Cl **90** *SC* **90.4.4.1.2** *P* **49** *L* **11** # 179

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **R**

AM insertion, CWM insertion and Idle/insert delete are the typical reasons for a change in delay but not the only one.

SuggestedRemedy

Change the second sentence
from:
TX_num_unit_change indicates the change in the Tx PHY's path data delay due to AM insertion, CWM insertion, and/or Idle rate adaptation insertion/removal for the corresponding Tx xMII word.

To:
TX_num_unit_change indicates the change in the Tx PHY's transmit path data delay for the corresponding Tx xMII word, possible reasons for the adjustment are AM insertion, CWM insertion, and/or Idle rate adaptation insertion/removal.

Response *Response Status* **U**

REJECT.

The intent is to report data delay only due to AM insertion, CWM insertion, and/or Idle rate adaptation insertion/removal at this time. Any future functions causing data delay variation would require an update to TimeSync.

Cl **90** *SC* **90.5.1** *P* **50** *L* **35** # 167

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **R**

The service primitive interface supplies the communication path between sub-layers. It does not need to include programming of how the INDICATION is generated, that is done based upon the detect_function which causes the event to occur. So there is no need to modify 90.4.3.1.1 and 90.4.3.2.1. To provide support of selecting when INDICATION occurs, either coincident with the SFD or the FIRST_CHAR after the SFD, you just need to manipulate when the detect cause the INDICATION event to occur. So only 90.5.1 and 90.5.2 need to be adjusted to provide text for when the DETECT will cause INDICATION to occur to allow for both options. Note the detect_function monitors only for Start of Frame Deliminter and then delays (or doesn't) the INDICATION based upon the MDIO config field.

SuggestedRemedy

Revert 90.4.3.1.1 and 90.4.3.2.1 to be same as 802.3dc (existing Cl90 definition).

Update all references of TS_MTP_Detetct* back to TS_SDF_Detect*

Update the following two sub-clauses to be as follows

90.5.1 TS_SFD_Detect_TX function

The TS_SFD_Detect_TX function observes the xMII transmit signals.

There are two possible points in the message where TS_SFD_Detect_TX will cause TS_TX.indication to be generated. The selection of which location is used, the beginning of the Start of Frame Delimiter (SFD, see 3.1.1 and 3.2.2, SMD-E and SMD-S, see 99.3.3) or the beginning of the first symbol after the SFD, is based upon the setting of Message Timestamp Point (MTP) (see 45.2.4.68a).

When the MAC Merge sublayer is not instantiated the TS_SFD_Detect_TX function detects the occurrence of the SFD in compliance with the specifications of the given type of instantiated xMII. For each SFD that is detected on the transmit signals of the xMII the TS_TX.indication service primitive shall be generated (SFD=DETECTED) across the TSSI at the configured MTP.

When the MAC Merge sublayer is instantiated the TS_SFD_Detect_TX function detects the occurrence of the SMD-E and SMD-S in compliance with the specifications of the given type of instantiated xMII. For each SMD-E that is detected on the transmit signals of the xMII the TS_TX.indication service primitive shall be generated (SFD=DETECTED, MM=EMAC) across the TSSI at the configured MTP.
For each SMD-S that is detected on the transmit signals of the xMII the TS_TX.indication service primitive shall be generated (SFD=DETECTED, MM=PMAC) across the TSSI at the configured MTP.

90.5.2 TS_SFD_Detect_RX function

The TS_SFD_Detect_RX function observes the xMII receive signals.

There are two possible points in the message where TS_SFD_Detect_RX will cause TS_RX.indication to be generated. The selection of which location is used, the beginning of the Start of Frame Delimiter (SFD, see 3.1.1 and 3.2.2, SMD-E and SMD-S, see 99.3.3) or the beginning of the first symbol after the SFD, is based upon the setting of Message Timestamp Point (MTP) (see 45.2.4.68a).

When the MAC Merge sublayer is not instantiated the TS_SFD_Detect_RX function detects the occurrence of the SFD in compliance with the specifications of the given type of instantiated xMII. For each SFD that is detected on the receive signals of the xMII the TS_RX.indication service primitive shall be generated (SFD=DETECTED) across the TSSI at the configured MTP.

When the MAC Merge sublayer is instantiated the TS_SFD_Detect_RX function detects the occurrence of the SMD-E and SMD-S in compliance with the specifications of the given type of instantiated xMII. For each SMD-E that is detected on the receive signals of the xMII the TS_RX.indication service primitive shall be generated (SFD=DETECTED, MM=EMAC) across the TSSI at the configured MTP.
For each SMD-S that is detected on the receive signals of the xMII the TS_RX.indication service primitive shall be generated (SFD=DETECTED, MM=PMAC) across the TSSI at the configured MTP.

Response *Response Status* **U**

REJECT.

It is true that the DETECT function in 90.5.1 and 90.5.2 will convey to the TX/RX.indication primitive when the MTP event occurs. However, the following is not true: “Note the detect_function monitors only for Start of Frame Deliminter and then delays (or doesn't) the INDICATION based upon the MDIO config field”. The gRS cannot do this adjustment from the SFD because the delay to the symbol-after-SFD isn’t always a constant number. The DETECT function needs to detect the symbol after SFD.
The validity of the Mac Merge parameter depends on the selected MTP. It is only valid if the beginning of the SFD is selected as the MTP. The only way to convey this is to include the MTPS parameter along with the MM parameter in the TX/RX.indication primitive.

No changes to the draft needed.

Cl **90** *SC* **90.7** *P* **53** *L* **32** # 170

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **R**

Why not provide a method to inform the remote end on which point you're timestamping?

SuggestedRemedy

Add a method (via LLDP?) to pass the state of the Message TimeStamp Point (3.1813.13) to the far end so it can tell how if any compensation in time should be made to it’s calculation of the delay.

Response *Response Status* **U**

REJECT.

This is a new feature and was not brought to the consideration at the TF review stage.

Cl **90** *SC* **90.7** *P* **55** *L* **21** # 175

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **R**

A PCS layer that is separted from the RS by an XS should be discouraged from doing any sort of rate compensation or shifting of the AM/CWM locations.

SuggestedRemedy

Add another note talking about how a PCS seperated by an XS from the RS needs to not modify the AM/CWM locations or do any rate compensation to minimize any time accuracy error.

Response *Response Status* **U**

REJECT.

No specific text was proposed.

Cl **90A** *SC* **90A** *P* **62** *L* **39** # 235

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **A**

Table footnote g applies to 1G, 2.5G, and 5G, which do not have any FEC function, and to 200G and 400G where the FEC is part of the PCS functions. The footnote does not make sense for these rates.

SuggestedRemedy

Clarify the footnote text or delete it.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See comment #144 for 1G FEC.

In note "g", remove the statement "and not to the PCS function".

2.5G and 5G use LDPC(1723,2048) FEC. See subclause 126.1.3.1 of 802.3-2018.
200G and 400G FEC performs the lane distribution. There is no error in the notes or in the table on this matter.

No changes to draft needed.

Cl **90** *SC* **90.4.3.1.1** *P* **52** *L* **21** # 450

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **A** *BT*

"number of bits of <…> delay"
Delay has units of time, so this should be "bit times" (bit time or BT has a definition 1.4.160).

Also in the descriptions of TX_NUM_UNIT_CHANGE (90.5.3) and RX_NUM_UNIT_CHANGE (90.5.4).

SuggestedRemedy

Change "the number of bits of dynamic transmit path data delay" to "the dynamic transmit data path delay in bit times (BT)".

Apply a similar change in 90.5.3 and 90.5.4.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Change to "the number of xMII bit times that will be dynamically inserted or removed in the transmit path"

For the receive path, make a similar change to the text to read "the number of xMII bit times that were dynamically inserted or removed in the receive path"

Cl **90A** *SC* **90A.3** *P* **66** *L* **39** # 461

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **A**

Footnote e discusses FEC for Ethernet rates 5G and 2.5G. FEC exists in 2.5GBASE-T/T1 and 5GBASE-T/T1, but the T1 PHYs have no PCS lane distribution, and there are also PHYs for these rates that do not include FEC at all (2.5GBASE-KX, 5GBASE-KR). The footnote seems to be relevant only for 2.5GBASE-T and 5GBASE-T.

SuggestedRemedy

Change "For these rates" to "For 2.5GBASE-T or 5GBASE-T".

Consider adding "for other PHYs at these speeds there is no PCS lane distribution/merging".

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Change "For these rates" to "For PHYs including FEC".