IEEE P802.1CBcv

Stream identification-type and FRER sequence-recovery-algorithm

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Problem

- Current implementation of the stream-identification YANG module models the *tsnStreamIdIdentificationType* (9.1.1.6) incorrectly.
- IEEE Std 802.1CB-2017 describes *tsnStreamIdIdentificationType* as “An enumerated value [that] includes an Organizationally Unique Identifier (OUI) or Company ID (CID) to identify the organization defining the enumerated type.”. The values for *tsnStreamIdIdentificationType* are defined in Table 9-1 of the standard.
- Currently the implementation in the stream-identification YANG module only contains the type number defined in Table 9-1 and omits the OUI/CID that also is defined in the table.
- Additionally the current model does not allow to define custom stream identification functions for entities owning a different OUI/CID than “00-80-C2”.
- The same applies to the modelling of *frerSeqRcvyAlgorithm* (10.4.1.5) and *frerSeqEncEncapsType* (10.5.1.5) in the FRER YANG module.

Table 9-1—Stream identification types

OUI/CID	Type number	Stream identification function	Controlling parameters
00-80-C2	0	Reserved	—
00-80-C2	1	Null Stream identification (6.4)	9.1.2
00-80-C2	2	Source MAC and VLAN Stream identification (6.5)	9.1.3
00-80-C2	3	Active Destination MAC and VLAN Stream identification (6.6)	9.1.4
00-80-C2	4	IP Stream identification (6.7)	9.1.5
00-80-C2	5–255	Reserved	—
other	—	Defined by entity owning the OUI or CID	—

Current definition in stream-identification YANG module

```
leaf identification-type {
 type identityref {
   base strid-idty;
 }
 description
   "An enumerated value indicating the method used to identify
   packets belonging to the Stream. The enumeration includes an
   Organizationally Unique Identifier (OUI) or Company ID (CID) to
   identify the organization defining the enumerated type.";
 reference
   "Clause 9.1.1.6 of IEEE Std 802.1CB-2017";
}
```

- The current way of modelling identification-type is incomplete (i.e. missing the OUI/CID information) and does not allow to define “other” stream identification functions than those defined in strid-idty.
- Additionally, with the current way of modelling *identification-type*, the information in this leaf is redundant to the information in the following *choice* statement (see comment #4 against draft D0.4 of IEEE P802.1CBcv).

Suggested remedy

- Change the *leaf identification-type* to a *container identification-type* that contains a leaf for the type number and a leaf for the OUI/CID value from the table.
- Pull the container into the choice statement so there is one entry with the correct type number within each choice (e.g. *null-stream-identification*).
- Set the *container identification-type* to be *config false* to ensure that the correct type number and OUI/CID value of “00-80-C2” are returned for the respective stream identification functions defined in table 9-1.
- Create an additional container for the choice statement called *organization-specific* that is set to be *config true* and allows to set the type-number and OUI/CID to arbitrary values to allow to define “other” stream identification functions than those defined in table 9-1.
- An overview of how this would look is provided on the next slide.

Suggested remedy

Current model

```
module: ieee802-dot1cb-stream-identification
  +--rw stream-identity-list* [index]
     +--rw index                                  uint32
     +--rw handle                                 uint32
     +--rw in-facing
     |  +--rw input-port-list*    if:interface-ref
     |  +--rw output-port-list*   if:interface-ref
     +--rw out-facing
     |  +--rw input-port-list*    if:interface-ref
     |  +--rw output-port-list*   if:interface-ref
     +--rw identification-type?                   identityref
     +--rw (parameters)
        +--:(null-stream-identification)
        |  +--rw null-stream-identification
        |     +--rw destination-mac?   ieee:mac-address
        |     +--rw tagged?            vlan-tag-identification-type
        |     +--rw vlan?              vlan-identifier-type
        +--:(smac-vlan-stream-identification)
        |  +--...
```

Suggested model

```
module: ieee802-dot1cb-stream-identification
  +--rw stream-identity-list* [index]
     +--rw index                                  uint32
     +--rw handle                                 uint32
     +--rw in-facing
     |  +--rw input-port-list*    if:interface-ref
     |  +--rw output-port-list*   if:interface-ref
     +--rw out-facing
     |  +--rw input-port-list*    if:interface-ref
     |  +--rw output-port-list*   if:interface-ref
     +--rw (parameters)
        +--:(null-stream-identification)
        |  +--rw null-stream-identification
        |     +--ro identification-type
        |     |  +--ro type-number?   uint64
        |     |  +--ro oui-cid?       string
        |     +--rw destination-mac?       ieee:mac-address
        |     +--rw tagged?                vlan-tag-identification-type
        |     +--rw vlan?                  vlan-identifier-type
        +--:(smac-vlan-stream-identification)
        |  +--...
        +--:(organization-specific)
           +--rw organizational
              +--rw identification-type
                 +--rw type-number?   uint64
                 +--rw oui-cid?       string
```

Thank you!

Any questions?