



## **Technical Specification**

### **MEF 49.0.1**

# **Service Activation Testing Control Protocol and PDU Formats Amendment 1**

**April 2015**

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## Introduction

This amendment makes the following changes to MEF 49:

- Update to Table 9 to correct a typo for SubType Value 8.
- Update to Table 10 to indicate that an option exists to specify the Destination MAC Address in the Forward direction for a Bandwidth Test.
- Update to section 10.4.2.17 to clarify that the Rate Type TLV can be used for bandwidth and frame delivery tests.

## 10 SAT Control Protocol PDU

### 10.4 SAT TLVs

Table 9 is updated to correct a typo in the row for SubType Value 8.

| SubType Value | TLV Name                | Valid Values  | Length of Value                            | Description  |
|---------------|-------------------------|---|--|--|
| 0             | Measurement Type        | 0 = FLR only<br>1 = FLR and Rate                            | 1 Octet                                    | Indicates whether only FLR, or both FLR and Rate (IR or ULR), should be measured |
| 1             | MAC Address             | Any valid unicast MAC address                               | 6 Octets                                   | GTF or CTF MAC address   |
| 2             | Destination MAC Address | Any valid MAC address                                       | 6 Octets                                   | Destination MAC address  |
| 3             | Green PCP               | 0 - 7   | 1 Octet                                    | Used to indicate Green PCP   |
| 4             | Yellow PCP              | 0 - 7   | 1 Octet                                    | Used to indicate Yellow PCP  |
| 5             | Duration                | 1 - 86400   | 4 Octets                                   | Duration of the test session in seconds  |
| 6             | EtherType               | 0x0600 – 0xFFFF   | 2 Octets                                   | EtherType to be generated  |
| 7             | SAP                     | 0x0000 – 0xFFFF   | 2 Octets                                   | DSAP/SSAP to be generated  |
| 8             | Frame Length            | See section 10.4.2.7  | See section 10.4.2.7                       | Length of test frames (containing FL_PDUs), in octets                            |
| 9             | Frame Pattern           | 0 = Repeating Pattern<br>1 = PRBS31<br>See section 10.4.2.8 | 1 Octet or 9 Octets – see section 10.4.2.8 | Either PRBS31 or 8 Octet repeating pattern                                       |
| 10            | Frame Quantity          | 0 - 2 <sup>64</sup> -1                                      | 8 octets                                   | Number of frames to be transmitted or number of green frames received            |

| SubType Value | TLV Name               | Valid Values                 | Length of Value | Description  |
|---------------|------------------------|------------------------------|-----------------|--|
| 11            | Frame Interval         | 1 - 65535                    | 2 Octets        | The time between transmitted frames in milliseconds  |
| 12            | Green Rate             | $1 - 2^{32} - 1$             | 4 Octets        | Rate of Green frames to transmit in kbps   |
| 13            | Yellow Rate            | $1 - 2^{32} - 1$             | 4 Octets        | Rate of Yellow frames to transmit in kbps  |
| 14            | Yellow Frame Quantity  | $0 - 2^{64} - 1$             | 8 Octets        | Number of Yellow frames transmitted or received  |
| 15            | Measured Rate Duration | $1 - 2^{64} - 1$             | 8 Octets        | Time in nanoseconds from the transmission or receipt of the first time stamped frame to the transmission or receipt of the last time stamped frame in the test |
| 16            | Test Session Status    | See Table 12                 | 1 Octet         | Test Session status  |
| 17            | Yellow DEI             | 0 = DEI unset<br>1 = DEI set | 1 Octet         | DEI value for Yellow frames  |
| 18            | Rate Type              | 0 = IR<br>1 = ULR            | 1 Octet         | Whether frame rates are expressed as IR or ULR   |

| SubType Value | TLV Name                  | Valid Values   | Length of Value | Description   |
|---------------|---------------------------|----------------|-----------------|---|
| 19            | Measured Rate Green Bits  | $0 - 2^{64}-1$ | 8 Octets        | Number of Green bits transmitted or received between the first time stamped frame and the last time stamped frame in the test session |
| 20            | Measured Rate Yellow Bits | $0 - 2^{64}-1$ | 8 Octets        | Number of Yellow bits transmitted or received between the first time stamped frame and the last time                                  |

Table 9 TLV SubTypes

### 10.4.1 Tests and TLV Type Use

This amendment modifies the Destination MAC Address row of the Bandwidth Test column of Table 10 to reflect that specifying the Destination MAC Address is optional in the forward direction.

| Subtypes                | L2CP Test | Frame Delivery Test - Frame Count Specified | Frame Delivery Test - Rate Specified | Bandwidth Test |
|-------------------------|-----------|---|--------------------------------------|----------------|
| Measurement Type        | F, B      | F, B  | F, B                                 | F, B           |
| MAC Address             | F         | F   | F                                    | F              |
| Destination MAC Address | (F), B    | (F), B                                      | (F), B                               | (F), B         |
| Green PCP               | F, B      | F, B  | F, B                                 | F, B           |
| Yellow PCP              |           |   |                                      | (F), (B)       |
| Duration                | F         | F   | F, B                                 | F, B           |
| EtherType               | (B)       |   |                                      |                |
| SAP                     | (B)       |   |                                      |                |
| Frame Length            |           | (B)   | (B)                                  | (B)            |
| Frame Pattern           |           | (B)   | (B)                                  | (B)            |
| Frame Quantity          | B         | B   |                                      |                |
| Frame Interval          | B         | B   |                                      |                |
| Green Rate              |           |   | B                                    | B              |
| Yellow Rate             |           |   |                                      | (B)            |
| Yellow DEI              |           |   |                                      | (F), (B)       |
| Rate Type               |           |   | B                                    | F, B           |

**Table 10 Initiate Session Request Message TLVs**



**10.4.2 SAT TLV Types****10.4.2.17**     *Rate Type*

The first sentence of this paragraph is modified to clarify that the Rate Type TLV can be used for bandwidth and frame delivery tests.

The Rate Type TLV is used for bandwidth and frame delivery tests, to indicate whether the Green Rate and Yellow Rate TLVs contain values for IR or ULR, and whether the Measured Rate Green Bits and Measured Rate Yellow Bits TLVs contain bit counts that correspond to IR or ULR. The Responder End returns the Rate Type TLV value in the Fetch Session Results Response message to indicate which method, IR or ULR, was used to calculate the Measured Rate Green/Yellow Bits. The Controller End can then convert the result to the desired method as appropriate.