IEEE 802.3 Ethernet frames up to 9000 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing | L2CP Testing |
| 236, 237 | Tested with one of [CTB, CTB-2] Address Sets | Tested with one of [CTB, CTB-2] Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing | SOAM Testing |
| 254 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 254 | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level |
| 265 | Tested with one of [Enabled, Disabled] SP MEG MIP | Tested with one of [Enabled, Disabled] SP MEG MIP |
| MEF 91/91.0.1 Index | Performance Testing | Performance Testing |
| 250 | Tested with one of [PT0.3, PT1, PT2, PT3, PT4, PT5] Performance Tier. *(Note 2)* | Tested with PT 0.3 Performance Tier. *(Note 2)* |
| 250 | Tested with at least one of [High, Medium, Low] CoS Label & Parameter values. *(Note 2)* | Tested with High CoS Label & Parameter values. *(Note 2)* |
| MEF 91/91.0.1 Index | Efficiency Testing | Efficiency Testing |
| 260, 238, 244 | - | Tested with information rate ≥ 99% of EI Speed, without bandwidth profile, using MFS-Byte frames, and FLR performance objective ≤ 0.001% |
| MEF 91/91.0.1 Index | Uptime Testing | Uptime Testing |
| 250 | - | *(Note 3)* |
| Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification.<br>Note 2: New PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3 may be added to the PTs and CoS Label & Parameter Values available for CE for AI certification.<br>Note 3: Availability testing may be added to CE for AI certification testing if the metric gets included part of the new PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3. | | |

*Table 7: Transit E-Line Business and AI Profiles for Service Provider Certification*

## 5.2 Technology Provider Certification

| Transit E-Line | CE for Business Certification | CE for AI Certification |
|---|---|---|
| Test Requirements | Business Profile | AI Profile *** Orange values are to be agreed within TCC* |
| MEF 91/91.0.1 Index | Functional Testing | Functional Testing |
| 228 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 224, 240, 241, 243 | Tested with one point-to-point OVC connecting two ENNIs | Tested with one point-to-point OVC connecting two ENNIs |
| 238, 244 | Tested with ENNI and OVC MFS = 1526-Byte | Tested with ENNI and OVC MFS ≥ 9004-Byte |
| 257 | Tested with one S-VLAN ID at each ENNI | Tested with one S-VLAN ID at each ENNI |
| 229 | Tested with Tagged IEEE 802.3 frames | Tested with Tagged IEEE 802.3 frames |
| 245 | Tested with CE-VLAN ID preservation Preserved | Tested with CE-VLAN ID preservation Preserved |
| 246 | Tested with CoS ID preservation Enabled | Tested with CoS ID preservation Enabled |
| 247 | Tested with S-VLAN ID preservation Preserved | Tested with S-VLAN ID preservation Preserved |
| 248 | Tested with S-VLAN CoS (PCP) preservation Enabled | Tested with S-VLAN CoS (PCP) preservation Enabled |
| 251 | Tested with Unicast Unconditional Delivery | Tested with Unicast Unconditional Delivery |
| 252 | Tested with Multicast Unconditional Delivery | Tested with Multicast Unconditional Delivery |
| 253 | Tested with Broadcast Unconditional Delivery | Tested with Broadcast Unconditional Delivery |
| 263 | Tested with Source MAC Address Limit Enabled and Disabled | Tested with Source MAC Address Limit Enabled and Disabled |
| MEF 91/91.0.1 Index | Class of Service Testing | Class of Service Testing |
| 258 | Tested with Single and Multiple Classes of Service | Tested with Single and Multiple Classes of Service |
| 258 | Tested with PCP Class of Service Identifiers | Tested with PCP Class of Service Identifiers |
| 260 | Tested with PCP and DEI Color Identifiers | - |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing | Bandwidth Profile Testing |
| 225, 226 | Tested with one BWP Flow per Envelope & Token Share Disabled | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 260 | Tested with Committed only and Committed + Excess Information Rates and Burst Sizes. *(See note 1)* | Tested with Committed Information Rates and Burst Sizes |
| 260 | Tested with Σ Committed & Excess Information Rates up to 75% of EI Speed | - |
| 260 | Tested with Σ Committed Information Rates up to 75% of EI Speed | Tested with Σ Committed Information Rates up to 95% of EI Speed |
| 260 | Tested with Color Blind and Color Aware modes | Tested with Color Blind mode |
| 260 | Tested with CF=0 and CF=1 | Tested with CF=0 |
| 260, 229 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes | Tested with a range of IEEE 802.3 Ethernet frames up to 9000 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing | L2CP Testing |
| 236, 237 | Tested with CTB and CTB-2 Address Sets | Tested with CTB and CTB-2 Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing | SOAM Testing |
| 254 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 254 | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level | Tested with one of [0, 1, 2, 3, 4, 5, 6, 7, None] OVC Available MEG Level |
| 265 | Tested with one of [Enabled, Disabled] MIP | Tested with one of [Enabled, Disabled] MIP |
| MEF 91/91.0.1 Index | Performance Testing | Performance Testing |
| 250 | Tested with PT0.3 Performance Tier | Tested with PT 0.3 Performance Tier. *(See note 2)* |
| 250 | Tested with High, Medium and Low CoS Label & Parameter Values | Tested with High CoS Label & Parameter Values. *(See note 2)* |
| MEF 91/91.0.1 Index | Efficiency Testing | Efficiency Testing |
| 260, 238, 244 | - | Tested with information rate ≥ 99% of EI Speed, without bandwidth profile, using MFS-Byte frames, and FLR performance objective ≤ 0.001% |
| MEF 91/91.0.1 Index | Uptime Testing | Uptime Testing |
| 250 | - | *(Note 3)* |

Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification.
Note 2: New PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3 may be added to the PTs and CoS Label & Parameter Values available for CE for AI certification.
Note 3: Availability testing may be added to CE for AI certification testing if the metric gets included part of the new PTs & associated CoS Labels & Parameter Values being defined in MEF 23.3.

*Table 8: Transit E-Line Business and AI Profiles for Technology Provider Certification*

# 6. E-LAN Service - Business Profile

## 6.1 Service Provider Certification

| E-LAN | CE for Business Certification |
|---|---|
| Test Requirements | Business Profile |
| MEF 91/91.0.1 Index | Functional Testing |
| 50 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 59, 86, 88, 89 | Tested with one multipoint-to-multipoint EVC connecting three UNIs |
| 55, 96 | Tested with UNI and EVC MFS ≥ 1522-Byte |
| 57, 58, 60, 61 | Tested with one of [All, List, UT/PT] mappings |
| 54 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 93 | Tested with one of CE-VLAN ID preservation [Enabled, Disabled] |
| 94 | Tested with one of CoS ID preservation [Enabled, Disabled] |
| 90 | Tested with one of Unicast Delivery [Unconditional, Conditional] |
| 91 | Tested with one of Multicast Delivery [Unconditional, Conditional, Discard] |
| 92 | Tested with one of Broadcast Delivery [Unconditional, Conditional, Discard] |
| 83 | Tested with one of Source MAC Address Limit [Enabled, Disabled] |
| MEF 91/91.0.1 Index | Class of Service Testing |
| 72, 73, 74, 76, 77, 78 | Tested with one of [Single, Multiple] Classes of Service |
| 72, 73, 74, 76, 77, 78 | Tested with one of [EVC EP, PCP, IP/DSCP] Class of Service Identifiers |
| 75, 81, 82 | Tested with one of [PCP, DEI, IP/DSCP] Color Identifiers |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing |
| 62, 63 | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 81, 82 | Tested with one of [Committed only, Committed + Excess] Information Rates and Burst Sizes. *(See note 1)* |
| 81, 82 | If Committed + Excess, tested with Σ Committed & Excess Information Rates up to 75% of EI Speed |
| 81, 82 | If Committed only, tested with Σ Committed Information Rates up to 75% of EI Speed |
| 81, 82 | Tested with one of [Color Blind, Color Aware] mode |
| 81, 82 | Tested with one of [CF=0, CF=1] |
| 81, 82, 54 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing |
| 69, 70 | Tested with one of [CTA, CTB, CTB-2] Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing |
| 85 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 85 | Tested with one of [Enabled, Disabled] Subscriber MEG MIP |
| MEF 91/91.0.1 Index | Performance Testing |
| 95 | Tested with one of [PT0.3, PT1, PT2, PT3, PT4, PT5] Performance Tier |
| 95 | Tested with at least one of [High, Medium, Low] CoS Label & Parameter values |
| Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification. | |

*Table 9: E-LAN Business Profile for Service Provider Certification*

## 6.2 Technology Provider Certification

| E-LAN | CE for Business Certification |
|---|---|
| Test Requirements | Business Profile |
| MEF 91/91.0.1 Index | Functional Testing |
| 50 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 59, 86, 88, 89 | Tested with one multipoint-to-multipoint EVC connecting three UNIs |
| 55, 96 | Tested with UNI and EVC MFS = 1522-Byte |
| 57, 58, 60, 61 | Tested with All, List and UT/PT mappings |
| 54 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 93 | Tested with CE-VLAN ID preservation [Enabled and Disabled] |
| 94 | Tested with CoS ID preservation [Enabled and Disabled] |
| 90 | Tested with Unicast Delivery Unconditional |
| 91 | Tested with Multicast Delivery Unconditional, Conditional and Discard |
| 92 | Tested with Broadcast Delivery[Unconditional, Conditional and Discard |
| 83 | Tested with Source MAC Address Limit Enabled and Disabled |
| MEF 91/91.0.1 Index | Class of Service Testing |
| 72, 73, 74, 76, 77, 78 | Tested with Single and Multiple Classes of Service |
| 72, 73, 74, 76, 77, 78 | Tested with EVC EP, PCP and IP/DSCP Class of Service Identifiers |
| 75, 81, 82 | Tested with PCP, DEI and IP/DSCP Color Identifiers |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing |
| 62, 63 | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 81, 82 | Tested with Committed only and Committed + Excess Information Rates and Burst Sizes. *(See note 1)* |
| 81, 82 | Tested with Σ Committed & Excess Information Rates up to 75% of EI Speed |
| 81, 82 | Tested with Σ Committed Information Rates up to 75% of EI Speed |
| 81, 82 | Tested with Color Blind and Color Aware modes |
| 81, 82 | Tested with CF=0 and CF=1 |
| 81, 82, 54 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing |
| 69, 70 | Tested with CTA, CTB and CTB-2 Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing |
| 85 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 85 | Tested with Subscriber MEG MIP Enabled and Disabled |
| MEF 91/91.0.1 Index | Performance Testing |
| 95 | Tested with PT0.3 Performance Tier |
| 95 | Tested with High, Medium and Low CoS Label |
| Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification. | |

*Table 10: E-LAN Business Profile for Technology Provider Certification*

# 7. E-Tree Service - Business Profile

## 7.1 Service Provider Certification

| E-Tree | CE for Business Certification |
|---|---|
| Test Requirements | Business Profile |
| MEF 91/91.0.1 Index | Functional Testing |
| 98 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 107, 134, 136, 137 | Tested with one rooted-multipoint EVC connecting three UNIs (one root and two leaves) |
| 103, 144 | Tested with UNI and EVC MFS ≥ 1522-Byte |
| 105, 106, 108, 109 | Tested with one of [All, List, UT/PT] mappings |
| 102 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 141 | Tested with one of CE-VLAN ID preservation [Enabled, Disabled] |
| 142 | Tested with one of CoS ID preservation [Enabled, Disabled] |
| 138 | Tested with one of Unicast Delivery [Unconditional, Conditional] |
| 139 | Tested with one of Multicast Delivery [Unconditional, Conditional, Discard] |
| 140 | Tested with one of Broadcast Delivery [Unconditional, Conditional, Discard] |
| 131 | Tested with one of Source MAC Address Limit [Enabled, Disabled] |
| MEF 91/91.0.1 Index | Class of Service Testing |
| 120, 121, 122, 124, 125, 126 | Tested with one of [Single, Multiple] Classes of Service |
| 120, 121, 122, 124, 125, 126 | Tested with one of [EVC EP, PCP, IP/DSCP] Class of Service Identifiers |
| 123, 129, 130 | Tested with one of [PCP, DEI, IP/DSCP] Color Identifiers |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing |
| 110, 111 | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 129, 130 | Tested with one of [Committed only, Committed + Excess] Information Rates and Burst Sizes. *(See note 1)* |
| 129, 130 | If Committed + Excess, tested with Σ Committed & Excess Information Rates up to 75% of EI Speed |
| 129, 130 | If Committed only, tested with Σ Committed Information Rates up to 75% of EI Speed |
| 129, 130 | Tested with one of [Color Blind, Color Aware] mode |
| 129, 130 | Tested with one of [CF=0, CF=1] |
| 129, 130, 102 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing |
| 117, 118 | Tested with one of [CTA, CTB, CTB-2] Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing |
| 133 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 133 | Tested with one of [Enabled, Disabled] Subscriber MEG MIP |
| MEF 91/91.0.1 Index | Performance Testing |
| 143 | Tested with one of [PT0.3, PT1, PT2, PT3, PT4, PT5] Performance Tier. |
| 143 | Tested with at least one of [High, Medium, Low] CoS Label & Parameter values. |
| Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification. | |

*Table 11: E-Tree Business Profile for Service Provider Certification*

## 7.2 Technology Provider Certification

| E-Tree | CE for Business Certification |
|---|---|
| Test Requirements | Business Profile |
| MEF 91/91.0.1 Index | Functional Testing |
| 98 | Tested with one of [1 Gbps, 10 Gbps, 100 Gbps] Physical Layer |
| 107, 134, 136, 137 | Tested with one rooted-multipoint EVC connecting three UNIs (one root and two leaves) |
| 103, 144 | Tested with UNI and EVC MFS = 1522-Byte |
| 105, 106, 108, 109 | Tested with All, List and UT/PT mappings |
| 102 | Tested with Tagged, Untagged and Priority Tagged IEEE 802.3 frames |
| 141 | Tested with CE-VLAN ID preservation [Enabled and Disabled] |
| 142 | Tested with CoS ID preservation [Enabled and Disabled] |
| 138 | Tested with Unicast Delivery Unconditional |
| 139 | Tested with Multicast Delivery Unconditional, Conditional and Discard |
| 140 | Tested with Broadcast Delivery[Unconditional, Conditional and Discard |
| 131 | Tested with Source MAC Address Limit Enabled and Disabled |
| MEF 91/91.0.1 Index | Class of Service Testing |
| 72, 73, 74, 76, 77, 78 | Tested with Single and Multiple Classes of Service |
| 72, 73, 74, 76, 77, 78 | Tested with EVC EP, PCP and IP/DSCP Class of Service Identifiers |
| 75, 129, 130 | Tested with PCP, DEI and IP/DSCP Color Identifiers |
| MEF 91/91.0.1 Index | Bandwidth Profile Testing |
| 62, 63 | Tested with one BWP Flow per Envelope & Token Share Disabled |
| 81, 82 | Tested with Committed only and Committed + Excess Information Rates and Burst Sizes. *(See note 1)* |
| 81, 82 | Tested with Σ Committed & Excess Information Rates up to 75% of EI Speed |
| 81, 82 | Tested with Σ Committed Information Rates up to 75% of EI Speed |
| 81, 82 | Tested with Color Blind and Color Aware modes |
| 81, 82 | Tested with CF=0 and CF=1 |
| 81, 82, 54 | Tested with a range of IEEE 802.3 Ethernet frames up to 1500 Bytes |
| MEF 91/91.0.1 Index | L2CP Testing |
| 69, 70 | Tested with CTA, CTB and CTB-2 Address Sets |
| MEF 91/91.0.1 Index | SOAM Testing |
| 85 | Tested for transparency with CCM, LBM, LBR, LTM and LTR SOAM PDUs |
| 85 | Tested with Subscriber MEG MIP Enabled and Disabled |
| MEF 91/91.0.1 Index | Performance Testing |
| 95 | Tested with PT0.3 Performance Tier |
| 95 | Tested with High, Medium and Low CoS Label |
| Note 1: CBS values are implementation-specific. Values greater than 8 x EVC MFS are used for CE for Business certification. | |

*Table 12: E-Tree Business Profile for Technology Provider Certification*


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