Cl **45** *SC* **45.2.3.1** *P* **94** *L* **18** # 1

Marris, Arthur — Cadence Design Systems

Comment Type **T** *Comment Status* **D** *(bucket)*

PCS control 1 register speed selection bits need to be updated for 1.6 Tb/s. Similar issue for PHY and DTE XS control 1 registers

SuggestedRemedy

Bring Tables 45–234, 45-315, and 45-340 and update as necessary. Also after maintenance request https://www.ieee802.org/3/maint/requests/maint_1437.pdf is considered include 800 Gb/s selection also.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.11** *P* **306** *L* **36** # 2

Marris, Arthur — Cadence Design Systems

Comment Type **T** *Comment Status* **D** *(bucket)*

align_status references 177.4.1 in the transmit path. However align_status seems to be defined in Table 177-2 which references 119.2.6.2.2 which is describing receive PCS functionality.

SuggestedRemedy

Rename the align_status variable to something different which makes clear it is referring to transmit operation

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This variable references a state machine defined in another clause.

Cl **45** *SC* **45.2.4** *P* **97** *L* **37** # 3

Marris, Arthur — Cadence Design Systems

Comment Type **T** *Comment Status* **D** *(bucket)*

A control bit needs to be added for the variable “PHY_XS_enhanced_ptp_accuracy_enable” listed in “Table 171–2—MDIO PHY 800GXS to Clause 172 control variable mapping”

SuggestedRemedy

Create a new “TimeSync PHY XS configuration" register at location 4.1813 with a “PHY XS enhanced PTP accuracy enable” bit. Add an ability bit for for enhanced PTP accuracy in “TimeSync PHY XS capability (Register 4.1800)”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.213g** *P* **93** *L* **44** # 4

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

In Table 45–177g bins 2 and 3 shall also be described

SuggestedRemedy

In Table 45–177g show registers 1.2416, 1.2417, 1.2418 and 1.2419 for lane 0 error bins 2 and 3 (same structure as for error bin 1)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **116** *SC* **116.3.3.4.1** *P* **136** *L* **11** # 7

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

Typo: "the lower higher sublayer"

SuggestedRemedy

Change: "the lower higher sublayer"
to: "the next lower sublayer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.6** *P* **553** *L* **52** # 11

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

We should also define what does the receiver do with the unused bits.

SuggestedRemedy

Add to the end of the first paragraph in the section: "and ignored by the receiver"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.10** *P* **558** *L* **26** # 13

Bruckman, Leon Nvidia

Comment Type **T** *Comment Status* **D** *(bucket)*

ITU-T refers to a OFBGkj frame. It will be usefull to specify the relationship between the FEC frame and the ITU-T OFBGkj

SuggestedRemedy

Add the folowing text at the end of the section: "The FEC frame in this standard corresponds to the OFBGkj structure defined in ITU-T G.709.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The specific frame that is used by 800GBASE-ER1 is OFBG84. It would be better to include this detail in 186.2.3.9, where the FEC frame is initially descirbed, rather than in the clause about the scrambler.

Add "The FEC frame in this standard corresponds to the OFBG84 structure define in ITU-T G.709.6." Implement with editorial license.

Cl **186** *SC* **186.2.4.6.3** *P* **562** *L* **51** # 14

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

The sentence: "If either…" is repeated in 186.2.4.7. No need (and may be confusing) to have the same requirement twice

SuggestedRemedy

Delete last sentence of 186.2.4.6.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.9** *P* **557** *L* **32** # 15

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

Four times in the clause the CRC32 is written as CRC-32

SuggestedRemedy

Change four times CRC-32 to CRC32 in the whole clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.9** *P* **557** *L* **32** # 16

Bruckman, Leon Nvidia

Comment Type **T** *Comment Status* **D** *(bucket)*

The sentence: "extended by 29 CRC-32 and an additional 64 pad bits after the 29th CRC-32 (total 992 bits)," is hard to parse

SuggestedRemedy

Change to: "extended by 29 CRC32 values with an additional 64 pad bits after the 29th CRC32 (total 992 bits),"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Rewrite the first sentence as three sentence to be more clear.

Change:
Using the 512-row representation of the 800GBASE-ER1 PCS frame, groups of 116 rows (1 192 480 bits), extended by 29 CRC-32 and an additional 64 pad bits after the 29th CRC-32 (total 992 bits), form the set of 1 193 472 bits that will be input to the FEC encoder (denoted as the FEC frame in this clause).

To:
The FEC frame is formed from 116 rows of the 512-row representation of the 800GBASE-ER1 PCS frame (1 192 480 bits). Each group of four rows is extended with the CRC32 (see 186.2.3.8). The 29th group of four rows is further extended with a 64 bit pad. The FEC frame consists of 1 193 472 bits.

Cl **186** *SC* **186.3.3.1.2** *P* **568** *L* **50** # 18

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

A frame carries 7296 symbols not 175 104

SuggestedRemedy

Change: "for a total of 175 104 symbols per frame"
To: "for a total of 175 104 symbols per multi-frame"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.3.3.2.2** *P* **575** *L* **20** # 20

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

The I and Q components shall also be identified

SuggestedRemedy

Add to the list: "Identify the I and Q component of each polarization"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **187** *SC* **187.5.1** *P* **599** *L* **32** # 21

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

The naming of the analog signals in Figure 187-5 is wrong

SuggestedRemedy

In Fugure 187-5 change the second occurrence of RX_AI to RX_BI and the second occurrence of RX_AQ to RX_BQ

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license in figure 187-5 and 185-7.

Cl **187** *SC* **187.5.3** *P* **600** *L* **25** # 22

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

The naming of the analog signals is wrong

SuggestedRemedy

In the first sentence of the paragraph change the second occurrence of RX_AI to RX_BI and the second occurrence of RX_AQ to RX_BQ

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.3** *P* **745** *L* **26** # 24

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

PRBS13 is mentioned twice, while PRBS31 is missing.

SuggestedRemedy

Change: "and for free-running PRBS13 and free-running PRBS13 these two symbols"
To: "and for free-running PRBS13 and free-running PRBS31 these two symbols"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.3.3** *P* **747** *L* **48** # 25

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

This section defined the PRBS31 behavior, but in many places (including the title) it indicates PRBS13 instead

SuggestedRemedy

In section 178B.5.3.3 change 6 occurences of PRBS13 to PRBS31

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.1.4** *P* **255** *L* **1** # 26

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

ILT does not require the clock to be passed through the PMA. The mission data requires it. ILT operates with local clock.

SuggestedRemedy

Delete: "In order to support the inter-sublayer link training (ILT) function,"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.4.9** *P* **506** *L* **21** # 27

Huang, Kechao Huawei

Comment Type **T** *Comment Status* **D** *(bucket)*

In Figure 184-6, the bit "0" after "Seed X:" (and "Seed Y:") is not necessary.

SuggestedRemedy

In Figure 184-6, delete "0" after "Seed X:"; delete "0" after "Seed Y:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.3.3.1.1** *P* **568** *L* **1** # 28

Huang, Kechao Huawei

Comment Type **T** *Comment Status* **D** *(bucket)*

The FEC codeword with 1376256 bits are mapped to 172032 DP-16QAM symbols, not 173032

SuggestedRemedy

Change "173032" to "172032" in Line 1;
Change "173031" to "172031" in Line 2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "173032" to "172 032" in Line 1
Change "173031" to "172 031" in Line 2

Cl **186** *SC* **186.3.3.1.2** *P* **569** *L* **17** # 29

Huang, Kechao Huawei

Comment Type **T** *Comment Status* **D** *(bucket)*

In Figure 186-12, the indexes of payload symbols should be modified such that the total number of payload symbols are 172032

SuggestedRemedy

In Frame 0: "S<0:29>", "S<30:92>", "S<93:155>" should be changed to "S<0:19>", "S<20:82>", "S<83:145>"
In Frame 1: "S<14195:14257>" should be changed to "S<14185:14247>"
In Frame 23: "S<164870:164922>", "S<164923:164985>", "S<171979:172041>" should be changed to "S<164860:164912>", "S<164913:164975>", "S<171969:172031>"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.3.3.1.3** *P* **570** *L* **51** # 30

Huang, Kechao Huawei

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 186-4, there are 4 pilot symbols should be modified to aligned with that in OIF 800ZR.

SuggestedRemedy

Index 91 YQ: "-3" should be changed to "3"
Index 35 XQ: "-3" should be changed to "3"
Index 41 YI: "3" should be changed to "-3"
Index 71 XI: "-3" should be changed to "3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.3.3.1.7** *P* **574** *L* **15** # 31

Huang, Kechao Huawei

Comment Type **T** *Comment Status* **D** *(bucket)*

In Figure 186-14, "Insert Reserved field" should be included

SuggestedRemedy

Add "Insert Reserved field (X)" function below the "Insert TS field (X)"
Add "Insert Reserved field (Y)" function below the "Insert TS field (Y)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.1** *P* **94** *L* **17** # 35

KABRA, LOKESH SYNOPSYS

Comment Type **TR** *Comment Status* **D** *(bucket)*

Include update to 3.0.5:2 "Speed Selection" values corresponding to 800 Gb/s and 1.6 Tb/s in Table 45-211-- PCS control 1 register bit definitions

SuggestedRemedy

Modify 3.0.5:2 bit field "Speed selection" description

Existing
1 1 x x = Reserved

Proposed
1 1 1 x = Reserved
1 1 0 1 = 1.6 Tb/s
1 1 0 0 = 800 Gb/s

Similar changes to be done in 4.0.5:2 and 5.0.5:2 bit field descriptions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #1.

Cl **45** *SC* **45.2.3.2.7** *P* **94** *L* **17** # 36

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Update "PCS receive link status (3.1.2)" description

SuggestedRemedy

Existing
When a 10/25/40/50/100/200/400GBASE-R,

Proposed
When a 10/25/40/50/100/200/400/800GBASE-R, 1.6TBASE-R,

Second change :
Two instances of "(3.7.3:0)" to be corrected to "(3.7.4:0)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.6.1** *P* **94** *L* **44** # 37

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Include update to "PCS type selection" values corresponding to 800 Gb/s and 1.6 Tb/s in Table 45-214-- PCS control 2 register bit definitions

SuggestedRemedy

Modify 3.7.4:0 bit field "PCS type selection" description

Existing
1 0 1 x x = Reserved

Proposed
1 0 1 1 x = Reserved
1 0 1 0 1 = Select 1.6TBASE-R PCS type
1 0 1 0 0 = Select 800GBASE-R PCS type

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Also add editor's note referencing maintenance request 1437 that addresses the 800G rate.
Implement with editorial licence.

Cl **45** *SC* **45.2.3.8** *P* **94** *L* **45** # 38

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Add capability field for 800GBASE-R & 1.6TBASE-R in this register

SuggestedRemedy

In Table 45-216-- PCS Status 3 register bit definitions,

Existing

3.9.15:8	Reserved	Value always 0

Proposed

3.9.15:10	Reserved	Value always 0
3.9.15:9	1.6TBASE-R capable	1 = PCS is able to support 1.6TBASE-R PCS type 0 = PCS is not able to support 1.6TBASE-R PCS type
3.9.15:8	800GBASE-R capable	1 = PCS is able to support 800GBASE-R PCS type 0 = PCS is not able to support 800GBASE-R PCS type

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It is Table 45-239 that contains the ability bits, so modify Table 45-239.
Implement with editorial licence.

Cl **45** *SC* **45.2.3.8.1a** *P* **94** *L* **46** # 39

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Add new subsection

SuggestedRemedy

45.2.3.8.1a 1.6TBASE-R capable (3.9.9)
When read as a one, bit 3.9.9 indicates that the PCS is able to support the 1.6TBASE-R PCS type. When read as a zero, bit 3.9.9 indicates that the PCS is not able to support 1.6TBASE-R PCS type

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.8.1b** *P* **94** *L* **47** # 40

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Add new subsection

SuggestedRemedy

45.2.3.8.1b 800GBASE-R capable (3.9.8)
When read as a one, bit 3.9.8 indicates that the PCS is able to support the 800GBASE-R PCS type. When read as a zero, bit 3.9.8 indicates that the PCS is not able to support 800GBASE-R PCS type

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Also add editor's note referencing maintenance request 1439 that addresses the 800G rate.
Implement with editorial licence.

Cl **45** *SC* **45.2.3.15.1** *P* **94** *L* **48** # 41

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Update last line of 45.2.3.15.1

SuggestedRemedy

Existing
"100GBASE-R, and in 119.3 for 200G/400GBASE-R."

Proposed
"100GBASE-R, in 119.3 for 200G/400GBASE-R, in 172.3 for 800GBASE-R, and in 175.8 for 1.6TBASE-R.

Similar update required in 45.2.4.12.1, 45.2.5.12.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.4.13** *P* **97** *L* **34** # 42

KABRA, LOKESH SYNOPSYS

Comment Type **T** *Comment Status* **D** *(bucket)*

Update second line of paragraph

SuggestedRemedy

Existing
"This register is only required when the 200/400GBASE-R capability is supported. The test-pattern methodology is described in 119.2.4.9."

Proposed
"This register is required when the 200/400GBASE-R or 800GBASE-R or 1.6TBASE-R capability is supported. The test-pattern methodology is described in 119.2.4.9 for 200/400GBASE-R, in 172.2.4.11 for 800GBASE-R, and in 175.2.4.11 for 1.6TBASE-R."

Similar update required in 45.2.5.13.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174** *SC* **174.4** *P* **219** *L* **28** # 44

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

Table 174-4 has an incorrect cross-reference to the PCS delay constraints

SuggestedRemedy

Change the cross-reference from "175.4" to be "175.5".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.1.4** *P* **254** *L* **47** # 45

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

To convert from a AUI-2 to a AUI-1, a xBASE-R BM-PMA must be placed next to a xBASE-R SM-PMA.

SuggestedRemedy

Change: "… placed next to a 200GAUI-1 8:1 PMA."
To: "… placed next to a 200GBASE-R 8:1 PMA."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.1.5** *P* **255** *L* **50** # 46

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

Footnote (e) to Table 176-2 mentions the PMA to connect to a 800GBASE-LR1 Inner FEC is "For 800GBASE-R 8:16 only". But this looks like the wrong ratio of lanes for the 800GBASE-R PMA.

SuggestedRemedy

Change: "For 800GBASE-R 8:16 only"
To: "For 800GBASE-R 4:32 only."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.2** *P* **257** *L* **30** # 47

Opsasnick, Eugene Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 176-5, the middle column for the value of align_status_mux or all_locked_demux is listed as "N/A" for three of the rows. "N/A", not-applicable, implies there is no value or the status variable does not exist in this case. But the status variables are always there and in these cases, when the SIGNAL_OK input value is (not OK), they would have the value 'false'. But when the input SIGNAL_OK has a value of (not OK), the output does not really depend on the status variable, and it is a "don't care" for the calculation of the output IS_SIGNAL.indication.

SuggestedRemedy

In Table 176-5, Change the three entries of "N/A" for align_status_mux or all_locked_demux to "don’t care" (or "false"). The same change from "N/A" to "don’t care" should be applied to Table 176-6 on page 258.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "N/A" in Tables 176-5 and 176-6 to "don't care".
Apply this same change in Table 177-1 and Table 177-2.
Implement with editorial license.
[Editor's note: CC 177]

Cl **176** *SC* **176.4.4.2.1** *P* **271** *L* **10** # 48

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

The definition of the variable "reset" refers to another variable "PMA_reset", but PMA_reset is not defined anywhere.

SuggestedRemedy

Add the definition of PMA_reset to the list of variables just prior to reset. PMA_reset = "Boolean variable that is true when set by a management entity and is false otherwise."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **176** *SC* **176.7.2** *P* **280** *L* **33** # 50

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

It is stated that "During local loopback, the PMA continues to propagate data in the Tx direction and drives the Tx service interface below the PMA.". It is also stated in 176.7.3 on line 47 on the same page that "During remote loopback, the PMA continues to propagate data in the Rx direction and drives the Rx PMA service interface towards the PMA client." If both remote loopback and local loopbask are enabled, then these statements are contradictory. The service interfaces cannot transmit both loopback data and propoagated data.

SuggestedRemedy

The output data at each service interface should be defined when both local loopback and remore loopback are enabed (probably loopback data, not propagated data); or it must be stated that local loopback and remote loopback are mutually exclusive.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

On page 280, line 33…
replace: "During local loopback, the PMA continues to propagate data in the Tx direction and drives the Tx service interface below the PMA."
with: "During local loopback, the PMA continues to propagate data in the Tx direction."

And at line 47…
Replace:
"During remote loopback, the PMA continues to propagate data in the Rx direction and drives the Rx PMA service interface towards the PMA client"
with: "During remote loopback, the PMA continues to propagate data in the Rx direction."

Cl **178B** *SC* **178B.4** *P* **741** *L* **49** # 51

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

The cross-reference to the subclause with the definition of "tx_mode" is incorrect. This occurs three times in Annex 178B. On page 741, line 49, on page 742, line 16, and on page 743, line 4.

SuggestedRemedy

Change: "(tx_mode = data, see 178B.13.2.1)"
To: "(tx_mode = data, see 178B.13.3.1)"
with update of the hyperlink to the correct subclause in all three places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **172** *SC* **172.1.6** *P* **204** *L* **48** # 52

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

In Figure 172-2 (the block diagram of the 800G PCS), the lower interface says "PMA", but should be "PCS".

SuggestedRemedy

Change:"Service Interface below the PMA"
To: "Service Interface below the PCS"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.6.1** *P* **183** *L* **48** # 53

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

The cross-reference to the definition of FEC_degraded_SER and rx_local_degraded for DTE 1.6TXS is wrong. It should not be 175.2.6.2.2, rather it should be 175.2.5.3 and 175.2.5.5.

SuggestedRemedy

Change: "… defined in 175.2.6.2.2 for DTE1.6TXS, …"
To: "… defined in 175.2.5.3 and 175.2.5.5 for DTE 1.6TXS, …"
with updates of the hyperlinks to the correct subclauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.4.1** *P* **260** *L* **4** # 55

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

In figure 176-2 near line 4, there is an input called PMA:IS_SIGNAL.request. This input is required if the sublayer above the PMA is another PMA or an AUI. However, when the sublayer above the PMA is a PCS, this input is not present. All possbile PCS's, 200G/400G PCS (CL 119), 800G PCS (CL 172), and 1.6T PCS (CL 175) no not have this output at the service interface below the PCS.

SuggestedRemedy

A notation in Figure 176-2 should be added that PMA:IS_SIGNAL.request is not present when the sublayer above the PMA is a PCS or DTE XS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **176** *SC* **176.3** *P* **258** *L* **34** # 56

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

Table 176-6 specifies how to set the output inst:IS_SIGNAL.request(SINGAL_OK) based on the input PMA:IS_SIGNAL.request(SIGNAL_OK) and the variable align_status_mux or all_locked_demux. However, when the sublayer above the PMA is a PCS, there is no PMA:IS_SIGNAL.request input.

SuggestedRemedy

Suggest adding two rows to Table 176-6 to account for the case where PMA:IS_SIGNAL.request input is not present. Add two rows with N/A for the IS_SIGNAL.request(SIGNAL_OK) input, and the output is based only on the internal variable being true or false. Something like:

New row 1: | N/A | true | OK |
+----------+----------+------------+
New row 2: | N/A | false | READY |

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested but instead of N/A, use "no primitive".

In addition, add a table footnote to "no primitive" to explain that "no primitive" means that PMA:IS_SIGNAL.request input is not present, for example, when the sublayer above the PMA is a PCS or PHY XS.

Implement with editorial license.

Cl **169** *SC* **169.3.2** *P* **162** *L* **34** # 59

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

In Figure 169-3, the block labeled "800GBASE-R n:32 PMA" immediately above the 800GBASE-R PMD should be a "32:n PMA" (not n:32).

SuggestedRemedy

Change "800GBASE-R n:32 PMA" to "800GBASE-R 32:n PMA" on line 34 of page 162. Note that the "n" should also be in italics.

Consider changing it to "800GBASE-R 32:p PMA" and add a definition of p under the figure to be consistent with Figure 174-3 on page 217.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
For the PMA immediately above the PMD, change "800GBASE-R n:32 PMA" to "800GBASE-R 32:p PMA", with "p" in italic font.Note that the "n" should also be in italics.
For the PMD service interface change "PMD:IS_UNITDATA_0:n-1" to "PMD:IS_UNITDATA_0:p-1" twice.
Add "p = NUMBER OF STREAMS OF DATA UNITS" to the legend.

Cl **174** *SC* **174.3.2** *P* **217** *L* **31** # 60

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket)*

In Figure 174-3, the signal "PMA:IS_SIGNAL.request" from the 1.6TBASE-R PCS to the 1.6TBASE-R 16:p PMA should be removed. The PCS does not have this output - see Figure 175.2 on page 226. No relavant PCS has this output at the service interface below the PCS - see also Fig. 172-2 (on page 198 of 802.3df-2014) and Fig. 119-2 (on page 4837 of 802.3-2022). See also the similar extender figure 169-3 for 800GMII on page 162.

SuggestedRemedy

Remove "PMA:IS_SIGNAL.request" out of the 1.6TBASE-R PCS in Figure 174-3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2** *P* **323** *L* **4** # 62

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *(bucket)*

The editor's note addresses an assumption that measured jitter is affected by the loss to the measurement point. A contribution in July 2024, https://www.ieee802.org/3/dj/public/24_07/calvin_3dj_01b_2407.pdf, demonstrates this effect (see e.g. slide 9 showing the effect of "Slew rate"), so this should not be regarded as an "assumption" anymore.

Similar editor's notes appear in 179.9.4, 176D.3.3, and 176E.4.4.

While further work is still encouraged, the editor's notes should not question the effect.

SuggestedRemedy

In the listed editor's notes, replace "based on the assumption that that the measured jitter is affected by" with "to address the dependence of measured jitter on".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The subclauses listed in the comment are out of date.
Change the text as indicated in the suggested remedy in the editor's notes in 178.9.2, 179.9.4, 176C.4.3, and 176D.5.4.

Cl **178** *SC* **178.9.2.1.3** *P* **314** *L* **34** # 63

Ran, Adee Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **D** *TX fixture RLcc (bucket)*

Test fixture RLcc parameters are TBD.
In 163.9.2.1.3 the specification is >=6 dB up to 40 GHz.
The suggested remedy is the same minimum with the frequency range adopted for 802.3dj.
Alternatively, this specification can be deleted, since RLcc of a bare TP0-TP0v test fixture (without a DUT attached to it) may be impractical to measure.

SuggestedRemedy

Change to "6 dB at all frequencies between 0.2 GHz and 67 GHz".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.6.1.4** *P* **643** *L* **31** # 78

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *(bucket)*

The description of the process can be simplified by initializing the distribution to that of BER_added (step c) and then iterating with i from 0 to p-1 (instead of treating i=0 as initial value). This would remove two steps (a and d) and yield the same result with fewer intermediate variables..

SuggestedRemedy

Rewrite the process as suggested.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The suggested change is indeed an improvement to the draft. The method is simplified without changing the result.
For illustration, the method rewritten as suggested is shown on the slide for Comment 78 in the following file:
https://www.ieee802.org/3/dj/public/24_11/brown_3dj_03_2411.pdf
Implement the suggested remedy with editorial license.

Cl **179B** *SC* **179B.4.1** *P* **781** *L* **47** # 84

Ran, Adee Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **D** *(bucket)*

The signaling rate and reference receiver bandwidth have been adopted.
(This was addressed by comment #442 against D1.1, but the resolution was not fully implemented).

SuggestedRemedy

Replace TBDs: f_b=106.25 GBd and f_r=0.55*f_b.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
[Editor's note: Changed page from 747 to 781]

Cl **179A** *SC* **179A.5** *P* **774** *L* **34** # 85

Ran, Adee Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **D** *(bucket)*

Equations 179A-1 and 179A-2 have "TP2d" and "TP3d" which should be TP2 and TP3 (there is no "d" version). Also in the parameter list.

SuggestedRemedy

Change TP2d to TP2, and TP3d to TP3, in the equation and parameter list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.9.5** *P* **365** *L* **39** # 95

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *(bucket)*

The words "each lane" are not helpful for "signaling rate". All specifications hold for each lane - signaling rate is not special. Also it cannot be aggregated (unlike power and bit rate).

This was corrected in D1.2 in most places in the electrical clauses, but these words still appear in Table 179-10, Table 176D–3, and Table 176D–4.

SuggestedRemedy

Delete "each lane" from the signaling rate in the 3 tables mentioned.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176C** *SC* **176C.2** *P* **677** *L* **22** # 113

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

Figure 178-2. The signals SLi and DLi are never defined in Annex 176C.

SuggestedRemedy

In Figure 176C-2, add a note similar to the note in Figure 179-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.4** *P* **748** *L* **27** # 114

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

Mode "PAM4" is ambiguous compared with "PAM4 with precoding".

SuggestedRemedy

When referencing the test pattern mode change mode "PAM4" to "PAM4 without precoding". Propagate this change throughout Annex 178B as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **578** *L* **18** # 118

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

PCS_reset and PMA_reset definition refers to MDIO, rather than management in general.

SuggestedRemedy

Define reset, PCS_reset, and PMA_reset as done for the 1.6TBASE-R PCS in 175.2.6.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Define the state variables as suggested. Implement with editorial license.

Cl **182** *SC* **182.9.1** *P* **463** *L* **9** # 121

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

Table 182-16. The Inner FEC is specifically called 200GBASE-R Inner FEC, 400GBASE-R Inner, etc. Reference it by name.

SuggestedRemedy

Change "Scrambled idle test pattern encoded by the Inner FEC used by 200GBASE-R, 400GBASE-R, 800GBASE-R, or 1.6TBASE-R"
To "Scrambled idle test pattern encoded by the 200GBASE-R, 400GBASE-R, 800GBASE-R, or 1.6TBASE-R Inner FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license

Cl **183** *SC* **183.9.5.1** *P* **491** *L* **21** # 123

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 183-5 footnote a the is reference to an annex describing statistical link design methodology. However, this annex does not exist. Also, it seems that all of the necessary background is provided in the reference to G.652 Appendix I.

SuggestedRemedy

Delete ", and the optical channel characteristics methodology described in Annex TBD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license

Cl **183** *SC* **183.9.5.1** *P* **491** *L* **23** # 124

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 183-5 footnote c it says "The optical return loss is applied at TP2." And in a later paragraphs it says "The channel provides an optical return loss specified in Table 183–15." Return loss is a ratio of transmitted signal to the reflected signal. The intent I believe is that the channel provides back-reflection with a target return loss given in Table 183-15. Subclause 139.7.5.1 uses the following text "The optical splitter and variable reflector are adjusted so that each transmitter is tested with the optical return loss specified in Table 139–11."

SuggestedRemedy

Change footnote b to "The back-reflection is applied at TP2."
Change "The channel provides an optical return loss specified in Table 183–15." to "The channel provides back reflection with return loss specified in Table 183-15."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **119** *SC* **119.2.6.2.1** *P* **148** *L* **17** # 136

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

SIGNAL_OK parameter is now defined with four parameters {OK, IN_PROGRESS, READY, FAIL} rather than two {OK, FAIL}. The signal_ok variable value is not defined for the two new values, only for OK and FAIL.

SuggestedRemedy

In 119.2.6.2.1 in the definition of the signal_ok variable…
Replace "It is true if the value was OK and false if the value was FAIL."
With: "It is true if the value was OK and false otherwise."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B** *P* **740** *L* **8** # 137

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

ILT as defined in Annex 178B is relevant only to Physical Layer implementations that include physically instantiated links with 200 Gb/s or higher per lane. This should be clarified.

SuggestedRemedy

Add new subclause 178A.1 with title "Scope" and text as follows:
"This clause defines inter-sublayer link training (ILT) for Physical Layer implementations that include one or more inter-sublayer links (ISLs) (see 178B.2) with data rate of 200 Gb/s or higher per lane."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In the suggested remedy there is a typo, it should say: "subclause 178B.1"
Implement the suggested remedy with editorial license.

Cl **182** *SC* **182.9.1** *P* **463** *L* **9** # 139

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

Table 182-16. Test pattern 3, currently PRBS31Q is defined for use for receiver sensitivity. Since the PMD types defined in Clause 182 use Inner FEC, the PRBS31Q should be encoded with Inner FEC, similar to Pattern 5.

SuggestedRemedy

In Table 182-16, change test pattern 4 from "PRBS31Q" to "PRBS31Q encoded by the 200GBASE-R, 400GBASE-R, 800GBASE-R, or 1.6TBASE-R Inner FEC" and update the defining references.
Make the same change in Table 183-12.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license

Cl **178** *SC* **178.8.1** *P* **320** *L* **50** # 140

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

Figure 178-2. The signals SLi and DLi are never defined in Clause 178.

SuggestedRemedy

In Figure 178-2, add a note similar to the note in Figure 179-2. Do the same for Figure 176C-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178A** *SC* **178A.1.10.2** *P* **737** *L* **5** # 141

Banas, David — Keysight Technologies, Inc.

Comment Type **T** *Comment Status* **D** *(bucket)*

The current definition of Ani yields an effective DER0 twice that intended, because it considers only the left tail of the distribution, while both left and right tails contribute to DER0.

SuggestedRemedy

P(-Ani) = DER0/2

Proposed Response *Response Status* **W**

PROPOSED REJECT.
DER is (and always has been) defined to be the area under the left (or negative) tail of the noise and interference distribution function. DER is not equivalent to a PAM-L symbol error ratio. The conversion between DER and a PAM-L symbol error ratio (SER) is clarified in NOTE 2 under 178A.1.10.2.The factor of (2L-2)/L in this conversion accounts for all of the possible ways the distribution of noise and interference amplitude can cross a PAM-L decision threshold.

Cl **176C** *SC* **176C.2** *P* **678** *L* **11** # 153

Dudek, Mike — Marvell

Comment Type **TR** *Comment Status* **D** *(bucket)*

Figure 176D-2 is still confusing. The boxes around what are called components don't include the package, which is part of what is being called a component in the text.

SuggestedRemedy

Change from "C2C component transmitter" and "C2C component receiver" to "C2C transmitter" and "C2C receiver" or "C2C transmitter device" and "C2C receiver device" or less preferred "C2C transmit function" and "C2C receive function" (as used in figure 178-2)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the text to "C2C transmitter' and 'C2C receiver'.

Cl **176C** *SC* **176C.4.3.1** *P* **681** *L* **18** # 154

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket)*

The only references to a PMA management function in 802.3dj are in clause 186 which isn't relevant to this AUI interface. The correct control function to be used for this C2C interface is the same as the one used in Clauses 178 and 179. The reference to the description is blank.

SuggestedRemedy

Delete the sentence. "The transmitter output may be manipulated using the control function or PMA management
interface as described in ."
Add a new paragraph "The transmitter output may be manipulated using the Type E1 Inter Sublayer link training function as described in Annex 178B.10

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

Cl **176D** *SC* **176D.6.12.1** *P* **711** *L* **34** # 157

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket)*

Incomplete sentence that needs to be completed to make the test complete as pointed out in the editor's note

SuggestedRemedy

Implement the editor's note (and then delete the editor's note).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** *SC* **176D.7.12.4** *P* **714** *L* **37** # 158

Dudek, Mike Marvell

Comment Type **T** *Comment Status* **D** *(bucket)*

It would be good to clarify that Preset 1 is maximum amplitude.

SuggestedRemedy

Change "transmitters in the DUT transmit a scrambled idle pattern with equalization turned off (preset 1 condition)." to transmitters in the DUT transmit a scrambled idle pattern at maximum amplitude with equalization turned off (preset 1 condition)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Preset 1 is well defined and can be used as the specification, with its explanation in parentheses.
Change from
"transmitters in the DUT transmit a scrambled idle pattern with equalization turned off (preset 1 condition)"
to
"transmitters in the DUT transmit a scrambled idle pattern at preset 1 (maximum amplitude with no equalization)".

Cl **178B** *SC* **178B.4.2** *P* **742** *L* **49** # 159

Dudek, Mike Marvell

Comment Type **T** *Comment Status* **D** *(bucket)*

"data may not be available in one interface" doesn't make sense.

SuggestedRemedy

Change to "data may not be available from one interface"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179A** *SC* **179A.4** *P* **774** *L* **12** # 161

Dudek, Mike Marvell

Comment Type **T** *Comment Status* **D** *(bucket)*

TP5 should be TP5d in Table 179A-1 as stated in the text.

SuggestedRemedy

Change TP5 to TP5d

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.213b** *P* **90** *L* **51** # 164

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket)*

Add MDIO register for newly added "align_status" variable, see 177.4.1 and 177.11. It might be confusing to put it in 45.2.1.213b since the registers now in the table are for Inner FEC receive direction. We could

SuggestedRemedy

In 45.2.1.213b, add a new row above "Inner FEC lock 7" for the "align_status" in 177.4.1 and 177.11:
Bit(s) / Name / Description / R/W
1.2401.8 / align_status / alignment marker lock status for Inner FEC transmit direction / RO
And change "1.2401.15:8" to "1.2401.15:9" in the first row.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There need to be bits for all 8 FEC lanes so use bits 1.2401.15 to 1.2401.8 for "Inner FEC alignment".

Add new bit definitions of the form: "1.2401.8 / Inner FEC alignment 0 / 1 = lane 0 is aligned / RO" etc.

Implement with editorial license.

Cl **171** *SC* **171.1.1** *P* **177** *L* **9** # 166

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

The "can be" was changed to "may be" in D1.2, but the corresponding statement for 800G at the bottom of the preceding page is still "can be", making the wording inconsistent between the two rates.

SuggestedRemedy

Other similar extender sublayer clauses also use "can be". Change the "may be" back to "can be".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.9.4.1** *P* **196** *L* **50** # 168

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

The PTP accuracy feature should be a PICS item that is conditional on being connected to an 800GBASE-ER1 PCS (i.e., we want all implementations to have the feature available; the MDIO variable can turn it on or off if users prefer to not use it).

SuggestedRemedy

Add a PICS item for 'supports the enhanced PTP accuracy' feature.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **180** *SC* **180.9.1** *P* **410** *L* **9** # 170

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 180-16, the cross-references for the PRBS31Q, PRBS13Q, and SSPRQ patterns are incorrect; PRBS13Q is defined in 120.5.11.2.1, PRBS31Q in 120.5.11.2.2, SSPRQ in 120.5.11.2.4

SuggestedRemedy

Correct the references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license

Cl **181** *SC* **181.9.1** *P* **434** *L* **17** # 171

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 181-11, the cross-references for the PRBS31Q, PRBS13Q, and SSPRQ patterns are incorrect; PRBS13Q is defined in 120.5.11.2.1, PRBS31Q in 120.5.11.2.2, SSPRQ in 120.5.11.2.4

SuggestedRemedy

Correct the references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license

Cl **182** *SC* **182.9.1** *P* **463** *L* **9** # 172

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 182-16, the cross-references for the PRBS31Q and PRBS13Q patterns are incorrect; PRBS13Q is defined in 120.5.11.2.1, PRBS31Q in 120.5.11.2.2

SuggestedRemedy

Correct the references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license

Cl **183** *SC* **183.9.1** *P* **488** *L* **9** # 173

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 183-12, the cross-references for the PRBS31Q, PRBS13Q, and SSPRQ patterns are incorrect; PRBS13Q is defined in 120.5.11.2.1, PRBS31Q in 120.5.11.2.2, SSPRQ in 120.5.11.2.4

SuggestedRemedy

Correct the references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license
[matt] implement what?
[tom] fixed wording

Cl **184** *SC* **184.4.3** *P* **500** *L* **17** # 174

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

pcsla[q,i] is defined both here and in the first bullet at line 21, using slightly different words.

SuggestedRemedy

Delete the sentence at line 17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.4.9** *P* **505** *L* **15** # 175

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

Table 184-2 and Table 184-4 (in 184.4.11.1) both show the entire pilot sequence. The first table shows it as bit pairs, the second as 4-level signal values as defined by the mapping in Table 184-3. It seems unncessary to duplicate the information in both formats. The concept of the pilot sequence needs to be introduced in 184.4.9, at least up thorugh Table 184-1 with the generator polynomial and seeds. Some of the information in 184.4.11.1 is also useful to understand, ie., that the values of the pilot sequence are chosen such that they will produce symbols that use the 'outer' points of the constellation, but otherwise the information in 184.4.11.1 seems unnecessary since 184.4.11 is about mapping bit pairs to symbols, and that mapping is itself the same for all bits in the DSP frame

SuggestedRemedy

Insert this text in 184.4.9, following table 184-1:
The bit-pairs that compose the pilot sequence are shown in table 184-2. They are selected such that they will produce symbols that use the outer 16QAM constellation points, as shown in figure 184-2.

Move figure 184-7 to be above table 184-2.

Delete clause 184.4.11.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **187** *SC* **187.3.1.2.1** *P* **597** *L* **38** # 176

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

The names of the receive components were changed from X and Y to A and B in the 800GBASE-ER1 PMA

SuggestedRemedy

Change X and Y to A and B

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **187** *SC* **187.5.1** *P* **598** *L* **47** # 177

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

Missing a reference to the clause where the tests and measurements for the transmitter are defined.

SuggestedRemedy

In the text "… all transmitter measurements and tests defined in are made at TP2…", insert "187.8 and 187.9" between "in" and "are"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **187** *SC* **187.5.1** *P* **599** *L* **33** # 178

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

In figure 187-5, the receive signals show two sets of AI and AQ

SuggestedRemedy

Change the second set of signals to BI and BQ

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #21.

Cl **187** *SC* **187.5.2** *P* **600** *L* **4** # 179

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

The title of Table 187-2 needs to be modified - the PMD only deals with analog signals, not DP16QAM symbols. The table is indicating how those analog signals received from the PMA can be mapped to the inputs to the modulator.

SuggestedRemedy

Change the title to "Allowed analog signal to moduator input mappings"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **187** *SC* **187.5.3** *P* **600** *L* **25** # 180

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket)*

In the parenthetical text, both polarizations are being identified as A

SuggestedRemedy

Change the second AI and AQ to BI and BQ

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #22.

Cl **179C** *SC* **179C.3.1** *P* **802** *L* **8** # 187

D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **D** *(bucket)*

Looks like cut / paste error
Reference to Annex 162C is incorrect for Annex 179C.3.1
Wrong PMDs are referenced

SuggestedRemedy

Correct 1st sentence to
The supplier of a protocol implementation that is claimed to conform to Annex 179C, MDIs for
200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8 shall complete the following protocol
implementation conformance statement (PICS) proforma.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Most of the PICS items needs to be updated.
Implement suggested remedy and update the PICS items with editorial license and discretion.

Cl **178A** *SC* **178A.1.4.3** *P* **727** *L* **42** # 197

Li, Tobey MediaTek

Comment Type **TR** *Comment Status* **D** *(bucket)*

Shaunt capacitance is defined in 93A.1.2.2

SuggestedRemedy

Change the reference of shunt capacitor C1 from 93A.1.2.2a to 93A.1.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178A** *SC* **178A.1.6** *P* **728** *L* **24** # 198

Li, Tobey MediaTek

Comment Type **TR** *Comment Status* **D** *(bucket)*

Transmitter equalizer is defined in 178A.1.6.1

SuggestedRemedy

Change the reference to transmitter equalizer transfer function from 178A.1.2 to 178A.1.6.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **182** *SC* **182.9.1** *P* **463** *L* **32** # 199

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

In Table 182-17... The last pattern listed is "valid 200GBASE-R, 400GBASE-R, 800GBASE-R or 1.6TBASE-R signal". But this is not correct. It should be encoded by the Inner FEC, similar to test pattern 5. Given we repeated refer to this valid BASE-R signal, why not just define it as a test pattern.

SuggestedRemedy

In Table 182-16 add a new test pattern as follows:
Pattern: 7
Pattern description: "Valid 200GBASE-R, 400GBASE-R, 800GBASE-R, or 1.6TBASE-R signal encoded by the 200GBASE-R, 400GBASE-R, 800GBASE-R, or 1.6TBASE-R Inner FEC.
In Table 182-17 replace "valid 200GBASE-R, 400GBASE-R, 800GBASE-R or 1.6TBASE-R signal" with "7".
Similarly update Table 183-12 and Tabley 183-13.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license

Cl **186** *SC* **186.3.1.3** *P* **565** *L* **47** # 203

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket)*

Now that the receive signal names are sufficiently unique compared to the transmit signal names AND it is already explained in 187.5.3, the note at the bottom of Figure 186-11 is no longer required.

SuggestedRemedy

Delete the note at the bottom of Figure 186-11.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
[Editor's note: Changed the Clause/Subclause from 00/0 to 186/186.3.1.3]

Cl **179** *SC* **179.9.4.9** *P* **364** *L* **4** # 204

Healey, Adam Broadcom Inc.

Comment Type **T** *Comment Status* **D** *(bucket)*

Equation (179-9) and Figure 179-4 do not agree.

SuggestedRemedy

In Equation (179-9), change "4 <= f < 40" to "4 <= f < 44".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The intended equation was with a breaking point at 44 GHz as written in the suggested remedy, consistent with the test fixture specifications.
Implement the suggested remedy and additionally change "40 <= f <= 60" to "44 <= f <= 60".

Cl **179** *SC* **179.9.4.10** *P* **364** *L* **46** # 205

Healey, Adam Broadcom Inc.

Comment Type **T** *Comment Status* **D** *(bucket)*

Equation (179-10) and Figure 179-5 do not agree.

SuggestedRemedy

In Equation (179-10), change "6(f-12.89)/(35-12.89)" to "5(f-12.89)/(35-12.89)". Make the same change to Equation (179-20).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.9.5.1** *P* **413** *L* **12** # 229

Johnson, John Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

PMD types in Table 180-19 are wrong

SuggestedRemedy

Change PMD types from DRn-2 to DRn in Table 180-19

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement with editorial license

Cl **181** *SC* **181.9.5.1** *P* **437** *L* **10** # 232

Johnson, John Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

Lane lables {L0, L1, L2, L3} in Table 181-14 should be {0, 1, 2, 3}

SuggestedRemedy

Change lane labels {L0, L1, L2, L3} in Table181-14 to {0, 1, 2, 3}, in order to match lane assignments in Table 181-3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement with editorial license

Cl **182** *SC* **182.7.2** *P* **454** *L* **35** # 235

Johnson, John Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

The requirement of no aggressors for 200G-DR1-2 only applies to single lane devices. If a DR1-2 PMD shares a multi-lane device with other DRn-2 PMDs, then the aggressor lanes must be used.

SuggestedRemedy

Change Table 182-8 footnote (e) to read: "No aggressors needed for 200GBASE-DR1-2 in a single lane device." as in footnote (e) of Table 180-8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license

Cl **183** *SC* **183.9.5.1** *P* **491** *L* **4** # 237

Johnson, John Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

Lane lables {L0, L1, L2, L3} in Table 183-15 should be {0, 1, 2, 3}

SuggestedRemedy

Change lane labels {L0, L1, L2, L3} in Table183-15 to {0, 1, 2, 3}, in order to match lane assignments in Table 183-3 and 183-4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **185** *SC* **185.6.2** *P* **532** *L* **34** # 239

Johnson, John Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

ETCC inequality is pointing the wrong way

SuggestedRemedy

Change condition to read: "for 1 < ETCC <= 3.4 dB"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.3** *P* **258** *L* **34** # 248

Shrikhande, Kapil Marvell

Comment Type **TR** *Comment Status* **D** *(bucket)*

In Table 176-6, when the sublayer above the PMA is a PCS, there is no PMA:IS_SIGNAL.request input (no PCS drives this signal). The table does not cover the common case of an m:n PMA with a PCS above.

SuggestedRemedy

Add two additional rows to the table with N/A in the left most column (no input value), and determine the output value of inst:IS_SIGNAL.request SIGNAL_OK signal depending only on the value of the align_status_mux variable. Alternative would be to have the PCS drive a signal to the PMA.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement using response to comment #56.

Cl **176** *SC* **176.3** *P* **258** *L* **26** # 249

Shrikhande, Kapil Marvell

Comment Type **TR** *Comment Status* **D** *(bucket)*

The subclause is about the service interface below the PMA. Therefore, the PMA:IS_SIGNAL.indication primitive should be inst:IS_SIGNAL.indication, and the PMA:IS_SIGNAL.request primitive should be inst:IS_SIGNAL.request.

SuggestedRemedy

Replace PMA with inst as outlined in the comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **182** *SC* **182.9.13** *P* **468** *L* **4** # 302

Ghiasi, Ali Ghiasi Quantum

Comment Type **T** *Comment Status* **D** *(bucket)*

121.8.10 is the Wrong reference

SuggestedRemedy

It should be 121.8.9

Proposed Response *Response Status* **W**

PROPOSED REJECT.

182.9.13 is "Stressed receiver sensitivity" and the current cross reference is to "Stressed receiver sensitivity" which is correct. The suggested remedy points to "Receiver sensitivity" which is incorrect.

Note editorial comment #300 is the same comment against 180.9.13 and will not be implemented.

Cl **179B** *SC* **179B.2** *P* **778** *L* **12** # 310

Ghiasi, Ali Ghiasi Quantum

Comment Type **T** *Comment Status* **D** *(bucket)*

Figure is not visiable just the labels are visiable

SuggestedRemedy

Please use an import that is visibale in pdf

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See Editor's note: "Figure 179B-1 equations have not been adopted, and serve as placeholders."

There is no graphic to display in Draft 1.2.

Cl **179B** *SC* **179B.4.1** *P* **782** *L* **12** # 311

Ghiasi, Ali — Ghiasi Quantum

Comment Type **T** *Comment Status* **D** *(bucket)*

Figure is not visiable just the labels are visiable

SuggestedRemedy

Please use an import that is visibale in pdf

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See Editor's note: "Figure 179B-2 equations have not been adopted, and serve as placeholders."

There is no graphic to display in Draft 1.2.

Cl **171** *SC* **171.9** *P* **195** *L* **1** # 321

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket)*

Need to update PICS to include path data delay for time synchronization (see 171.6b) . See 175.9.4.7 as an example for what was done for the 1.6TBASE-R PCS in Clause 175.

SuggestedRemedy

Updated PICs to include path data delay for time synchronization. See 175.9.4.7 as an example.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **171** *SC* **171.9** *P* **195** *L* **1** # 322

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket)*

Need to add a PICS item to address optional support for Enhanced PTP accuracy (see 171.6a).

SuggestedRemedy

Update PICS to add an item for optional support of Enhanced PTP accuracy (referencing 171.6a)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **176** *SC* **176.12** *P* **252** *L* **1** # 323

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket)*

Need to update PICS to include path data delay for time synchronization (see 176.10) . See 175.9.4.7 as an example for what was done for the 1.6TBASE-R PCS in Clause 175.

SuggestedRemedy

Updated PICs to include path data delay for time synchronization. See 175.9.4.7 as an example.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.12** *P* **311** *L* **1** # 324

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket)*

Need to update PICS to include path data delay for time synchronization (see 177.10) . See 175.9.4.7 as an example for what was done for the 1.6TBASE-R PCS in Clause 175.

SuggestedRemedy

Updated PICs to include path data delay for time synchronization. See 175.9.4.7 as an example.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **184** *SC* **184.10** *P* **519** *L* **1** # 325

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket)*

Need to update PICS to include path data delay for time synchronization (see 184.8) . See 175.9.4.7 as an example for what was done for the 1.6TBASE-R PCS in Clause 175.

SuggestedRemedy

Updated PICs to include path data delay for time synchronization. See 175.9.4.7 as an example.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **186** *SC* **186.8** *P* **589** *L* **1** # 326

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket)*

Need to update PICS to include path data delay for time synchronization (see 186.6) . See 175.9.4.7 as an example for what was done for the 1.6TBASE-R PCS in Clause 175.

SuggestedRemedy

Updated PICs to include path data delay for time synchronization. See 175.9.4.7 as an example.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **177** *SC* **177.5.2** *P* **298** *L* **32** # 362

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

Where flow 0 is "will be" indentified once the lock process is complete, it's not possible to fail to do that.

SuggestedRemedy

Change "may be" to "is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **176** *SC* **176.1.4** *P* **255** *L* **1** # 372

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

Forwarding of the clock is a necessary function for the PMA regardless of ILT. Since the PMA does not do any PPM compensation.

SuggestedRemedy

Remove the last paragraph of 176.1.4 that begins with "In order to support the inter-sublayer link training"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using response to comment # 26.

Cl **171** *SC* **171.9** *P* **195** *L* **0** # 380

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

No PICS for TimeSync functions

SuggestedRemedy

Add PICS similar to Table 175-4 to Clause 171 but also add in the Enhanced PTP accuracy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **171** *SC* **171.6a** *P* **184** *L* **18** # 381

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

The opening paragraph is not accurately representing the Enhanced PTP accuracy functionality.

SuggestedRemedy

Update the first paragraph to read:
If the sublayer below the 800GXS is an 800GBASE-ER1 PCS, the enhanced PTP accuracy feature provides the indication of where in the 800GMII stream 800GBASE-R alignment markers once existed. This indicator allows for subsequent insertion of 800GBASE-R alingment markers into the same spot in the data stream.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **177** *SC* **177.4.2** *P* **291** *L* **45** # 383

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

With the addition of the deskew process the Convolutional interleaver no longer uses the PMA lanes directly but rather the deskewed lanes.

SuggestedRemedy

Add the word "deskewed" before PMA in the first sentence of 177.4.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **177** *SC* **177.4.2** *P* **291** *L* **47** # 384

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

No mechanism to identify the RS-FEC symbol boundaries is provided.

SuggestedRemedy

Change the sentence that begins with "The four RS-FEC symbols in each RS-FEC symbol-quartet are from four different RS-FEC codewords"
to "Using the RS-FEC boundaries found by the Alignment and Deksew process (see 177.4.1) the convolutioner interleaver creates groups of four RS-FEC symbols from four RS-FEC codewords."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **177** *SC* **177.5.2** *P* **298** *L* **22** # 386

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

Steps a) and b.2) and c) tell us what step to proceed to but b.1) does not.

SuggestedRemedy

Add go to step c) to end of step b) 1)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **177** *SC* **177.5.2** *P* **298** *L* **22** # 388

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

Explanation of the sync process is not necssary just point to the FSM.

SuggestedRemedy

Remove steps a,b,c

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The high level descriptive text can be helpful to readers to understand the intent of the state machine. The state machine description always prevails

Cl **177** *SC* **177.6.3** *P* **303** *L* **29** # 390

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket)*

The exit from CW_CHECK_1 and CW_CHECK_2 for values of 13 have the wrong variable name

SuggestedRemedy

Change valid_cw=13 to valid_cw_cnt=13 two places Fig 177-9

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **1** *SC* **1.3** *P* **50** *L* **41** # 398

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket)*

The OSFP specification has been updated. Notice that 1.3 says "Standards may be subject to revision, and parties subject to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below"

SuggestedRemedy

Update OSFP from Rev 5.0, October 2, 2022 to Rev 5.1, September 12th, 2024, or remove the date and revision number from the reference.
Update any other references as appropriate if new revisions are published.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update OSFP from Rev 5.0, October 2, 2022 to Rev 5.1, September 12th, 2024.

Cl **176D** *SC* **176D.7.12** *P* **711** *L* **31** # 412

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

The figures "Example host output test configuration" and "Example module output test configuration" have gone missing.

SuggestedRemedy

Reinstate them. They are needed to show the crosstalk calibration, as one cannot assume that the host generates the same crosstalk as the MCB.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The output specification methodology adopted for C2M is different from the one previously used. It does not include counter-propagating crosstalk and its calibration As a result, most of the content of the previously used figures is irrelevant.
Note that the content is based on that of CR transmitter specifications, which has been used for several generations and does not have similar figures.

Cl **186** *SC* **186.2.2** *P* **550** *L* **17** # 417

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket)*

Some of the material here is not "overview, it is part of the transmit function or the receive function as Figure 186-3 shows.

SuggestedRemedy

Move some of the material in lines 17 to 34 to 186.2.3, and some of the material in lines 36 to 47 to 186.2.4, with editorial licence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The overall structure of 186.2.2 mirrors that of 172.2.1, but there probably is too much detail here regarding the size of the FEC codewords, the number of mapping lanes, the use of GMP, etc. Streamline the overview text in this clause to focus on what is done at a high level (in the transmit direction: encode the data from the MII, map to the PCS frame, add FEC, map to DP-16QAM symbols that are provided ot the PMA). Implement with editorial license.

Cl **186** *SC* **186.2.2** *P* **550** *L* **29** # 419

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket)*

This says "a spatially-coupled TPC-like code". "TPC" and "spatial" do not appear anywhere else in the draft.

SuggestedRemedy

Explain what is meant by "spatially-coupled" and "TPC" and "TPC-like code".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace 'spatially-coupled TPC-like code' with 'extended BCH(256,239) soft-decision code' with editoiral license.