Solutions for comments #135 and #177 (also #137 and #181)

Offline discussion group

Nov 24, 2021

Overview

- Comments #135 and #177 were not resolved at the P802.3cx meeting on Nov 10, 2021
- Action was taken to have an offline discussion and find solutions before the next P802.3cx meeting, on Nov 24, 2021
- Comments #137 and #181 are the same as #135 and #177, respectively, except they apply to RX_num_unit_change instead of to TX_num_unit_change
  - The same solution can be used for these comments

Volunteer Participants in Offline Discussion Group

- Jeff Slavick, Broadcom
- Jingfei Lv, Huawei
- Marek Hajduczenia, Charter Communications
- Mark Bordogna, Intel
- Richard Tse, Microchip Technology
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Comment #135

CI 90 SC 90.4.4.1 P 48 L 50 # 135

Tse, Richard Microchip Technology

Comment Type E *Comment Status* A *defer*

The last sentence in this paragraph applies only to physical interfaces. However, this is not clear because both physical interfaces and intra-chip interfaces are mentioned earlier in this paragraph..

SuggestedRemedy

Change

"TX_num_unit_change is intended for the use with intra-chip interfaces. TX_num_unit_change is not available over physical interfaces such as instantiated xMII or AUI. In order to achieve high accuracy timestamping, it is recommended to avoid AM insertion, CWM insertion, and Idle insertion/removal in sublayers lower than these interfaces."

to

"TX_num_unit_change is intended for the use with intra-chip interfaces. TX_num_unit_change is not available over physical interfaces such as instantiated xMII or AUI. In order to achieve high accuracy timestamping with these physical interfaces, it is recommended to avoid AM insertion, CWM insertion, and Idle insertion/removal in sublayers lower than these interfaces."

Response *Response Status* C

ACCEPT IN PRINCIPLE.

Change per comment + convert the last sentence into a NOTE.

Comment #177

Cl 90 *SC* 90.4.4.1 *P* 48 *L* 50 # 177

Slavick, Jeff Broadcom

Comment Type TR *Comment Status* D *defer*

The definition of the service interface is not an appropriate place to insert a "recommendation".

SuggestedRemedy

Remove the last setence of the 2nd paragraph of 90.4.4.1

Proposed Response *Response Status* W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #135

Solution 1/3

- Delete the final sentence from these paragraphs to address comments #177 and #181

90.4.4.1 TX_num_unit_change<15:0> signal

TX_num_unit_change is intended for the use with intra-chip interfaces. TX_num_unit_change is not available over physical interfaces such as instantiated xMII or AUI. ~~In order to achieve high accuracy timestamping, it is recommended to avoid AM insertion, CWM insertion, and Idle insertion/removal in sublayers lower than these interfaces.~~

90.4.4.2 RX_num_unit_change<15:0> signal

RX_num_unit_change is intended for the use with intra-chip interfaces. RX_num_unit_change is not available over physical interfaces such as instantiated xMII or AUI. ~~In order to achieve high accuracy timestamping, it is recommended to avoid AM removal, CWM removal, and Idle insertion/removal in sublayers lower than these interfaces.~~

Solution 2/3

- Insert NOTE 6 at the end of 90.7 to address comments #135 and #137.

  NOTE 6 — When TX_num_unit_change and RX_num_unit_change are not available (e.g., over physical interfaces such as instantiated xMII or AUI), it is recommended to, when possible, avoid Idle insertion/removal, alignment marker insertion/removal, and/or codeword marker insertion/removal in the sublayers below the xMII/AUI to reduce the number of timestamping accuracy impairments (see Annex 90A).

Solution 3/3

comment #246 might cause these signals in these paragraphs to be changed to parameters.

- Insert sentence at the end of each of these two paragraphs in 90.7 to improve description of TX/RX_num_unit_change operation:

For a PHY that inserts alignment markers or codeword markers and/or performs rate adaptation (e.g., adds/removes Idles), the transmit path data delay measurement starting point (the PTP message timestamp point at the xMII input) should be adjusted to account for the ~~AM~~alignment marker or ~~CWM~~codeword marker insertion and any Idle insertion/removal that occurs in the PHY (between the xMII input and the MDI output). Based on this adjustment, the result is a transmit path data delay measurement that appears as if the ~~AM~~alignment marker or ~~CWM~~codeword marker insertion and any Idle insertion/removal had been performed before the Tx xMII. The PHY provides its transmit path delay variance information to the TimeSync client via the TX_num_unit_change signal.

For a PHY that removes alignment markers or codeword markers and/or performs rate adaptation (e.g., adds/removes Idles), the receive path data delay measurement ending point (the PTP message timestamp point at the xMII output) should be adjusted to account for ~~AM~~alignment marker or ~~CWM~~codeword marker removal and any Idle insertion/removal that occurs in the PHY (between the MDI input and xMII output). Based on this adjustment, the result is a receive path data delay measurement that appears as if the ~~AM~~alignment marker or ~~CWM~~codeword marker removal and any Idle insertion/removal had been performed after the Rx xMII. The PHY provides its receive path delay variance information to the TimeSync client via the RX_num_unit_change signal.

The dynamic path delay variance ~~of~~caused by ~~AM~~alignment marker, ~~CWM~~codeword marker, or Idle insertion or removal is not to be included in the TimeSync PCS transmit path data delay or the TimeSync PCS receive path data delay registers. ~~The dynamic delay variance is reported by the TX_num_unit_change and RX_num_unit_change signals.~~

Thank you!

Any questions or comments?