802.1CBdb

draft 0.0

C. Mangin

IEEE 802.1 Interim, Salt Lake City

May, 2019
Changes in 802.1CB

• Clause 6: addition of a new passive stream identification function
  – Clause 6.8
    • Chose a name: “mask-and-match”
    • Passive identification function that sits at the EISS’ interface with the upper layers
    • Takes specific EISS’s indication primitive parameters as input:
      – source_address, destination_address, vlan_identifier, mac_service_msdu
    • The function defines a set of bit fields, obtained by masking these input parameters
    • The stream_handle produced by the function is derived from the matching of the bit field(s) with values specific to an instance of the identification function.
Changes in 802.1CB

• Clause 5 “Conformance”:
  – MmId optional in Talkers, Listeners
  – MmId recommended in Relay systems

• Clause 9 “Stream Identification Management”
  – Addition of a new `tsnStreamIdIdentificationType`
    • OUI: 00-80-C2, Type number: 5
  – Addition of managed objects
    (`tsnStreamIdParameters`) defining the masks sets and the values to be matched: Sub-clause 9.1.6
    • See next slide
## Changes in 802.1CB

- **Clause 9.1.6 “Managed objects for Extended Stream identification”**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tsnCpeMmIdDestMacMask (9.1.6.1)</td>
<td>48-bit ternary mask to be applied to the <code>destination_address</code> parameter passed up by the <code>EM_UNITDATA.indication</code> primitive</td>
</tr>
<tr>
<td>tsnCpeMmIdDestMacMatch (9.1.6.2)</td>
<td>Destination MAC address to be matched with the masked <code>destination_address</code> parameter</td>
</tr>
<tr>
<td>tsnCpeMmIdSrcMacMask (9.1.6.3)</td>
<td>48-bit ternary mask to be applied to the <code>source_address</code> parameter passed up by the <code>EM_UNITDATA.indication</code> primitive</td>
</tr>
<tr>
<td>tsnCpeMmIdSrcMacMatch (9.1.6.4)</td>
<td>Source MAC address to be matched with the masked <code>source_address</code> parameter</td>
</tr>
<tr>
<td>tsnCpeMmIdTagged (9.1.6.5)</td>
<td>Value indicating if the frame is tagged, untagged, or any</td>
</tr>
<tr>
<td>tsnCpeMmIdVlanIdMask (9.1.6.6)</td>
<td>12-bit ternary mask to be applied to the <code>vlan_identifier</code> parameter passed up by the <code>EM_UNITDATA.indication</code> primitive</td>
</tr>
<tr>
<td>tsnCpeMmIdVlanIdMatch (9.1.6.7)</td>
<td>VLAN identifier to be matched with the masked <code>vlan_identifier</code> parameter</td>
</tr>
<tr>
<td>tsnCpeMmIdMsduFieldNb (9.1.6.8)</td>
<td>Number of bit fields to be matched in the <code>mac_service_data_unit</code> parameter passed up by the <code>EM_UNITDATA.indication</code> primitive -&gt; <em>max number ?</em></td>
</tr>
<tr>
<td>tsnCpeMmIdMsduFieldN (9.1.6.9)</td>
<td>Bit field mask, defined by the couple <code>{tsnCpeMmIdMsduFieldOffsetN [9.1.6.9.1], tsnCpeMmIdMsduFieldLengthN [9.6.1.9.2]}</code>, to be applied to the <code>mac_service_data_unit</code> parameter passed up by the <code>EM_UNITDATA.indication</code> primitive. -&gt; <em>max values ?</em></td>
</tr>
<tr>
<td>tsnCpeMmIdMsduFieldValueN (9.1.6.10)</td>
<td><code>tsnCpeMmIdMsduFieldLengthN</code>-bit value to be matched with <code>tsnCpeMmIdMsduFieldN</code></td>
</tr>
</tbody>
</table>
Changes in 802.1CB

• Annex A “PICS”:
  – Reflects Clause 5

• Annex C.2 “Various stack positioning”:
  – Example use of mask-and-match identification in a system

• Annex X “example applications”:
  – To be added
M&M identification function

BACK-UP
EISS indication

• Mask & Match stream identification function as passive stream identification function on top of the EISS
  – implemented only up the stack
  – using a subset of the `EM_UNITDATA.indication` primitive parameters as input

```markdown
(destination_address,
 source_address,
 mac_service_data_unit*,
 priority,
 drop_eligible,
 vlan_identifier,
 frame_check_sequence,
 service_access_point_identifier,
 connection_identifier,
 flow_hash,
 time_to_live)
```

* If the frame is VLAN-tagged, the `mac_service_data_unit` is the mac_service_data_unit provided by the ISS, which VLAN-tag has been removed.
Masks sets

• Union of 2 sets of masks to determine the parameter information to be matched:

  – \( \{\text{da\_mask, sa\_mask, vlan\_id\_mask}\} \cup \{\text{msdu\_mask}\} \)

  – \( \{\text{msdu\_mask}\} = \{(\text{offset1, length1}), (\text{offset2, length2}), \ldots, (\text{offsetN, lengthN})\} \) or \( \emptyset \)
Tagged or untagged?

• How to determine if a frame is tagged or untagged
  – Re-use the same “trick” as in the .1CB stream identification functions
    • Managed object that indicates that a frame is:
      – Tagged
      – Untagged
      – Any
Masks details

• msdu_mask details:
  – each (offset, length) couple defines a field of length bits that must match a length-bit value defined for the stream identification function instance
  – Number of (offset, length) couples is specified
    • If the number of couples equals 0, the msdu parameter is ignored
  – Unit of offset and length: bits
    • Max offset and length values have to be fixed
  – offset = 0 points to the first bit of the mac_service_data_unit
  – Length = number of consecutive bits
Masks details

• da_, sa_, vlan_id_ mask details
  – da_ and sa_ masks are 48-bit long
  – vlan_id_mask is 12-bit long
  – Masks allow “ternary” match:
    • Mask’s bits set to ‘1’ indicate a bit position that must match
    • Mask’s bits set to ‘0’ indicate a bit position that always match (don’t care)
  – An all-zero mask indicates that the corresponding parameter is ignored
Thank you for your attention