

Update on 802.1 Maintenance Request 193

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802.1 Maintenance Request 193

- Request to clarify on-the-wire behavior for .1Qbv
 - <http://www.ieee802.org/1/files/public/maint/new-requests/314/requests/171/pre.html>
 - "Proposed text" is incomplete in database (as of Sep 5 2017)
- Discussed briefly in 802.1 meeting in July (Berlin)
 - Agreed to submit a sponsor ballot comment to .1Q-rev rollup
- Discussed in TSN conference call August 14 2017
 - Agreed to update "Proposed text"
 - Agreed that "shall" is appropriate
- In these slides
 - Updated "Proposed text"
 - Related questions

Updated "Proposed text"

Updated "Proposed text" (1 of 4)

Changes to original request shown in colored text.

Add a new subclause 12.29.2, titled "Representation of times", with the following text:

"The time values of 12.29.1 (e.g. AdminBaseTime) shall be represented at the point where a frame passes the reference plane marking the boundary between the network media and PHY (i.e. on-the-wire time point). **The start of the frame shall be the message timestamp point as specified by IEEE Std 802.1AS for various media.**

Updated "Proposed text" (2 of 4)

Figure 12-6 shows two points in time for scheduled traffic. The time of gate open/close described in subclause 8.6.8.4 is used for transmission selection, and that point in time exists internal to the Bridge (i.e. above MAC and PHY). A delay exists between this internal time point and the time of transmit on-the-wire. For example, if transition of a gate from closed to open immediately results in selection of a frame for transmission, there will be a delay from that internal time of transmission selection to the start of the frame on-the-wire. The internal time ~~point~~ of transmission selection will have variance and will be bounded (min/max), and the delay to the on-the-wire time point will also have variance.

Updated "Proposed text" (3 of 4)

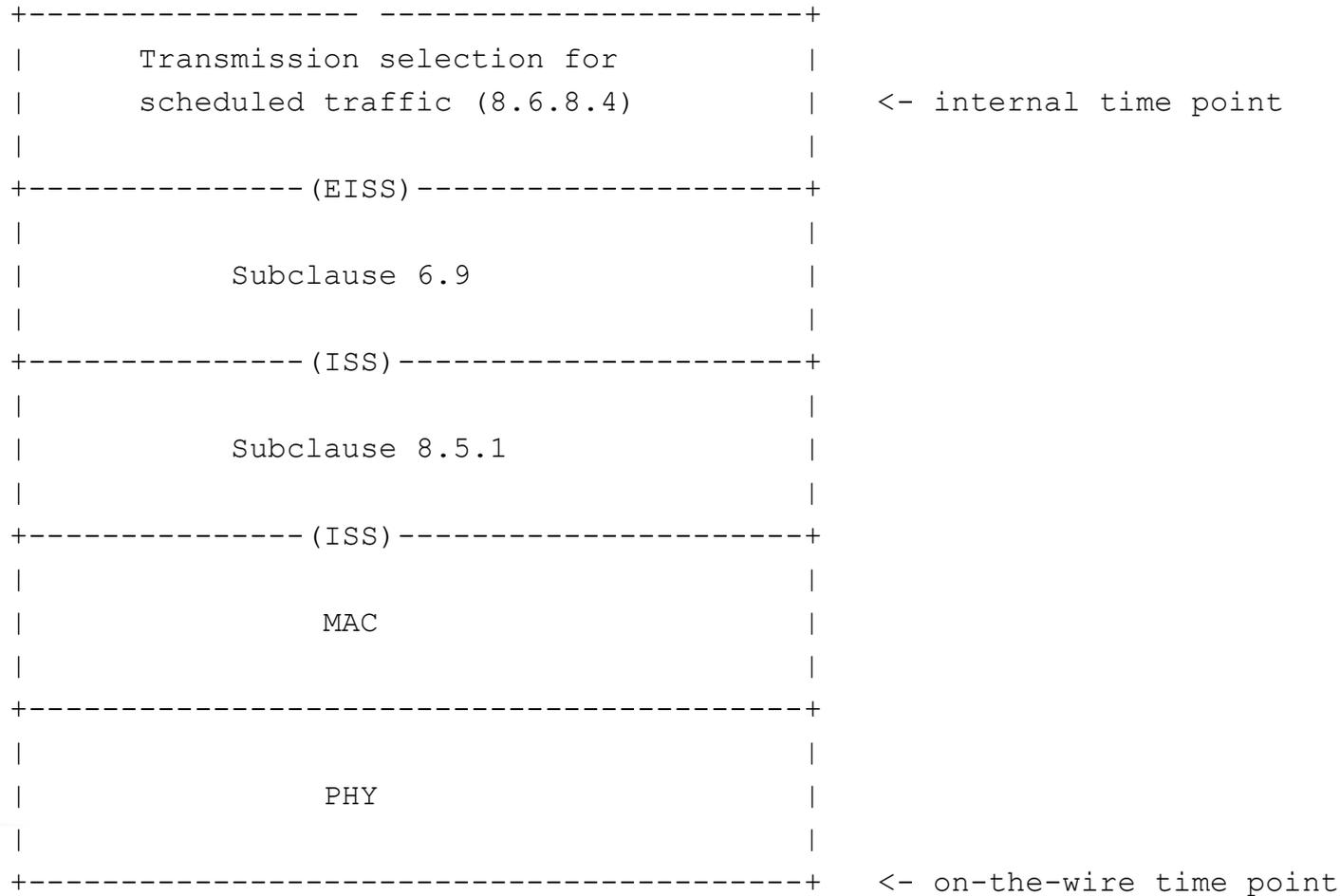
Since the Bridge contains the information needed in order to compute the min/max delay from the internal time point to the on-the-wire time point, the Bridge is responsible for performing the adjustments in order to represent the managed objects as on-the-wire time.

NOTE 1: As an example, consider an IEEE Std 802.3 Port configured to transmit a single traffic class with known frame lengths, and the managed objects are configured with a cycle of open for one millisecond, then closed for one millisecond. If a continuous burst of frames is transmitted through the Bridge to the Port, the Preamble and SFD symbol transmits during the closed window, but no other symbol of a frame can transmit from the PHY during the closed window (including the FCS). ~~no symbol of a frame can transmit from the PHY during the closed window (i.e. from start of Preamble through end of Frame Check Sequence).~~

NOTE 2: Although managed objects apply to a Bridge, the preceding specification of on-the-wire time can be applied to an end station."

Updated "Proposed text" (4 of 4)

Insert a new Figure 12-6, titled "Points in time for scheduled traffic":



Related questions

Clarify .1Qbu (frame preemption)?

- .1Qbu is included in the .1Q-rev rollup
- In 12.30, the only writable managed object for .1Qbu is framePreemptionStatusTable
 - Array of 8 boolean per Port, to enable for each priority
 - There are no times
- The above-the-MAC specs for frame preemption relate to the ordering of frames and fragments
 - This ordering remains consistent on-the-wire
- Clarification doesn't seem to be needed

Clarify .1Qci (filtering & policing)?

- A sponsor ballot comment will propose to include .1Qci (and .1Qch) in the .1Q-rev rollup
- 12.31.3 (Stream Gate Instance Table) is analogous to managed objects of .1Qbv
 - Includes times
 - Requires clarification
- From 802.1 meeting in September 2017 St. Johns...
 - Working group agreed to add proposed text for this .1Qci clarification in the sponsor ballot comment to .1Q-rev rollup (for this maintenance request)