# 

## Management entities for DPoE eOAM profile

### Branch 0xD6 “identification”

#### *Object Context* TLV

1. The eOAM defined for this profile can manage objects other than the immediate EPON MAC instance. This attribute is used by the OLT and ONU to identify the context for other specific attributes, indicating, e.g., the UNI ports to which the given attribute refers. The OLT is not required to know or use the MAC addresses of UNIs to manage them via eOAM.
2. The *Object Context* TLV carried in an eOAMPDU sets the object to which all subsequent TLVs apply. Once set, this context remains unchanged until the next *Object Context* TLV is found and processed or until the eOAMPDU terminates. If no *Object Context* TLV is supplied, the default object context is the LLID on which the eOAMPDU was received.
3. The source OAM Client shall set the proper context, as specified for each attribute and action in 14.4.2 through 14.4.6 using the *Object Context* TLV. The source OAM Client should not insert the *Object Context* TLV in front of Variable Container TLVs or Variable Descriptor TLVs if the proper context is already set, either explicitly via an earlier *Object Context* TLV or implicitly as a default object context.
4. Until the first *Object Context* TLV is encountered in the received eOAMPDU, the destination OAM Client shall use the LLID on which the eOAMPDU was received as the object context. The destination OAM Client shall apply the current object context to all subsequent Variable Container TLVs and Variable Descriptor TLVs until another *Object Context TLV* is encountered.
5. This TLV is of a Variable Container type. The format of this TLV shall be as specified in Table 14‑124.

Table 14‑124—*Object Context* TLV (0xD6/Varies)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 1 | 1. Branch | 1. 0xD6 | 1. Branch identifier. |
| 1. 2 | 1. ObjectType | 1. Varies | 1. Indicates the type of the target object, as defined in 14.4.1.1.1. |
| 1. 1 | 1. Length | 1. Varies | 1. Represents the size of the Value field: 2. 0x01 for ObjectType values 0x00-00 to 0x00-03 3. 0x04 for ObjectType value of 0x00-04   Other values are reserved and ignored on reception. |
| 1. Varies | 1. ObjectInstance | 1. Varies | 1. Indicates the instance of the target object, as defined in 14.4.1.1.2. |

##### ObjectType field

1. The ObjectType value in the *Object Context* TLV identifies the type of the target object. The ONU and the OLT shall support the values for the ObjectType field as shown in Table 14‑125.

Table 14‑125—Code point allocation for the ObjectType field

| 1. **ObjectType** | 1. **Code** | 1. **Notes** |
| --- | --- | --- |
| 1. ONU | 1. 0x00-00 | 1. Identifies the ONU as a whole |
| 1. PON Port | 1. 0x00-01 | 1. Identifies a PON interface |
| 1. LLID | 1. 0x00-02 | 1. Identifies a unicast LLID |
| 1. UNI Port | 1. 0x00-03 | 1. Identifies Ethernet UNI port |
| 1. Queue | 1. 0x00-04 | 1. Identifies the specific queue on the ONU |
| 1. MEP | 1. 0x00-05 | 1. Identifies a Maintenance End Point (MEP) for Service OAM |
| 1. mLLID | 1. 0x00-06 | 1. Identified a multicast LLID |

1. Other values are reserved and ignored on reception. When the destination OAM Client encounters an *Object Context* TLV carrying one of the reserved ObjectType values, the destination OAM Client shall discard this *Object Context* TLV and all the subsequent TLVs present in the same eOAMPDU until it encounters another *Object Context* TLV with one of the supported values.

##### ObjectInstance field

1. The ObjectInstance field in the *Object\_ID* TLV identifies the specific instance of the object identified by the ObjectType field and has the form of a 1-octet-wide or 4-octet-wide value. The internal structure of the value carried in the ObjectInstance field depends on the value of the ObjectType field carried in this *Object Context* TLV and is specified in the following subclauses.

###### ObjectInstance field for ONU (0xD6/0x00-00)

1. When the ObjectType field is equal to 0x00-00 (ONU), the *Object Context* TLV identifies the ONU as a whole. In most cases, the context is obvious, and the addition of the *Object Context* TLV with the ObjectInstance field equal to 0x00-00 (ONU) is not needed. In some cases, especially when carrying alarm indication, the addition of the *Object Context* TLV with the ObjectInstance field equal to 0x00-00 (ONU) is necessary.
2. The value carried in the ObjectInstance field when the ObjectType field is equal to 0x00-00 (ONU) shall be as specified in Table 14‑126.

Table 14‑126—Structure of the ObjectInstance field for ONU (0xD6/0x00-00)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 1 | 1. ONU | 1. 0x00 | 1. Represents the ONU instance |

###### ObjectInstance field for PON Port (0xD6/0x00-01)

1. When the ObjectType field is equal to 0x00-01 (PON Port), the *Object Context* TLV identifies one of PON ports available on the ONU. The value carried in the ObjectInstance field when the ObjectType field is equal to 0x00-01 (PON Port) shall be as specified in Table 14‑127.
2. Individual PON port instances are numbered sequentially and start from 0x00, with the maximum value equal to *N*−1, where *N* is the total number of PON ports present on the given ONU.

Table 14‑127—Structure of the ObjectInstance field for PON Port (0xD6/0x00-01)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 1 | 1. PON Port | 1. 0x00 to *N*−1 | 1. Represents the PON port instance |

###### ObjectInstance field for LLID (0xD6/0x00-02)

1. When the ObjectType field is equal to 0x00-02 (LLID), the *Object Context* TLV identifies one of the unicast LLIDs available on the ONU. The value carried in the ObjectInstance field when the ObjectType field is equal to 0x00-02 (LLID) shall be as specified in Table 14‑128.
2. Individual unicast LLID instances are numbered sequentially and start from 0x00, with the maximum value equal to *N*−1, where *N* is the total number of unicast LLIDs present on the given ONU.

Table 14‑128—Structure of the ObjectInstance field for LLID (0xD6/0x00-02)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 1 | 1. LLID | 1. 0x00 to *N*−1 | 1. Represents the unicast LLID instance |

###### ObjectInstance field for UNI Port (0xD6/0x00-03)

1. When the ObjectType field is equal to 0x00-03 (UNI Port), the *Object Context* TLV identifies one of the UNI ports available on the ONU. The value carried in the ObjectInstance field when the ObjectType field is equal to 0x00-03 (UNI Port) shall be as specified in Table 14‑129.
2. Individual UNI Port instances are numbered sequentially and start from 0x00, with the maximum value equal to *N−*1, where *N* is the total number of UNI ports present on the given C-ONU.

Table 14‑129—Structure of the ObjectInstance field for UNI Port   
(0xD6/0x00-03)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 1 | 1. UNI Port | 1. 0x00 to *N−*1 | 1. Represents the UNI Port instance |

###### ObjectInstance field for Queue (0xD6/0x00-04)

1. When the ObjectType field is equal to 0x00-04 (Queue), the *Object Context* TLV identifies one of the queues available on the ONU. The value carried in the ObjectInstance field when the ObjectType field is equal to 0x00-04 (Queue) shall be as specified in Table 14‑130.
2. Queues are numbered relative to their egress port. Individual queue instances are numbered sequentially and start from 0x00, with the maximum value equal to *N−*1, where *N* is the total number of queues terminating on the given port.

Table 14‑130—Structure of the ObjectInstance field for Queue   
(0xD6/0x00-04)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 2 | 1. PortType | 1. 0x00-02 or  0x00-03 | 1. Represents the port type with which the given queue is associated |
| 1. 1 | 1. PortInstance | 1. 0x00 to *N−*1 | 1. Represents the port instance with which the given queue is associated (see Table 14‑125 for definition) |
| 1. 1 | 1. QueueInstance | 1. 0x00 to *Q−*1 | 1. Represents the queue instance number associated with the given object |

###### ObjectInstance field for MEP (0xD6/0x00-05)

1. Reserved for future standardization.

###### ObjectInstance field for mLLID (0xD6/0x00-06)

1. When the ObjectType field is equal to 0x00-06 (mLLID), the *Object Context* TLV identifies one of the multicast LLIDs registered on the ONU. The value carried in the ObjectInstance field when the ObjectType field is equal to 0x00-06 (mLLID) shall be as specified in Table 14‑128.
2. Individual mLLID instances are numbered according to the mLLID index number allocated by the OLT when the given mLLID is registered on the ONU.

Table 14‑128—Structure of the ObjectInstance field for LLID (0xD6/0x00-02)

| 1. **Size (octets)** | 1. **Field (name)** | 1. **Value** | 1. **Notes** |
| --- | --- | --- | --- |
| 1. 2 | 1. LLID | 1. 0x00-00 – 2. 0xFF-FF | 1. Represents the mLLID instance |