Cl **30** *SC* **30.5.1.1.2** *P* **62** *L* **30** # 3

Marris, Arthur — Cadence Design Systems

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

The desription of 200GBASE-DR1-2 should include mention of the inner FEC requirement to distinquish it from the 200GBASE-DR1 description

SuggestedRemedy

Change "200GBASE-R PCS/PMA over single-mode fiber PMD" to "200GBASE-R PCS/PMA with type 200GBASE-R Inner FEC"

Make similar changes to 400GBASE-DR2-2, 800GBASE-DR4-2,and 1.6TBASE-DR8-2)

Change "800GBASE-R PCS/PMA over single-mode fiber PMD" to "800GBASE-R PCS/PMA with type 800GBASE-LR1 Inner FEC over single-mode fiber PMD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy except:

Change "200GBASE-R PCS/PMA over single-mode fiber PMD" to "200GBASE-R PCS/PMA with type 200GBASE-R Inner FEC over single-mode fiber PMD"

Implement with editorial license.

Cl **45** *SC* **45.2.1.168a** *P* **95** *L* **6** # 4

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Typo "PRBS" should be "PRBS31"

SuggestedRemedy

Change "The assignment of bits in the PRBS seed value lane 0 register" to "The assignment of bits in the PMA/PMD PRBS31 seed value lane 0 register"
Also change "The assignment of bits in the PMA/PMD training pattern lanes 1 through 7 registers" to "The assignment of bits in the PMA/PMD PRBS31 seed value lanes 1 through 7 registers" on lines 6 and 7 of page 95

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.60c** *P* **82** *L* **4** # 5

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Typo, missing "2"

SuggestedRemedy

Change "45.2.1.60c 800G PMA/PMD extended ability register (Register 1.74)" to "45.2.1.60c 800G PMA/PMD extended ability 2 register (Register 1.74)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.168b** *P* **96** *L* **3** # 6

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Typo, missing word "interface"

SuggestedRemedy

Change "The assignment of bits in the PMA/PMD training status register" to "The assignment of bits in the PMA/PMD interface training status register"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.258** *P* **109** *L* **3** # 7

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Correct table name

SuggestedRemedy

Change "Table 45–212g—PMA/PMD status 1 register bit definitions" to "Table 45–212g—Inner FEC status 1 register bit definitions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **116** *SC* **116.3.2** *P* **156** *L* **48** # 8

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Strikethrough and underlining not correct on line 48

SuggestedRemedy

Correct underlining and strike throughs to indicate change from "in Figure 116–2 and Figure 116–3," to "in Figure 116–2 through Figure 116–3a". That is strikethrough "and Figure 116–3" and underline "through Figure 116–3a"

Proposed Response *Response Status* **W**

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

Cl **176** *SC* **176.7.4.2** *P* **317** *L* **16** # 9

Marris, Arthur — Cadence Design Systems

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

The PRB31Q pattern needs decoding before being sent to the PRBS31 checker, not after it has been sent to the checker.

SuggestedRemedy

Change the word "followed" to "preceded" in "The PRBS31Q test pattern checking is provided by the PRBS31 checker (see 176.7.4.1), followed by inverse precoding (if enabled), and inverse Gray mapping in the PAM4 decoder (see 176.4.3.5)." Also consider using similar wording in 177.6.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace the word "followed" by "preceded" as per the suggested remedy in 176.7.4.2.

No updates necessary in 177.6.2.2 because wording is different and the suggested remedy does not apply.

Cl **45** *SC* **45.2.1.269** *P* **115** *L* **45** # 10

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Change "lower" to "bottom" to match Annex 178B nomenclature

SuggestedRemedy

Change "lower AUI" to "bottom AUI" in two places

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.4** *P* **678** *L* **3** # 36

Salvekar, Atul — Cadence Design Systems

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

Uncorrelated is iid for Gaussian Distributions. However, I believe this not to be the case generally. I believe the correct term to put is in independent and identically distributed (iid) with a Binomial Distribution.

SuggestedRemedy

Change "If the errors at the
input of the RS-FEC are uncorrelated"

to

"If the errors at the
input of the RS-FEC are iid with a Binomial Distribution"

Change other places in 174A with editorial discretion.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Uncorrelated means that the probability of any bit or symbol being errored is independent of errors on any other symbol. This term is used broadly throughout 802.3.
A binomial distribution is a statistical representation probability the number of errors expected within a set of bits or symbols.

Cl **175** *SC* **175.2.4.10** *P* **272** *L* **13** # 37

Salvekar, Atul — Cadence Design Systems

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Put in Generator Polynomial

SuggestedRemedy

Change "X^58 scrambler" to "G(x) =1 + x^39 + x^58"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The "X^58 scrambler" on this page is just a label for this functional block in the figure - using the polynomial itself as the block label would lose the reference that the block is the "scrambler". It would be more appropriate to use the name of the function as defined in the title of subclause 175.2.4.5 "Scrambler" on page 264. The polynomial to be used in the scrambler is defined in the text in that subclause by reference to Equation 49-1.

In figure 175-7, on page 272, change the block labels at line 12
from:
"X^58 scrambler"
to:
"Scrambler"

Cl **176C** *SC* **176C.3** *P* **721** *L* **15** # 40

Liu, Cathy Broadcom Inc.

Comment Type **T** *Comment Status* **D** *ctrical) (bucket) C2C channel*

The figure 176C-2 has one mated connector illustrated as the C2C channel. The C2C channel could have no connector or up to one connector. The figure might misleading the readers to "must have one connector" for the C2C interconnect.

SuggestedRemedy

Add a note to clarify that the connector is optional.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2.6** *P* **364** *L* **53** # 48

Mellitz, Richard Samtec

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) TX SCMR*

SNDR(meas) replaced V_peak^2 with P_signal. SCMR should be aligned with SNDR(meas) (eq 179-9)

SuggestedRemedy

SNDR(meas) replaced V_peak^2 with P_signal. SCMR should be aligned with SNDR(meas) (eq 179-9)
Replace equation 178-1 with
SCMR= 10*log10(P_signal / VCM_FB^2)
In P365 line 4
Replace:
V_peak is defined in 179.9.4.1.2
With
P_signal is defined in equation 179-8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180A** *SC* **180A** *P* **850** *L* **4** # 51

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

Comment Type **ER** *Comment Status* **D** *(Optical) Annex title (bucket)*

The title of the Annex is incorrect. This annex only addresses MDIs for the DR family of optics.

SuggestedRemedy

Change title to "MDIs for 200GBASE-DR1, 400GBASE-DR2, 800GBASE-DR4, 1.6TBASE-DR8, 200GBASE-DR1-2, 400GBASE-DR2-2, 800GBASE-DR4-2, and 1.6TBASE-DR8-2

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The comment proposes to re-introduce the title from D1.4.

Comment #19 to D1.4 stated “The title of this annex is very long and not future-proof. Instead make title generic define the scope in a scope clause to limit to 3dj PHYs. Note that a similar approach is used in Annex 174A.” with suggested remedy “Change Annex title to: "MDIs for optical PHYs" Change the title of 180A.1 to "Scope". Add the following new subclause heading after the the first paragraph: "180A.2 Overview" encompassing the second paragraph and Table 180A-1.” The resolution to comment #19 was “Accept in principle”: Implement suggested remedy with editorial license.

The rationale provided in the comment #19 applies to this new comment.

Cl **178B** *SC* **178B.5.2** *P* **789** *L* **2** # 54

Jones, Chad Cisco Systems, Inc.

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Use of the word guarantee, in two places. This will likely be flagged during MEC. Staff review will likely recommend this replaced with "helps ensure".

SuggestedRemedy

change "guarantees" to "helps ensure" in two places on lines 2 and 3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.2.1** *P* **804** *L* **15** # 55

Jones, Chad — Cisco Systems, Inc.

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Use of the work avoid. This will likely be flagged during MEC. Staff review would likely recommend to replace with "help reduce".

SuggestedRemedy

change "avoid" to "help reduce".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.4.1** *P* **129** *L* **26** # 56

Jones, Chad — Cisco Systems, Inc.

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Use of "may".

SuggestedRemedy

replace "may be" with "are".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The comment does not provide justification for the suggested remedy.

The IEEE SA standards style manual states "The word may is used to indicate a course of action permissible within the limits of the standard (may equals is permitted to)".

The use of the word "may" in the text referred to in 73.4.1 "Multiple technologies may be advertised by the Auto-Negotiation process simultaneously" is appropriate because it is indicating that it is permitted to advertise multiple technologies simultaneously.

Cl **169** *SC* **169.2.9** *P* **190** *L* **25** # 57

Jones, Chad — Cisco Systems, Inc.

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Use of "may".

SuggestedRemedy

change "may optionally support" to "optionally supports"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174** *SC* **174.2.11** *P* **250** *L* **26** # 58

Jones, Chad — Cisco Systems, Inc.

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Use of "may".

SuggestedRemedy

change "may optionally support" to "optionally supports"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **119** *SC* **119.2.4.1** *P* **174** *L* **52** # 67

Bruckman, Leon — Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Missing dot

SuggestedRemedy

Add a dot at the end of the phrase (after "payload")

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.1.3** *P* **261** *L* **10** # 69

Bruckman, Leon — Nvidia

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

"FEC degrade detection and signaling" is an optional function (see 175.3), no need to list it here. It is not listed in similar sections in 802.3df (88GBASE-R PCS) or the base standard (200G/400GBASE-R PCS)

SuggestedRemedy

Either delete the bullet: FEC degrade detection and signaling
Or add: (optional) to the end of the text for this bullet

Proposed Response *Response Status* **W**

PROPOSED REJECT.
FEC degrade signaling is required. Only the FEC degrade detection is optional. The fact that FEC degrade detection is an optional feature or that it was missing from the overview list in CL 119 and CL 119 does not mean it should not be listed here. FEC degrade is a significant enough feature to warrent being listed in this summary of functions.

Cl **175** *SC* **175.2.1** *P* **263** *L* **10** # 70

Bruckman, Leon Nvidia

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

PMA is also a sublayer, and inner FEC shall be capitalized

SuggestedRemedy

Change: "PMA or inner FEC sublayer" to: "PMA or Inner FEC sublayers"
And in line 13 change: "inner FEC" to "Inner FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The PCS communicates with either a PMA sublayer or an Inner FEC sublayer (not both at the same time); therefore, the singular "sublayer" is correct. The context is:
"When communicating with the PMA or inner FEC sublayer, the 1.6TBASE-R PCS uses..."
When referring to the Inner FEC sublayer, the "I" should indeed be capitalized.
Change instances of "inner FEC" to "Inner FEC" throughout the draft when referencing an Inner FEC sublayer.
Implement with editorial license.
[Editor's note: CC: 45, 175, 184]

Cl **175** *SC* **175.2.5.3** *P* **273** *L* **50** # 71

Bruckman, Leon Nvidia

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

There may be undetected errors

SuggestedRemedy

Change: "errors that were not corrected"
to: "errors that were detected but not corrected"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.2.6.2.2** *P* **276** *L* **20** # 72

Bruckman, Leon Nvidia

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

The behavior of hi_ser is specified in 175.2.5.3. No need to detail it in the variables definitions.

SuggestedRemedy

Change the definition of hi_ser to: "Boolean variable that is set to true if hi_ser is asserted (see 172.2.5.3). Otherwise, this variable is set to false."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The suggested remedy is a circular definition using "hi_ser" to define "hi_ser". This could be changed to something like "Boolean variable that is asserted as defined in 175.2.5.3"; however, the definition is correct as written and is worded almost exactly the same as the definition of hi_ser in 119.2.6.2 - it only removes the MDIO mapping description - so that the reader can quickly see that it behaves the same as in the 200G/400G PCS. In addition, 175.2.5.3 does not actually have this definition, but only has a cross-reference to 119.2.5.3 where hi_ser is described in the text, so it is much more convenient for the reader to have this succinct definition immediately available instead of needing to track through multiple cross-references.

Cl **175** *SC* **175.2.6.2.4** *P* **277** *L* **17** # 73

Bruckman, Leon Nvidia

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

The text of the definition of this counter is different from the one in 119.2.6.2.4

SuggestedRemedy

Change the definition of amp_counter to: "This counter counts the interval of 32768 FEC codewords containing normal alignment marker payload sequences."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This counter definition is indeed worded slightly differently from the counter of the same name in 119.2.6.4. However, it matches the wording of the same counter in 172.2.6.2.4. This was discussed at length and the wording was carefully refined during the comment resolution of the 802.3df standard. See comment #I-80 in <https://www.ieee802.org/3/df/comments/D3p0/8023df_D3p0_comments_final_clause.pdf>. Therefore, no change should be made.

Cl **176** *SC* **176.1.4** *P* **290** *L* **35** # 74

Bruckman, Leon Nvidia

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

Not all functions are required in all cases described in this clause, but specific restrictions are only indicated for: Delay alternating PCSLs by two RS-FEC codewords

SuggestedRemedy

If this is a list of general function that are not necessarily needed in all cases then delete: "for 200GBASE-R and 400GBASE-R PMAs".
If it is a full list with restrictions then indicate for which cases each function is used according to the relevant sections.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The intent is to list the general functions used by the SM PMAs. The two RS-FEC codeword delay is specific to the 200GBASE-R and 400GBASE-R PMAs to achieve four-way RS-FEC codeword interleaving and is called out for that reason. The other primary functions are used by all SM PMAs when required.

Cl **176** *SC* **176.1.5** *P* **291** *L* **23** # 75

Bruckman, Leon Nvidia

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

In tables 176-1 and 176-2 no need for a foot note to limit the xAUI-m to a single value.

SuggestedRemedy

In tables 176-1 and 176-2 change: xAUI-m instances that are tagged with the footnote "a" to 1.6TAUI-16 and remove footnote

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The tables 176-1 and 176-2 support all four rates using variable "x". If 1.6TAUI-16 is inserted into the tables as in the suggested remedy, it is only valid for the x=1.6T SM-PMAs. The suggested remedy does not improve the accuracy or clarity of the text.

Cl **176** *SC* **176.2** *P* **292** *L* **51** # 76

Bruckman, Leon Nvidia

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

Inconsistent naming with the paragraphs above. See similar paragraph in section 176.3 (page 294 line 8)

SuggestedRemedy

Change: "from the sublayer above the PMA" to: "from the client sublayer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.3** *P* **294** *L* **12** # 77

Bruckman, Leon Nvidia

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

It is not clear which SIGNAL_OK is being considered. In the similar paragraph of section 176.2 the description is more deltailed.

SuggestedRemedy

Change: "the received SIGNAL_OK value."
to: "the received SIGNAL_OK parameter from the sublayer above the PMA (PMA:IS_SIGNAL.request(SIGNAL_OK))."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.4.1** *P* **296** *L* **8** # 78

Bruckman, Leon Nvidia

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

Missing arrowhead

SuggestedRemedy

Add the arrowhead to the input to the PAM4 decode process

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.4.2.3.1** *P* **298** *L* **3** # 79

Bruckman, Leon Nvidia

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

The same information is provided in the text and in the eqautions below

SuggestedRemedy

Delete: "For the 200GBASE-R 8:1 PMA, it equals N × 272 RS-FEC symbols, and for the 400GBASE-R 16:2 PMA, it equals N × 136 RS-FEC symbols, where N is an integer."
After the bullets add this text: "where N is an integer."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The draft is correct as written. The suggested remedy does not improve the accuracy or clarity of the text.

Cl **176** *SC* **176.4.3.2** *P* **305** *L* **16** # 80

Bruckman, Leon Nvidia

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

In the receive function there are processes not steps

SuggestedRemedy

Change: "to the next steps" to: "to the next steps processes"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change from "to the next steps in the receive function flow" to "to the next process in the receive function".

Cl **176** *SC* **176.7.2** *P* **316** *L* **28** # 81

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Missing word

SuggestedRemedy

Change: "When local loopback mode enabled" to: "When local loopback mode is enabled"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.1.3** *P* **326** *L* **7** # 82

Bruckman, Leon Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The convolutial interleaver is "a convolutional interleaver"

SuggestedRemedy

Change: "using the convolutional interleaver" to: "using a convolutional interleaver"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.2** *P* **328** *L* **21** # 83

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Different lenguage used in adjacent paragraphs. In the first paragraph: ", the tx_symbol parameters are undefined." and in the next paragraph: "the corresponding rx_symbol parameters on all lanes are unspecified.

SuggestedRemedy

Use similar lenguage in both paragraphs.
Make same change in the two last paragraphs of 177.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Use the same language as rx side.

Cl **177** *SC* **177.4.2** *P* **331** *L* **30** # 84

Bruckman, Leon Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Missing word

SuggestedRemedy

Change: "The data from deskewed PMA lane" to: "The data from a deskewed PMA lane"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #184.

Cl **177** *SC* **177.4.7.3** *P* **336** *L* **4** # 85

Bruckman, Leon Nvidia

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

The bit pair interleaving function for the pad field is not described.

SuggestedRemedy

Add section decribing the bit-pair interleaving fucntion shown in figure 177-8. Something in the lines of: "After Inner FEC encoding, the eight pad flows of Inner FEC codewords shall be multiplexed together as decribed in 177.4.6".
Also refer to comment against the figures in Clause 177 vs the ones in Annex 177A regarding the pad insertion function liocation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add subclause 177.4.7.4, describing the bit-pair interleaving as "The 8 pad codewords are multiplexed together as described in 177.4.6"

Cl **177** *SC* **177.5.2** *P* **337** *L* **9** # 86

Bruckman, Leon Nvidia

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

The pad field is not used to frame the data stream in the state diagram shown in Figure 177-10.

SuggestedRemedy

Change: "The eight codewords inserted as pad (see 177.4.7) are used to frame the data stream and are then removed before the received data is processed further."
To: "The eight codewords inserted as pad (see 177.4.7) are then identified and removed before the received data is processed further."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.5.5** *P* **339** *L* **11** # 87

Bruckman, Leon Nvidia

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

There is no mention regarding when are the 8 parity bits removed

SuggestedRemedy

Add to the end of the section: "Parity bits are then removed from each Inner FEC codeword"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.5.8** *P* **339** *L* **26** # 88

Bruckman, Leon Nvidia

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

The convolutional interleaver function is not trivial. Needs a more detailed description

SuggestedRemedy

Add a figure that describes the convolutional deinterleaver (refer to 184.5.8)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add figure to illustrate the convolutional deinterleaving process.

Cl **177** *SC* **177.6.1.1** *P* **339** *L* **44** # 89

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Missing "the"

SuggestedRemedy

Change: "is processed by Inner FEC sublayer" to: "is processed by the Inner FEC sublayer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.6.2.3** *P* **340** *L* **41** # 90

Bruckman, Leon Nvidia

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

This checker is not shown in Figure 177-2.

SuggestedRemedy

Add the PRBS31 encoded by Inner FEC test pattern checker location in Figure 177-2.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
By the definition of 177.6.2.3, this checker is not part of 177. It is in the PMA above the Inner FEC.

Cl **178** *SC* **178.1** *P* **357** *L* **1** # 91

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

Table 178-4 footnotes are in the next page

SuggestedRemedy

Make sure the footnotes of Table 178-4 are in the same page with their correspondent table.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The placement of tables and footnotes may change in future drafts due to various edits.
The publication editor will address such changes for the final version.

Cl **183** *SC* **183.1** *P* **505** *L* **48** # 93

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Optical) (bucket)*

Wrong singular in note c

SuggestedRemedy

In note c change: "If one or two 800GAUI-n is implemented"
To: "If one or two 800GAUI-n are implemented"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.5.8** *P* **544** *L* **12** # 94

Bruckman, Leon Nvidia

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

This section describes the deinterleaver, not the interleaver

SuggestedRemedy

Change: "the convolutional interleaver process" to: "the convolutional deinterleaver process"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185** *SC* **185.1** *P* **556** *L* **45** # 95

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Optical) (bucket)*

Wrong singular in note c

SuggestedRemedy

In note c change: "If one or two 800GAUI-n is implemented"
To: "If one or two 800GAUI-n are implemented"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185** *SC* **185.6** *P* **563** *L* **51** # 96

Bruckman, Leon Nvidia

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

An 800GBASE-LR1 PMD that supports 10Km is obviously complaint sinc ethis is the requirement

SuggestedRemedy

Change: "could operate over 10 km would meet the operating range requirement of 2 m to 10 km"
To: "could operate over 12 km would meet the operating range requirement of 2 m to 10 km"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.5.9** *P* **589** *L* **2** # 99

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Text in this paragraph can be improved

SuggestedRemedy

Change: "the test pattern is generated using the clock for the 800GBASE-ER1 tributary frame"
To "the test pattern is generated using the same clock as the one used to generate the 800GBASE-ER1 tributary frame"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the text to read "... the test pattern and 800GBASE-ER1 tributary frame are generated from the same clock"

Cl **186** *SC* **186.2.3.5.10** *P* **589** *L* **10** # 100

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Missing "the"

SuggestedRemedy

Change: "by 800GBASE-ER1 FEC" to "by the 800GBASE-ER1 FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.4.6.1** *P* **595** *L* **40** # 101

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Strange character

SuggestedRemedy

Change: "multi0frame" to "multi-frame"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.4.9.3** *P* **597** *L* **32** # 102

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Inconsistent lenguage

SuggestedRemedy

Change: "If the alignment marker location feature is supported (FEC_alignment_marker_location_ability is set to 1) and is enabled by the FEC control variable FEC_alignment_marker_location_enable (set to 1),"
To: "If the alignment marker location feature is supported (FEC_alignment_marker_location_ability is set to 1) and is enabled (FEC control variable FEC_alignment_marker_location_enable is set to 1),"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the text to read "If the alignment market location function is supported (FEC_alignment_marker_location_ability is set to 1) and is enabled (FEC_alignment_marker_location_enable is set to 1)"

Cl **187** *SC* **187.5.1** *P* **634** *L* **31** # 103

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Optical) (bucket)*

Text can be improved to be consistent with other similar PMD clauses

SuggestedRemedy

Change: "A block diagram for the transmit/receive paths is shown in Figure 187–3 and a block diagram of the PMD is shown in Figure 187–4." to "Thetransmit/receive paths block diagram is shown in Figure 187–3 and the PMD block diagram is shown in Figure 187–4."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change
"A block diagram for the transmit/receive paths is shown in Figure 187–3 and a block diagram of the PMD is shown in Figure 187–4."
to
"A block diagram for the PMD transmit/receive paths is shown in Figure 187–3 and a block diagram of the PMD is shown in Figure 187–4."

Cl **187** *SC* **187.6** *P* **637** *L* **54** # 104

Bruckman, Leon Nvidia

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

An 800GBASE-ER1 PMD that supports 40Km is obviously complaint sinc ethis is the requirement

SuggestedRemedy

Change: "could operate over 40 km would meet the operating range requirement of 2 m to 40 km"
To: "could operate over 45 km would meet the operating range requirement of 2 m to 40 km"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.3** *P* **677** *L* **44** # 105

Bruckman, Leon Nvidia

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

The note regarding FLR is repeated several times

SuggestedRemedy

Remove the notes regarding the FLR not being normative for any sublayer. Add a general sentence at the end of 74A.2 with the note's text.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Each note is specific to the path covered in the subclause. Using a common note elsewhere would not be as helpful. The notes in the current locations are more helpful. The proposed changes do not improve the clarity or accuracy of the draft.

Cl **174A** *SC* **174A.8.1.3** *P* **681** *L* **18** # 107

Bruckman, Leon Nvidia

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

In Hm(i)(k) it is not clear what m represents.

SuggestedRemedy

Define "m"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The "m" is implicitly defined in the words that follow "Hm (i)(k) is a set of p *measured* 17-bin histograms". In other words, the "m" denotes measured. Note that the subscript m non-italic is a qualifier, not a variable.

Cl **174A** *SC* **174A.9** *P* **683** *L* **17** # 108

Bruckman, Leon Nvidia

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

This section is not about 200GBASE-LR1

SuggestedRemedy

Change: "200GBASE-LR1" to "800GBASE-LR1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176C** *SC* **176C.6.3.1** *P* **724** *L* **35** # 109

Bruckman, Leon Nvidia

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

There is no Type E defined in Annex 178B

SuggestedRemedy

Change: "Type E"
to: "Type E1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.3** *P* **786** *L* **41** # 113

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *ımon) ILT definitions (bucket)*

The second sentence might be too short and risks causing confusion.

SuggestedRemedy

Replace "For a PMD this term is equivalent to link partner"

with

"In the case where the ISL is an MDI between two PMDs, this term is equivalent to link partner".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "For a PMD this term is equivalent to link partner."
To: "In the case where the ISL is between two PMDs, this term is equivalent to link partner"
Implement with editorial license.

Cl **178B** *SC* **178B.4** *P* **786** *L* **52** # 114

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

It is unclear if "former" and "latter" refer to "one or two instantiated interfaces" or to "PMD or AUI components" in the next statements. Suggest removing text to improve clarity.

SuggestedRemedy

Delete "[…] specifically PMD or AUI components" from sentence.

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.5.1** *P* **788** *L* **13** # 117

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Improve clarity.

SuggestedRemedy

Replace "Local variables are sent to the peer interface via the training frames. Remote variables are received from the peer interface"

with

"Peer interfaces send local variables and receive remote variables via the training frames".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "Local variables are sent to the peer interface via the training frames. Remote variables are received from the peer interface."
To: "Local variables are sent to the peer interface and remote variables are received from the peer interface via the training frames."
Implement with editorial license.

Cl **178B** *SC* **178B.5.3** *P* **789** *L* **47** # 119

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Subclause 178B.3 defines Path as the series of all ISLs between the two PCSs (or XSs), so use of "PCS to PCS path" or "main path" may cause confusion (as it suggests something different). I was thinking about suggesting a rename of "Path" to "ILT Path" to emphasize the end-to-end scope. Not sure if that is any better.

SuggestedRemedy

Replace "PCS to PCS path" and "main path" with "path".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "AUI components within an xMII Extender may train before or in parallel with the PCS to PCS path, and training signaling will continue until the main path is ready. This is the same behavior as AUI components within a PHY."
To: "AUI components within an xMII Extender have the same behavior as AUI components within a PHY."
Implement with editorial license.

Cl **178B** *SC* **178B.8.5** *P* **799** *L* **1** # 120

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Consistently use "1" for boolean true and "0" for boolean false.

SuggestedRemedy

Replace "[…] and is not set to one" with "and is not set to 1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.13** *P* **802** *L* **47** # 122

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Consistently use "1" for boolean true and "0" for boolean false.

SuggestedRemedy

Replace "[…] transmitted training frames is set to one" with "transmitted training frames is set to 1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.3** *P* **786** *L* **25** # 124

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

You define terms in this subclause but named the subclause "Conventions". Why not be consistent with 802.3-2022 and rename it "Definitions"?

SuggestedRemedy

Rename subclause "Definitions".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.2.1** *P* **804** *L* **15** # 125

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Could be clearer.

SuggestedRemedy

Replace NOTE with the following text, "There is no specified time limit for ILT to complete. ILT should be restarted if there is an indication of an unrecoverable fault or a livelock situation. The definition of unrecoverable fault is beyond the scope of this annex".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Although the comment set the comment type to "E", the suggested remedy is a technical change.
Although the intent of the comment was an editorial change to the text within the note for clarification, the suggested remedy changes the meaning and intent of the note.

Cl **178B** *SC* **178B.14.2.1** *P* **804** *L* **27** # 127

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Clarify "device".

SuggestedRemedy

Replace "Boolean variable that controls the resetting of the device" with "Boolean variable that controls the global resetting of the ILT per-interface state machines".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.3** *P* **805** *L* **51** # 128

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Missing "state machines".

SuggestedRemedy

Replace "An AUI component or PMD implements one instance of each of the Training control and the Training frame lock, and their associated variables[…]" with "An AUI component or PMD implements one instance of each of the Training control and the Training frame lock state machines, and their associated variables[...].

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "one instance of each of the Training control and the Training frame lock, and their associated variables"
To: "one instance of each of the Training control and the Training frame lock state diagrams, and their associated variables"

Cl **178B** *SC* **178B.14.3** *P* **806** *L* **1** # 129

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Replace instances of "state diagram" with "state machine".

SuggestedRemedy

Replace "E1 interfaces also implement one instance of the Coefficient update state diagram and its associated variables and functions independently for each of the n physical lanes. For O1 interfaces, this diagram and its associated variables and functions are not used" with "E1 interfaces also implement one instance of the Coefficient update state machine and its associated variables and functions independently for each of the n physical lanes. For O1 interfaces, this state machine and its associated variables and functions are not used".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The term used in the IEEE 802.3 standards is "state diagram".

Cl **178B** *SC* **178B.16.1** *P* **815** *L* **7** # 131

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Include complete title of annex. Forgot "optical".

SuggestedRemedy

Replace first sentence with, "The supplier of a protocol implementation that is claimed to conform to Annex 178B, Inter-sublayer link
training for electrical and optical interfaces, shall complete the following protocol implementation conformance statement (PICS) proforma".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy and also change the sublcause title to: "Protocol implementation conformance statement (PICS) proforma for Annex 178B, Inter-sublayer link training for electrical and optical interfaces"

Cl **178B** *SC* **178B.16.2.2** *P* **815** *L* **36** # 132

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Include complete title of annex. Forgot "optical".

SuggestedRemedy

Replace with "IEEE Std 802.3dj-202x, Annex 178B, Inter-sublayer link training for electrical and optical interfaces".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.16.3** *P* **816** *L* **18** # 133

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Syntax error.

SuggestedRemedy

Replace "O<1>" with "O.1" per C21. Apply change to IL7 through IL10, and IL12 through IL16.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.8.3** *P* **444** *L* **47** # 134

Parsons, Earl CommScope

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

The phrase "option to connect to a single fiber MDI" is incorrect since there are two fibers in that MDI.

SuggestedRemedy

Change "For 200GBASE-DR1, besides the option to connect to a single fiber MDI, there are two additional specified MDI optical receptacles, a single-row 12-fiber interface and a single-row 16 fiber interface."

to

"For 200GBASE-DR1, besides the option to connect to an MDI with two fibers, there are two additional specified MDI optical receptacles, a single-row 12-fiber interface and a single-row 16 fiber interface."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **182** *SC* **182.8.3** *P* **494** *L* **52** # 135

Parsons, Earl CommScope

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

The phrase "option to connect to a single fiber MDI" is incorrect since there are two fibers in that MDI.

SuggestedRemedy

Change "For 200GBASE-DR1, besides the option to connect to a single fiber MDI, there are two additional specified MDI optical receptacles, a single-row 12-fiber interface and a single-row 16 fiber interface."

to

"For 200GBASE-DR1, besides the option to connect to an MDI with two fibers, there are two additional specified MDI optical receptacles, a single-row 12-fiber interface and a single-row 16 fiber interface."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** *SC* **176D.7.2** *P* **749** *L* **51** # 140

Hidaka, Yasuo Credo Semiconductor, Inc.

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

tau^(h) value of 5.97x10^(-3) in Table 176D-6 seems a typo of 5.79x10^(-3). It is 5.79x10^(-3) in Table 179-16 and lim_3dj_01a_2409, slide 2.

SuggestedRemedy

Change 5.97x10^(-3) to 5.79x10^(-3).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** *SC* **176D.6.6** *P* **747** *L* **35** # 141

Hidaka, Yasuo Credo Semiconductor, Inc.

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

Module input specification should refer to TP1, not TP1a.

SuggestedRemedy

Change TP1a to TP1 in the caption of Table 176D-5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** *SC* **176D.8.2** *P* **752** *L* **29** # 142

Hidaka, Yasuo — Credo Semiconductor, Inc.

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

ERL definition in 93A.5 needs a parameter M that is not defined in Table 176D-8, because M is not used in COM definition in Annex 178A.

SuggestedRemedy

Add M to Annex 178A in the same way as Annex 93A and to all related tables that refer Annex 178A.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Annex 178A does not refer to 93A.5, so it does not need a value for M.
M should be provided by a clause that invokes 93A.5, along with all other parameters. In previous clauses M was part of the COM parameter tables (with value 32), but in this project it is not. Therefore, it needs to be added, preferably as an ERL parameter.

Add a row for "Number of samples per unit interval", M, with value 32, in the following tables:
Clause 178: Table 178–7, Table 178–8, Table 178–14
Clause 179: Table 179–9, Table 179–14
Annex 176C: Table 176C–3, Table 176C–9
Annex 176D: Table 176D–8
Annex 179B: Table 179B–1
[CC 178, 179, 176C, 176D, 179B]

Cl **181** *SC* **181.7.3** *P* **465** *L* **45** # 143

Lambert, Angela — Corning

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

Cabled fiber attenuation and fiber attenuation are different. As noted at the footnote of other link power budget tables (i.e. Table 180-9 on p. 441 and Table 182-9 on p. 491) and in the respective Optical fiber and cable characteristics tables (in this case, Table 181-9 on page 467), this should be "Cabled optical fiber attenuation"

SuggestedRemedy

Change "fiber attenuation" to "cabled optical fiber attenuation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **183** *SC* **183.7.3** *P* **515** *L* **44** # 144

Lambert, Angela — Corning

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

Cabled fiber attenuation and fiber attenuation are different. As noted at the footnote of other link power budget tables (i.e. Table 180-9 on p. 441 and Table 182-9 on p. 491) and in the respective Optical fiber and cable characteristics tables (in this case, Table 183-10 on page 518), this should be "Cabled optical fiber attenuation"

SuggestedRemedy

Change "fiber attenuation" to "cabled optical fiber attenuation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.3** *P* **53** *L* **54** # 145

Huber, Thomas — Nokia

Comment Type **E** *Comment Status* **D** *non) (bucket) MDI references*

This footnote indicates where to find SFP-DD224, QSFP224, and QSFP-DD1600 specifications, but the normative reference associated with this footnote is "QSFP-DD/QSFPDD-800/QSFP-DD1600 Hardware Specification for QSFP Double Density 8x Pluggable Transceivers", which makes no mention of SFP224 or QSFP224, and following the URL in the footnote does not take the reader to a site with documents that have information about SFP-DD224 or QSFP224 formats (nor does the normatively referenced document have that information).

SuggestedRemedy

Align the footnote with the referenced document by replacing "SFP-DD224, QSP224" with "QSFP-DD, QSFP-DD800"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment identifies incorrect references to the MDI connector types defined in Annex 179C. The suggested remedy introduces new MDI connector types (QSFP-DD and QSFP-DD800) that are not explicitly reqiured for this document. The footnote should be updated to capture the MDI connector types necessary for this document and that are included in the appropriate reference material.
Resolve using response for Comment #436.

Cl **30** *SC* **30.3.2.1.2** *P* **61** *L* **11** # 146

Huber, Thomas Nokia

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

There is no longer an 800GBASE-ER1 PCS; ER1 and ER1-20 PHYs use the 800GBASE-R PCS.

SuggestedRemedy

Delete the instruction and text to insert 800GBASE-ER1 after 400GBASE-R

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **61** *L* **31** # 147

Huber, Thomas Nokia

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

There is no longer an 800GBASE-ER1 PCS; ER1 and ER1-20 PHYs use the 800GBASE-R PCS.

SuggestedRemedy

Delete the instruction and text to insert 800GBASE-ER1 after 400GBASE-R

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **62** *L* **27** # 148

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

200GBASE-DR1-2 should be inserted before 200GBASE-DR4 and after 200GBASE-DR1 rather than after 200GBASE-ER4

SuggestedRemedy

Delete the editing istruction that is related to the insertion of 200GBASE-DR1-2. Modify the previous editing instruction to say "Insert the following new entries… before the esntry for 200GBASE-DR4, and remove the space so 200GBASE-DR1 and 200GBASE-DR1-2 are both inserted by the same instruction.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **63** *L* **36** # 149

Huber, Thomas Nokia

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

There is no longer an 800GBASE-ER1 PCS; the ER1 and ER-20 PHYs use the 800GBASE-R PCS. However they do have a unique PMA from other 800GBASE-R PHYs.

SuggestedRemedy

Change the description of 800GBASE-ER1 and 800GBASE-ER1-20 so they begin with "800GBASE-R PCS and 800GBASE-ER1 PMA over single-mode fiber PMD with a reach…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **63** *L* **47** # 150

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

An instruction to insert before 800GBASE-KR8 is the same thing as an instruction to insert after 800GBASE-DR8-2, since they are currently adjacent to each other (and no other task force is adding 800G PHYs). This instruction can be combined with the previous one.

SuggestedRemedy

Delete the editing instruction "Insert the following new entry intro the "APPRROPRIATE SYNTAX" section of 30.5.1.1.2 before the entry for 800GBASE-KR8 (inserted by IEEE Std 802.3df-2024)", and remove the space so that the text for 800GBASE-KR4 is part of the prior instruction.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.13.1.1** *P* **65** *L* **16** # 151

Huber, Thomas Nokia

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

The same mgmt registers/attributes are used for ER1 FEC as are used for Inner FEC, but the text here doesn't mention ER1 FEC.

SuggestedRemedy

Change "If a Clause 45 MDIO Interface to PMA/PMD, Inner Fec, WIS, …"
to
"If a Clause 45 MDIO Interface to PMA/PMD, Inner FEC or ER1 FEC, WIS, …"

Change the second bullet from "For Inner FEC:…" to "For Inner FEC or ER1 FEC:…"

Make the same changes to 30.13.1.2 through 30.13.1.12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **71** *L* **48** # 152

Huber, Thomas Nokia

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

The TimeSync Inner FEC transmit and receive registers are also used for ER1 FEC.

SuggestedRemedy

Change "Time Sync inner FEC …" to "TimeSync inner FEC or ER1 FEC…."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **72** *L* **27** # 153

Huber, Thomas Nokia

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

Registers 1.2412 through 1.2423 are used for ER1 FEC as well as Inner FEC.

SuggestedRemedy

Change the "Inner FEC …" to "Inner FEC or ER1 FEC …" for each set of registers in the range.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.10** *P* **77** *L* **32** # 154

Huber, Thomas Nokia

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

The text of table 45-14 (not currently included in the document) should be updated to refer to the newly added additional extended ability registers for 200G and 400G PHYs

SuggestedRemedy

Bring in clause 45.2.1.10 and Table 45-14. Update description for a one value for bit 1.11.13 from:
"1 = PMA/PMD has 200G/400G extended abilities listed in register 1.23 or register 1.24"
to:
"1 = PMA/PMD has 200G/400G extended abilities listed in register 1.23 (200G) or registers 1.24 and 1.75 (400G)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.23** *P* **79** *L* **24** # 155

Huber, Thomas Nokia

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

The description for bit 1.25.1 should also identify the abilities in register 1.74.

SuggestedRemedy

Change "…. and has the abilities listed in register 1.73" to "… and has the abilities listed in registers 1.73 and 1.74"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.23** *P* **79** *L* **35** # 156

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The editing instruction to insert 45.2.1.23.aa should note that 45.2.1.23.a was inserted by 802.3df-2024

SuggestedRemedy

Change to say "Insert 45.2.1.23.aa before 45.2.1.23.a (as inserted by IEEE Std 802.3df-2024) as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.60e.3** *P* **84** *L* **16** # 157

Huber, Thomas Nokia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

This subclauses concerns 1.6TBASE-DR8, but the text refers to 1.6TBASE-DR2.

SuggestedRemedy

Change both instances of "1.6TBASE-DR2" in the text to "1.6TBASE-DR8".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.175** *P* **97** *L* **44** # 158

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The 'inner FEC' TimeSync registers are also used for ER1 FEC

SuggestedRemedy

Change "... PMA/PMD and inner FEC…" to "...PMA/PMD, inner FEC, and ER1 FEC…"

In table 45-139, change "inner FEC" to "inner FEC or ER1 FEC" in the Name and Description columns of rows 1.1800.7 through 1.1800.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.177a** *P* **99** *L* **5** # 159

Huber, Thomas Nokia

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

The 'inner FEC' TimeSync registers are also used for ER1 FEC

SuggestedRemedy

Change the title to "TimeSync FEC sublayer transmit path delay (Registers 1.1813 through 1.1818)"

Add a new first sentence to the first paragraph: "The TimeSync FEC sublayer transmit path data delay registers are used with Inner FEC sublayers and the ER1 FEC sublayer."

Change the rest of the existing text and table to replace 'inner FEC' with 'FEC sublayer'.

Make similar changes to 45.2.1.177b.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.8** *P* **119** *L* **23** # 160

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Per the style guide, when inserting new subclauses before the first existing subclause, the nomenclature is 'X.Y.Z.a' rather than 'X.Y.Za"

SuggestedRemedy

Change the editing instruction to say "Insert 45.2.3.8.a and 45.2.3.8.b before 45.2.3.8.1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.4.2** *P* **130** *L* **13** # 161

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

"An Auto-Negotiation able device shall recognize…" is awkward wording.

SuggestedRemedy

Change to "A device capable of Auto-Negotiation shall recognize…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **116** *SC* **116.1.4** *P* **149** *L* **34** # 162

Huber, Thomas Nokia

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

The clause numbers in Table 116-3a are incorrect and the columns are not in the right order. Auto-Negotiation is clause 73 rather than 116, and should be the left-most column. (the text was correct in the table inserted by 802.3ck, so the errors were introduced here in 802.3dj)

SuggestedRemedy

Change 116 to 73, and swap the order of the first two columns so 73 comes first.

Proposed Response *Response Status* **W**

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

Cl **116** *SC* **116.3.3.3.1** *P* **161** *L* **4** # 165

Huber, Thomas Nokia

Comment Type **ER** *Comment Status* **D** *(bucket) ILT service interface*

The text regarding the values of the SIGNAL_OK parameter is not sufficiently clear in a number of aspects. As the first paragraph states, IN_PROGRESS and READY are only supported if ILT is supported. The paragraphs about the OK and FAIL values refer to "if the service interface supports the values IN_PROGRESS and READY", which is needlessly complex wording; the condition is more succinctly expresed as "if ILT is supported", rather than if the states that ILT uses are supported. Further, since the meanings of OK and FAIL are different depending on whether ILT is used, instead of saying 'here are four values of SIGNAL_OK', and embedding in those definitions the details of whether ILT is used or not, it would be more clear to say 'SIGNAL_OK has these values if ILT is used, and these values if ILT is not used'.

SuggestedRemedy

Replace the second through fifth paragraphs with this text (text spills beyond the bottom of the cell):
If ILT is not used:
A value of OK indicates that communication with the next lower sublayer is established (but does not guarantee that valid data is being presented to the next higher sublayer).
A value of FAIL indicates that the sublayer has not established commuication to the next lower sublayer, and data is not being presented to the next higher sublayer (the rx_symbol parameters are undefined).
If ILT is used:
A value of OK indicates that valid data is being presented by the sublayer to the next higher sublayer in the rx_symbol parameters.
A value of READY indicates that commuication is established with the next lower sublayer, but communication with the peer interface is not fully established yet. The rx_symbol parameters presented to the next higher sublayer do not respresent traffic data and might be invalid. Management intervention is not required.
A value of IN_PROGRESS indicates that the sublayer is establishing communication with the next lower subalyer. Data is not being presented by the sublayer to the next higher sublayer (the rx_symbol parameters are unspecified). Management intervention.is not required.
A value of FAIL indicates that an attempt to communicate with the next lower sublayer has failed. Data is not being presented to the next higher sublayer (rx_symbol parameters are unspecified)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note that this comment is proposing to rearrange the text so that it is easier to parse. The proposed changes are an improvement to the clarity of the draft.

Some of the details, such as the context of ILT, might be affected by resolution of other D2.0 comments.

Implement the suggested remedy with editorial license with consideration of other related comments.

Cl **169** *SC* **169.3.2** *P* **191** *L* **17** # 168

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

While the ER1 FEC is an example of a segmented FEC, that term isn't being used elsewhere in the text, so probably better to call it the ER1 FEC here.

SuggestedRemedy

Change "Segmented FEC" to "ER1 FEC":

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Subclause 169.2.4b defines generically the FEC sublayer which is inclusive of all of these and perhaps others to be added in future amendments.
Change "Inner FEC or Segmented FEC" to "FEC sublayer (see 169.2.4b)".

Cl **169** *SC* **169.5** *P* **198** *L* **14** # 169

Huber, Thomas Nokia

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

In Figures 169-4 and 169-5, it needs to be more clear that "Inner FEC" can also be the ER1 FEC.

SuggestedRemedy

Replace "Inner FEC" in both figures with "Inner FEC or ER1 FEC".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Neither sublayer stack in Figure 169-4 is representative of PHY types that include the FEC sublayer defined in Clause 184 or Clause 186.
The right-hand sublayer stack is quite specific to the Inner FEC defined in Clause 177 in that the PMA is n:4, whereas the PMA above the Clause 184 and Clause 186 FEC sublayers is n:32.
Update the figure to be inclusive of PHY types using the FEC sublayer defined in Clause 184 and Clause 186.

Cl **169** *SC* **169.8** *P* **201** *L* **48** # 170

Huber, Thomas Nokia

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

Subclause 169.8 (PICS summary) needs to be updated to refer to new PMD clauses added by 802.3dj.

SuggestedRemedy

Bring in clause 169.8

Add this editing instruction:
Change the first paragraph of subclause 169.8 (as added by IEEE Std 802.3df-2024) as follows

Copy in the first paragraph of the existing 169.8, and change "Clause 170 through Clause 173" to "Clause 170 through Clause 173 or Clause 176 through Clause 187:"

Proposed Response *Response Status* **W**

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

Cl **172** *SC* **172.2.5.2** *P* **242** *L* **9** # 171

Huber, Thomas Nokia

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

The text here was modified from "PMA service interface lanes" to "service interface lanes", since the sublayer below the PCS may be a FEC or a PMA. But just saying "service interface lanes" is not sufficiently clear that it is the service interface from the next lower layer.

SuggestedRemedy

Change the first sentence to read:
"The PCS lanes might be received in any order from the service interface below the PCS."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.6** *P* **242** *L* **36** # 172

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The PMDs for which AN is mandatory are already explained in the tables in clause 169, so there is no need to repeat all of them here. At the same time, it is maybe useful to at least note that the requirements apply to CRn and KRn PMDs.

SuggestedRemedy

Replace "800GBASE-CR8, 800GBASE-CR4, 800GBASE-KR8, or 800GBASE-KR4 PMD" with "800GBASE-CRn or 800GBASE-KRn PMD"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text is accurate as written and consistent with what was done in previous drafts and similar clauses (e.g. Clause 119). Changing CR8/CR4 to CRn , etc., does not improve the readability of the draft.

Cl **172** *SC* **172.7.4.7** *P* **243** *L* **17** # 173

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Easier to say CRn/KRn rather than enumerate all the CRn and KRn PMDs in the PICS

SuggestedRemedy

Replace "800GBASE-CR8, 800GBASE-CR4, 800GBASE-KR8, or 800GBASE-KR4 PMD" with "800GBASE-CRn or 800GBASE-KRn PMD"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text is accurate as written and consistent with what has been done in previous drafts and similar clauses (e.g. Clause 119). Changing CR8/CR4 to CRn , etc., does not improve the readability of the draft.

Cl **173** *SC* **173.4.2** *P* **244** *L* **46** # 174

Huber, Thomas Nokia

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

If a conversion from BM to SM PMA is needed, the 8:32 PMA could also connect to a 32:4 PMA (e.g., an 800GBASE-LR4 module that has an 800GAUI-8 host-side interface would need to do this since the optical interface requires the clause 177 inner FEC - so the stack would be 800GBASE-R PCS, 32:8 PMA, [800GAUI-8], 8:32 PMA, 32:4 PMA, 800GBASE-R Inner FEC, 800GBASE-LR4 PMD).

SuggestedRemedy

Add "32:4 SM-PMA, " after PHY 800GXS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add "800GBASE-R 32:4 SM-PMA" to the list.
Implement with editorial license.

Cl **173** *SC* **173.4.2** *P* **245** *L* **36** # 175

Huber, Thomas Nokia

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

Figure 173-3 is missing the possibility that a 32:4 PMA could be connected. Also, the explanatory notes b and c seem unnecessary. It should be quite obvious to any reader that 'inst' is PHY_XS when the sublayer below the PMA is a PHY 800GXS and FEC when it is a FEC sublayer (or PMA when it is a PMA).

SuggestedRemedy

At the bottom of the figure, just under the 32 output lanes and 32 input lanes, add "or 32:4 PMA" after PHY 800GXS, and in the explanation of "inst", add "or PMA" after PHY_XS. Delete notes b and c and the references to them in the explanation of 'inst'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Update Fig 173-3 to add "800GBASE-R SM-PMA" to the list of sublayers below the PMA.
Update the footnotes below the figure as appropriate.
Implement with editorial license.

Cl **174** *SC* **174.1.4** *P* **248** *L* **30** # 176

Huber, Thomas Nokia

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

Table 174-3 is missing clause 73 Auto-Negotiation

SuggestedRemedy

Add a column for Clause 73 Auto-Negotiation and indicate it as Mandatory for both 1.6TBASE-KR8 and 1.6TBASE-CR8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174** *SC* **174.6** *P* **259** *L* **34** # 178

Huber, Thomas Nokia

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

Clause 182 is also relevant to 1.6TBASE-R.

SuggestedRemedy

Change "Clause 175 through Clause 180" to "Clause 175 through Clause 180 or Clause 182"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.4.2.4** *P* **298** *L* **37** # 179

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

In the second paragraph, the phrases that start with "which employ…" are not necessary to understand the sentence (they are additional explanatory information), so they should be separated by commas both before and after the phrases.

SuggestedRemedy

Add a comma after 800GBASE-R 32:4 PMAs and after 1.6TBASE-R 16:8 PMA, so it reads as follows:

This delay function is used by the 200GBASE-R 8:1, 400GBASE-R 16:2, and 800GBASE-R 32:4 PMAs, which employ symbol-pair multiplexing, but not by the 1.6TBASE-R 16:8 PMA, which employs symbol-quartet multiplexing.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The suggested remedy does not improve the accuracy or clarity of the text.

Cl **176** *SC* **176.4.2.4.2** *P* **300** *L* **29** # 180

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The first sentence has a list of two items separated with a comma rather than 'and'.

SuggestedRemedy

Change the sentence to read: This delay is performed for the 200GBASE-R 8:1 and 400GBASE-R 16:2 PMAs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.7.1.2** *P* **316** *L* **11** # 181

Huber, Thomas Nokia

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

If the precoder is configured either based on ILT (as in the penultimate paragraph) or is "set as required by the implementation" (as in the last paragraph), what is the purpose of having the set of "precoder_{tx|rx}_{in|out}_enable_i" variables to enable and disable it for each lane/direction? It doesn't sound like the user has any need to control these settings.

SuggestedRemedy

Either remove the variables entirely, or treat them as status variables that report the configuration if there is some value in the user knowing what the configuration is Or, if the intent in the case that ILT is not being used is that the user needs to figure out whether to enable the precoder on a per-lane basis, make that more clear.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #186
[Editor's note: CC: 176, 177]

Cl **177** *SC* **177.2** *P* **328** *L* **14** # 182

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

It would be better to not list the specific PMDs here and create a potential need to regularly update this text if new PHYs are added that use this inner FEC.

SuggestedRemedy

Replace "The number of parallel streams, n, is 1 for 200GBASE-DR1-2, 2 for 400GBASE-DR2-2, 4 for 800GBASE-DR4-2, 800GBASE-FR4, and 800GBASE-LR4, and 8 for 1.6TBASE-DR8-2."
with
"The number of parallel streams, n, is 1 for 200GBASE-R PHYs, 2 for 400GBASE-R PHYs, 4 for 800GBASE-R PHYs, and 8 for 1.6TBASE-R PHYs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.3** *P* **328** *L* **45** # 183

Huber, Thomas Nokia

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

Clause 182 is not the only PMD that is used with this inner FEC, so the service interface below the Inner FEC is not limited to the PMD service interface in 182.3. It could also be the interface in 183.3. Rather than enumerating all the clauses (which would create a potential need to regularly update the clause), a more generic statement can be used.

SuggestedRemedy

Change "the PMD service interface defined in 182.3" to "the PMD service interface for the PHY".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.4.2** *P* **331** *L* **29** # 184

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Awkward grammer in "The data from deskwed PMA lane is fed…"

SuggestedRemedy

Change to "Data from the deskwed PMA lane is fed…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"The data from deskewed PMA lane is fed…"
to:
"Data from the deskewed PMA lane is fed…"

Cl **177** *SC* **177.4.7** *P* **334** *L* **37** # 185

Huber, Thomas Nokia

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

Figure 177-7 is a bit confusing. The 1024-bit pad is the equivalent number of bits as "8x Inner FEC codewords", but of course is not that, it's padding bits as described by the text and subclauses under the figure. More generatlly, the use of "8x" in the figure is not appropriate, as there is no multiplication going on. In the text under the horizontal brace (8704 Inner FEC codewords), the intent is that there are 1088 blocks of 8 Inner FEC codewords (a total of 8704 codewords), but this could easily be misinterpreted by a careless reader as 8704 blocks of 8 Inner FEC codewords It would also be helpful to explicitly indicate 1088 blocks, as that would more clearly relate back to the text about the 1088/1089 ratio.

SuggestedRemedy

In the pad blocks, replace "8x Inner FEC codewords" with "1024 bits". In the other blocks, change "8x" to "8". In the text under the brace, add another line that says "(1088 blocks of 8 inner FEC codewords)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.4.8.2** *P* **336** *L* **15** # 186

Huber, Thomas Nokia

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

If the precoder is configured either based on ILT or is "set as required by the implementation", what is the purpose of having the set of "precoder_{tx|rx}_{in|out}_enable_i" variables to enable and disable it for each lane/direction? It doesn't sound like the user has any need to control these settings.

SuggestedRemedy

Either remove the variables entirely, or treat them as status variables that report the configuration if there is some value in the user knowing what the configuration is Or, if the intent in the case that ILT is not being used is that the user needs to figure out whether to enable the precoder, make that more clear.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

When training is disabled, the user needs to configure the precoder on both sides to the same value, depending on the implementation. The language used here is consistent with similar language in clause 120 and other clauses, and is intentionally vague to allow for a variety of implementation choices.

[Editor's note: CC: 176, 177]

Cl **177** *SC* **177.5.1** *P* **336** *L* **36** # 187

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The last sentence is a comma splice.

SuggestedRemedy

Change to read: "The hard-decision PAM4 decoding function…. in Figure 177.2. The soft-decision PAM4 decoding…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.5.2** *P* **337** *L* **20** # 188

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

"128b-bit blocks" has a stray b

SuggestedRemedy

Change to "128-bit blocls"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.8.3** *P* **444** *L* **47** # 194

Huber, Thomas Nokia

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

DR MDIs use pairs of fibers

SuggestedRemedy

Change "…besides the option to connect to a single fiber MDI, ..." to "…besides the option to connect to a single fiber-pair MDI, …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #134.

Cl **182** *SC* **182.8.3** *P* **494** *L* **52** # 197

Huber, Thomas Nokia

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

DRn-2 MDIs use pairs of fibers.

SuggestedRemedy

Change "...besides the option to connect to a single fiber MDI, ..." to "…besides the option to connect to a single fiber-pair MDI, …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #135.

Cl **184** *SC* **184.2** *P* **533** *L* **4** # 199

Huber, Thomas Nokia

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

It is misleading to present the reordering and deskew functions as optional. The lanes are required to be in the two flow groups (0-15 and 16-31) and deskewed to a 2-symbol boundary. In an implementation that happens to have the inner FEC immediatley next ot the PCS, this may not require any effort, because the PCS will have created the lanes in order and there won't be any skew to remove, but that doesn't make the process optional from a standardization perspective. There are always design optimizations that can be made that we don't spell out as optional functions.

SuggestedRemedy

Replace "If necessary, the lanes are reordered and deskewed" with "The lanes are reordered and deskewed."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.2** *P* **533** *L* **8** # 200

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Missing a hyphen in the compound adjective 'BCH(126, 110) encoded'

SuggestedRemedy

Change to "…interleaving the BCH(126,110)-encoded flows…"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Although the suggestion is grammatically "correct" adding the hyphen is rather odd looking. Also, equivalent phrases is used in this form is used extensively in this draft without the hyphen, e.g., "PAM4 encoded" (several), "PRBS31 encoded" (several), "FEC encoded" (172), "Reed-Solomon encoded" (175), "257-bit encoded" (186).

Cl **184** *SC* **184.2** *P* **533** *L* **18** # 201

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Awkward grammar : "Convolutional interleaving and permutation are undone to restore the original lanes order".

SuggestedRemedy

Reword as: "Convolutional interleaving and permutation are undone to restore the original order of the lanes".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.4.1** *P* **534** *L* **5** # 202

Huber, Thomas Nokia

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

It is required that the lanes be in the two flow groups and deskewed to a 2-symbol boundary. If the PCS and Inner FEC happen to be adjacent, a designer may be able to omit these functions, but that doesn't make them optional from a standardization perspective

SuggestedRemedy

Change "The alignment lock and deskew functions, when implemented, shall be…" to "The alignment lock and deskew functions shall be …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.4.3** *P* **535** *L* **2** # 203

Huber, Thomas Nokia

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

Figure 184-3 could be more clear. The labels "RS-FEC in" and "RS-FEC out" are really the values of the index i (mod 4). The permutation isn't doing anything with the symbols in flows 16-31 in columns 0 and 1; they stay where they are. It's the symbols in columns 2 and 3 that are changing to create symbol quartets with one symbol from each RS FEC encoder.

SuggestedRemedy

Replace the "RS-FEC in" and "RS-FEC out" labels with "Symbo index i mod 4". Change the left side of the figure to have one box around columns 2 and 3, rows 16-31, and a different style of box around columns 2 and 3, rows 0-15. Change the right hand side of the figure to show that the top and bottom boxes in clumns 2 and 3 from the left hand side have changed positions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Figure 184-3 is an example as indicated in the text above it. The labels are self explanatory, replacing them may create more confusion and adding "mod 4" is not necessary since this is one example.
Change the left side of the figure to have one box around columns 2 and 3, rows 16-31, and a different style of box around columns 2 and 3, rows 0-15. Change the right hand side of the figure to show that the top and bottom boxes in columns 2 and 3 from the left hand side have changed positions.

Cl **184** *SC* **184.4.5** *P* **537** *L* **7** # 204

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

m(x) should have the m in italics

SuggestedRemedy

Italicize the m

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.4.7** *P* **537** *L* **50** # 205

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Up until this point, the index q has been used for the 32 flows within the inner FEC. It is confusing to use q here as the index for the 4 output flows of the BCH interleaver.

SuggestedRemedy

Choose a different index for the 4 flows of intero[]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement with editorial license.

Cl **184** *SC* **184.4.7** *P* **537** *L* **51** # 206

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The index l should be avoided if at all possible, as it can be confused for the number 1.

SuggestedRemedy

Pick a different letter to use for this index.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.11.4.1** *P* **554** *L* **18** # 207

Huber, Thomas Nokia

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

The signal presented to the permutation function must have the properties that the lane grouping and deskew functions provide, so the functions are mandatory (even if some implementations may not need to perform these functions, they are not optional)..

SuggestedRemedy

Change the status of these items to M

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.1** *P* **582** *L* **4** # 209

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

In the second sentence, clarify "800GBASE-ER1 FEC" is referring to the sublayer rather than the ER1 FEC code.

SuggestedRemedy

Change "800GBASE-ER1 FEC" to "800GBASE-ER1 FEC sublayer". This should be applied throughout the subclause.

Proposed Response *Response Status* **W**

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

Cl **186** *SC* **186.2.1** *P* **582** *L* **19** # 210

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The "8 lanes" should not be called lanes since they are not an interface between two sublayers.

SuggestedRemedy

Change 8 lanes to "8 ER1 FEC flows" throughout the paragraph and in the last paragraph of this subclause This change also needs to be made in 186.2.3.2, 186.2.3.3, Figure 186-7, and perhaps other places

Proposed Response *Response Status* **W**

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

Cl **186** *SC* **186.2.1** *P* **582** *L* **23** # 211

Huber, Thomas Nokia

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

The interface between the FEC and PMA sublayers is FEC codewords, not symbols.

SuggestedRemedy

Delete "as a stream of symbols" from the end of the last sentence of the 3rd-to-last paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.1** *P* **582** *L* **30** # 212

Huber, Thomas Nokia

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

The interface between the FEC and PMA sublayers is FEC codewords, not digitized DP16QAM symbols.

SuggestedRemedy

Change the second clause of the second sentence from: "… the 800GBASE-ER1 FEC synchronization process accepts a stream of m-bit digitized DP-16QAM symbols via the PMA:IS_UNITDATA.indication primitive and forms a stream of ER1 FEC codewords"
to
"… the 800GBASE-ER1 FEC synchronization process accepts a stream of FEC codewords in the form of m-bit digitized bitstreams representing the four components of DP-16QAM symbols."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.2** *P* **582** *L* **47** # 213

Huber, Thomas Nokia

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

The text here says the UNITDATA parameter is a symbol, whereas 186.3.2 says it is FEC codewords

SuggestedRemedy

Since the PMA includes the Gray coding and symbol mapping processes, it makes more sense to describe the service interface to the PMA as FEC codewords. Change tx_symbol and rx_symbol to tx_codeword and rx_codeword, respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.4.1** *P* **586** *L* **28** # 215

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The AM field is defined in G.709.1, but the values used in it are in G.709.6 (as indicated in the normative text of this clause).

SuggestedRemedy

Change the note to say "Recommendation ITU_T G.709.1, Recommendation ITU-T G.709.6, and OIF-800ZR-01.0"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.4.1** *P* **586** *L* **34** # 216

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The EOH field is defined in G.709.1 rather than G.709.6

SuggestedRemedy

Change G.709.6 to G.709.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.5.5** *P* **588** *L* **14** # 217

Huber, Thomas Nokia

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

The non-zero values of MAP are bytes 6 and 7 of the first row, not 6 and 8

SuggestedRemedy

Change "byte 8" to "byte 7"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.3.2** *P* **599** *L* **40** # 219

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The clause describing the service interface has a large number of additional subheadings (one for each primitive, and within those, a 'semantics', 'when generated', and 'effect of receipt' subclause) compared to the FEC subclause, and compared to other service interface descriptions.in this amendment

SuggestedRemedy

Revise the clause to remove all the subheadings, most of which have only one or two sentences in them. Align the overall structure with what is in 186.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove level 4 and level 5 headings throughout subclause 186.3.2, and update the text that remains to align with the style of service interface specification for other PMA layers (e.g. ,173, 176).
Implement with editorial license.

Cl **178B** *SC* **178B.3** *P* **786** *L* **31** # 221

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

The definition of AUI component in Annex 178B uses the terms 'AUI upper component' and 'AUI bottom component', whlie related text in 45.2.1.269 uses 'upper AUI component' and 'lower AUI component'. The terms should be consistent between the two.

SuggestedRemedy

Upper and lower works better than upper and bottom. Change the definition in 178B.3 to use 'upper AUI component' and 'lower AUI component'.

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.4** *P* **786** *L* **52** # 223

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *ıon) ILT components (bucket)*

The second paragraph is confusing. The text begins with "Devices in a path may include one or two physically instantiated interfaces, specifically AUI or PMD components." However, an end-to-end path between two PCS could include as many as 5 ISLs: two AUIs in each Physical Layer implementation, plus the MDI between the PMDs.

SuggestedRemedy

If this paragraph was not present, the information in the rest of the clause is still clear. Delete the paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The first sentence is important, but it and the rest of the paragraph should be reworded to make it more understandable.

Replace the paragraph with the following:
"Devices in a path have one or two physically instantiated interfaces. A physically instantiated interface is either a PMD or an AUI component. An example of a device with one physically instantiated interface is a PMA adjacent to a PCS with a single AUI-C2M (Annex 176D) or AUI-C2C (Annex 176C) interface (the interface with the PCS or PHY XS is never physically instantiated). An example of a device with two physically instantiated interfaces is a retimer with an AUI-C2C (Annex 176C) interface on one side and an AUI-C2M (Annex 176D) on the other side."

Implement with editorial license.

Cl **178B** *SC* **178B.4** *P* **787** *L* **5** # 224

Huber, Thomas Nokia

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

While it's true that there are "one or more per-lane functions", this language is misleading. For an n lane interface there are exactly n per-lane functions.

SuggestedRemedy

Change "one or more per-lane functions" to "one per-lane function for each physical lane"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "and one or more per-lane functions"
To: "and one per-lane function for each lane associated with the interface"

Cl **178B** *SC* **178B.5.1** *P* **788** *L* **9** # 227

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *mon) ILT description (bucket)*

"Interface" is vague. I think this clause is about lanes in an ISL.

SuggestedRemedy

Replace "interface" with something more specific and clear. "ISL endpoint" and "ISL lane" could be used as appropriate throughout the clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Interface is never concisely defined in Annex 178B. A defining statement near the beginning would be helpful.

Add the following definition to "178B.3 Conventions"

"Interface
Unless qualified otherwise, a physically instatiated interface, either a PMD or AUI component."

Implement with editorial license.

Cl **178B** *SC* **178B.7** *P* **795** *L* **4** # 230

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

It would be better to combine tables 178B-2 and 178B-3 into a single table, with one column for the electrical interfaces and one for the optical interfaces. That would make it easier for the reader to see that the formats are the same, except that on optical links some of the fields are not used. The same applies to tables 178B-4 and 178B-5 in clause 178B.8

SuggestedRemedy

Change the table title to 'Control field structure for 200G/lane interfaces'
Change the heading of the 3rd column to "Electrical interfaces". Add a fourth column titled "Optical interfaces, and populate it with the information that is in Table 178B-3.
Delete Table 178B-3
Make corresponding changes in clause 178B.8 for tables 178B-4 and 178B-5.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The tables as written clearly show what is required for either the optical or electrical interface. There is potential that the function of some reserved bits may be assigned different functions and might be combined in different ways so a combined table would get messy. Currently only two types, E1 and O1, are defined, but others might be defined making the table more crowded and perhaps more diversive.

Cl **172** *SC* **172** *P* **236** *L* **0** # 240

Cox, Ian Broadcom

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The header on pages 236-243 reads P802.3df and not dj.

SuggestedRemedy

Change the header from 802.3df to 802.3dj

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.1** *P* **327** *L* **11** # 241

Gorshe, Steve — Microchip Technology

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The term "SIL" appears in this figure. It is defined in some figures as meaning "Signal Indication Logic" but not in this figure and others.

SuggestedRemedy

Since SIL is used in mutliple figures without consistent definition, I recommend adding SIL to the abbreviation list in clause 1.5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
[Editor's note: CC: 1, 177]

Cl **186** *SC* **186.2.3.5.10** *P* **590** *L* **14** # 242

Gorshe, Steve — Microchip Technology

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

Why are there 4 Stuff blocks at the beginning of the row 1 payload area in Figure 186-7? The GMP word size (granularity) in each 800GBASE-ER1 frame is one 257-bit block. As shown in Table 186-1, the first block of each 800GBASE-ER1 frame will be a GMP stuff word. Since each of the 8 lanes are mapped into their own 800GBASE-ER1 frame, and GMP mapping is performed per lane, there should be a single stuff block in the first row of Figure 186-7.

SuggestedRemedy

If this comment is correct, Figure 186-7 should be modified to begin the payload area with a single stuff block. If the four stuff blocks are correct, an explanation should be added to explain why.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment is correct.
Update the figure to show a single stuff block at the start of the multiframe

Cl **186** *SC* **186.2.3.8** *P* **591** *L* **52** # 264

Wang, Xuebo — Huawei

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

"OBFG84" should be changed to "OFBG84" as OFBG is the abbreviation of OFEC block group in ITU-T G709.6.

SuggestedRemedy

Change "OBFG84" to "OFBG84".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.4.1** *P* **594** *L* **9** # 265

Wang, Xuebo — Huawei

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

The number 344064 should be 172032. Each DP-16QAM symbol represents 8 bits, then 1376256 bits should correspond to 172032 DP-16QAM symbols.

SuggestedRemedy

Change "344064" to "172032".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.4** *P* **702** *L* **40** # 266

Wang, Xuebo Huawei

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

The current content of PMA instantiations seems to include interfaces with all possible data rates per lane. However, for 200 Gb/s and 400 Gb/s physical layer implementations in Annex 176B.4 and Annex 176B.5, some cases are missing. For example, some interfaces with 25 Gbps per lane and 50 Gbps per lane are not included for now. For a complete presentation, it is suggested to add those missing cases.

SuggestedRemedy

1. On Page 702, Line 42: change the title "8:1 and 8:2 PMA instantiations for 200GBASE-R PHYs" to "8:4, 8:2 and 8:1 PMA instantiations for 200GBASE-R PHYs" to include PMD with four 50 Gb/s physical lanes.
2. On Page 703, Line 11: change "n = 2 or 4" to "n = 2, 4 or 8" to include 200GAUI-8 interface.
3. On Page 704, Line 21 and 22: change "{n,p}" to "p". This change is consistent with the style used in Table 176B-1 and avoids the trouble of listing all possible values of n.
4. On Page 704, Line 35, change "120E (C2M)" to "120D (C2C)". This should be a typo.
5. On Page 704, Line 44, change "n = 2 or 4" to "n = 2, 4 or 8" to include 200GAUI-8 interface.
6. On Page 705, Line 11, change "120E (C2M)" to "120D (C2C)". This should be a typo.
7. On Page 705, Line 17, change "n = 2 or 4" to "n = 2, 4 or 8" to include 200GAUI-8 interface.
8. On Page 705, Line 23 and 24: change "{n,p}" to "p". This change is consistent with the style used in Table 176B-1 and avoids the trouble of listing all possible values of n.
9. On Page 707, Line 30, change the title "16:8, 16:4, and 16:2 PMA instantiations for 400GBASE-R PHYs" to "16:16, 16:8, 16:4, and 16:2 PMA instantiations for 400GBASE-R PHYs" to include 400GBASE-SR16 PMD.
10. On Page 707, Line 36, change "p is 2, 4, or 8" to "p is 2, 4, 8, or 16".
11. On Page 708, Line 4, change " 16:{4,8,16}:{4,8}, 16:4:4" to "16:{4,8,16}:{4,8,16}".
12. Change "{4,8}" in table titles to "{4,8,16}" in Line 21 on Page 708, Line 4 and Line 28 on Page 709, Line 4 and Line 30 on Page 710.
13. On Page 708, Line 8, change "n=4" to "n=4, 8, or 16" to include 400GAUI-8 and 400GAUI-16 interfaces.
14. On Page 708, Line 14, change "p=4" to "p=4, 8, or 16" to include PMDs with 8 and 16 physical lanes.
15. On Page 708, Line 34, change "p=4: or 8" to "p=4, 8, or 16" to include PMD with 16 physical lanes.
16. In Line 49 on Page 709 and Line 53 on Page 710, change "p=4 or 8" to "p=4, 8, or 16" to include PMD with 16 physical lanes.
17. On Page 710, Line 15 and 16, change "{m, n}" to "m" since n is not used.
18. On Page 710, Line 17, change "n=4 or 8" to "n=4, 8, or 16" to include 400GAUI-16 interface.
19. On Page 710, Line 20, add "n=16: 120C (C2C)" to include 400GAUI-16 C2C.
20. On Page 710, Line 23, change "{n,p}=4 or 8" to "{n,p}=4, 8, or 16".

A contribution covering all the remedies will be provided.

Proposed Response *Response Status* **W**

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

Cl **186** *SC* **186.3.3.2** *P* **602** *L* **51** # 267

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

"mfas<0:21>" should be changed to "faw<0:21>", as it is shortened from multi-frame alignment word per CL186.3.3.5.

SuggestedRemedy

Change "mfas<0:21>" to "faw<0:21>".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.3.3.2** *P* **603** *L* **9** # 268

Wang, Xuebo Huawei

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

"S<7023:7075>" should be changed to "S<7013:7075>". Each 800GBASE-ER1 PMA frame contains 114 rows of 64 symbols per Line 46 on Page 602 in CL186.3.3.2. S<7013:7075> consists of the 63 payload symbols of row 113 leaded by the pilot symbol P113.

SuggestedRemedy

Change "S<7023:7075>" to "S<7013:7075>".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.2** *P* **700** *L* **8** # 270

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

"of" is missing between "the number" and "upper".

SuggestedRemedy

Add "of" between "the number" and "upper".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.2** *P* **701** *L* **40** # 271

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Typo: "my" should be changed to "may".

SuggestedRemedy

Change "my" to "may".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.3** *P* **702** *L* **22** # 272

Wang, Xuebo Huawei

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

"4:32 BM-PMA" should be changed to "4:32 SM-PMA", as the PMA above it is an SM-PMA.

SuggestedRemedy

Change "4:32 BM-PMA" to "4:32 SM-PMA".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.4.2** *P* **706** *L* **3** # 273

Wang, Xuebo Huawei

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

"Figure 176B-2" should be changed to "Figure 176B-3", as the Extender is shown in Figure 176B-3 instead of 176B-2. The same issue happens in Line 3 on Page 711.

SuggestedRemedy

Change "Figure 176B-2" to "Figure 176B-3" in Line 3 on Page 706 and Line 3 on Page 711.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.6.1** *P* **713** *L* **28** # 274

Wang, Xuebo Huawei

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

The note should describe how an n:p PMA is formed instead of an m:n PMA

SuggestedRemedy

Change the sentence "The combination of m:32 PMA and 32:n PMA forms an m:n PMA" to "The combination of n:32 PMA and 32:p PMA forms an n:p PMA".

Proposed Response *Response Status* **W**

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

Cl **176B** *SC* **176B.6.2** *P* **715** *L* **44** # 275

Wang, Xuebo Huawei

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

The symbol-multiplexed interfaces and bit-multiplexed interfaces are denoted by "S" and "B", respectively, per CL176B.6.2. However, "S" and "B" are missing in the titles of Table 176B-25. The same issue happens in the titles of 176B-26 and 176B-27 in Line 4 and 24 on Page 716. The missing also does not fit with the title style of other tables in Annex 176B.

SuggestedRemedy

Change the title of Table 176B-25 "800 Gb/s 32:4:32 and 32:8:32 PMA instantiations" to "800 Gb/s 32:4:32 and 32:8:32 (S or B) PMA instantiations";
Change the title of Table 176B-26 "800 Gb/s 32:8:8:32 and 32:4:4:32 (n = m) PMA instantiations" to "800 Gb/s 32:8:8:32 and 32:4:4:32 (n = m, BB or SS) PMA instantiations";
Change the title of Table 176B-27 "800 Gb/s PMA 32:4:8:32 and 32:8:4:32 (n≠m) instantiations" to "800 Gb/s 32:4:8:32 and 32:8:4:32 (n≠m, SB or BS) PMA instantiations".

Proposed Response *Response Status* **W**

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

Cl **176B** *SC* **176B.7.1** *P* **717** *L* **2** # 276

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

"or 8" is redundant.

SuggestedRemedy

Delete "or 8" in Line 2 on Page 717.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.7.2** *P* **718** *L* **24** # 277

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

"n=16" and "n=8" should be changed to "m=16" and "m=8", as the corresponding row is of 1.6TAUI-m.

SuggestedRemedy

Change "n=16" to "m=16" in Line 24 on Page 718;
Change "n=8" to "m=8" in Line 25 on Page 718.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176B** *SC* **176B.4.2** *P* **706** *L* **1** # 278

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

The title should not include "200GBASE-R PHYs" as the sub-clause only talks about Extender. The same issue happens in Line 1 on Page 711 of CL176B.5.2 and Line 27 on Page 715 of CL176B.6.2.

SuggestedRemedy

Delete "200GBASE-R PHYs" in Line 1 on Page 706;
Delete "400GBASE-R PHYs" in Line 1 on Page 711;
Delete "800GBASE-R PHYs" in Line 27 on Page 715.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
For 200G and 400G, there are no defined PHY types that would use the instantiations defined in this subclause. However, there is one defined 800G PHY type that may use these instantiations as noted in the sentence "These
instantiations are also relevant to the 800GBASE-R PHY type defined in Clause 185 and shown (with Inner FEC) in Figure 176B–2."
Delete "200GBASE-R PHYs" in Line 1 on Page 706;
Delete "400GBASE-R PHYs" in Line 1 on Page 711;

Cl **176B** *SC* **176B.6.2** *P* **715** *L* **39** # 279

Wang, Xuebo Huawei

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

PMD does not exist in Extender. The example should be like: an instantiation with a one S 800GAUI-n and one B 800GAUI-n is denoted “SB” or “BS”.

SuggestedRemedy

Change "one B PMD" to "one B 800GAUI-n".

Proposed Response *Response Status* **W**

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

Cl **176B** *SC* **176B.5.1** *P* **710** *L* **10** # 280

Wang, Xuebo Huawei

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

A colon is missing between m=2 and 176. The same happens in Line 16, 19, 24, 36, 42, 45, and 51 on Page 710.

SuggestedRemedy

Add a colon between 2 and 176 in Line 10, 16, 19, 24, 36, 42, 45, and 51 on Page 710.

Proposed Response *Response Status* **W**

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

Cl **177** *SC* **177.5.2** *P* **337** *L* **19** # 281

Ren, Hao — Huawei

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

The definition of the candidate location and the synchronization location is not clear.

The candidate location is the inner FEC codeword boundary of a valid set of codewords. The candidate location is regarded as the synchronization location when the candidate location is confirmed valid for a second window of 128b-bit blocks.

SuggestedRemedy

Change:
The synchronization process searches for a valid set of codewords in a window of 128-bit blocks, confirms the candidate location is valid for a second window of 128b-bit blocks and then monitors that the synchronization location continues to be valid during operation.
to:
[A]: The synchronization process searches for a valid set of codewords in a window of 128-bit blocks. The boundary of these codewords is marked as candidate location, which is confirmed as the synchronization location if it is valid for a second window of 128b-bit blocks. The synchronization process contiuously validates the synchronization location during operation.
[B]: The synchronization process searches for a valid set of codewords in a window of 128-bit blocks, marking the boundary of these codewords as candidate location, confirms the candidate location as sychronization location by validating for a second window of 128b-bit blocks, and then monitors that the synchronization location continues to be valid during operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Breaking the sentence can improve clarity. Use language as follows:
"The synchronization process searches for a valid set of codewords in a window of 128-bit blocks, marking the boundary of these codewords as a candidate location. A candidate location is confirmed as the synchronization location if it is valid for a second window of 128b-bit blocks. The synchronization process continuously validates the synchronization location during operation."

Cl **FM** *SC* **FM** *P* **12** *L* **54** # 284

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting and Cisco

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Missing information on the P802.3da amendment

SuggestedRemedy

Insert,
"IEEE Std 802.3da™-20xx
Amendment 1X—This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to enhance the 10 Mb/s shared-medium (multidrop) mode of the 10BASE-T1S Physical Layer in a new, multidrop-only physical layer specification (including reconciliation sublayers, management parameters, Ethernet support for time synchronization protocols, and optional power delivery to support multiple Powered Devices on the 10 Mb/s mixing segment)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the resonse to comment #332.

Cl **00** *SC* **0** *P* **0** *L* **0** # 293

Brown, Matt — Alphawave Semi

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

The PICS subclause in many clauses and annexes is incomplete.

SuggestedRemedy

Update PICS subclause in all clauses and annexes as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.264** *P* **112** *L* **5** # 295

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Logic) (bucket) possesive*

Use of possesive grammar is inconsistent with similar phrases used through this draft and is unecessary here.

SuggestedRemedy

Change "Lane 0's" to "Lane 0"
Change "Lane 1's" to "Lane 1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.4.2** *P* **130** *L* **15** # 296

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Logic) (bucket) possesive*

Use of possesive grammar is inconsistent with similar phrases used through this draft and is unecessary here.

SuggestedRemedy

Change "link partner's" to "link partner"
Also on page 131 line 51

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.2.4.6** *P* **265** *L* **28** # 298

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Use of possesive grammar is inconsistent with similar phrases used through this draft and is unecessary here.

SuggestedRemedy

Change "PCS lane's" to "PCS lane"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.4.3** *P* **304** *L* **46** # 299

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The would "may" is to be used for the context "is allowed to".

SuggestedRemedy

Change "is allowed to" to "may".
Implement same in 179.9.5.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
On page 304, line 46:
change: "the full set of PCS lanes is allowed to proceed though "
to: "the full set of PCS lanes proceeds though "

In subclause 179.9.5.2, on page 406, line 8:
change: "The receiver is allowed to control the"
to: "The receiver may control the"

[Editor's note: CC: 176, 179]

Cl **178** *SC* **178.7** *P* **359** *L* **23** # 300

Brown, Matt — Alphawave Semi

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

There are no "FEC lanes". This is likely a carry-over from 802.3ck for 100GBASE-KR1 which indeed does have FEC lanes.

SuggestedRemedy

Change "PCS or FEC" to "PCS".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.8.1** *P* **360** *L* **38** # 301

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *Electrical) (bucket) possesive*

Use of possesive grammar is inconsistent with similar phrases used through this draft and is unecessary here.

SuggestedRemedy

Change "transmitter's" to "transmitter"
Change "receiver's" to "receiver"
Implement similar in Figure 179-2, Table 179-10, Figure 176C-2, Table 176C-4, Table 176D-4, Table 176D-5,
On page 723 line 26 change "component's" to "component".
On page 756 line 1 change "transmitter's
measured parameters" to "measured transmitter parameters"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The table footnotes listed in the comment include the phrase "at the test transmitter's output". This phrase is gramatically correct. Removing the posessive does not improve the technical clarity or accuracy of the text.
However, in the link diagram figures, the SL and DL signals are two sides of the same differential pair. Thus the text can be improved.
In Figure 178-2, Figure 179-2, and Figure 176C-2, change "transmitter's" to "transmitter-side" and "receiver's" to "receiver-side".

[matt] this is just poor style and only used rarely; we 99% of the time use the <noun> <thing related to noun>, e.g., transmitter out, host output, module input, amplifier gain, etc., etc., etc. I be pulling this one from the bucket.

Cl **178** *SC* **178.8.9** *P* **361** *L* **25** # 305

Brown, Matt Alphawave Semi

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

Regarding "control the transmitter on each lane of the MDI". It's really controlling the PMD transmitter not the MDI and to be clear it is controlling the PMD transmitter only in response to requests from the link peer interface.

SuggestedRemedy

Change "control the transmitter output on each lane of the MDI" to "control the PMD transmitter output on each lane based on requests from the peer interface".
Implement similarly in 179.8.9, 176C.3, and 176D.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2.1.2** *P* **363** *L* **25** # 307

Brown, Matt Alphawave Semi

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

It appears that to measure ERL properly the test fixture would have to be terminated at TP0 with an appropriate impedance or reflections from the device under test would have to be gated out.

SuggestedRemedy

Provide appropriate guidance for measuring the ERL at TP0v.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description is consistent with the initial specification of test fixture ERL in 163.9.2.1.2. Either of the methods suggested in the comment, and possibly others, could be used by test engineers to verify the quality of the test fixture. The standard does not prescribe the test method.
The suggested remedy does not provide sufficient detail to implement.

Cl **178** *SC* **178.9.2.2** *P* **364** *L* **3** # 308

Brown, Matt Alphawave Semi

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

As is done for other parameters, it would be helpful to follow "difference ERL" with variable name "dERL".

SuggestedRemedy

Change "difference ERL" to "difference ERL dERL" where dERL is italic.
Make a similar change in other subclause throughout that specify dERL.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2.2** *P* **364** *L* **4** # 309

Brown, Matt Alphawave Semi

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

Likely, Table 178-7 should be Table 178-8.

SuggestedRemedy

Change cross-reference from "Table 178-7" to "Table 178-8".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.2** *P* **366** *L* **23** # 310

Brown, Matt Alphawave Semi

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

178.9.3.3 should be compliant over the range as well.

SuggestedRemedy

Change "178.9.3.4 and 178.9.3.5" to "178.9.3.3 through 178.9.3.5"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.3** *P* **366** *L* **32** # 311

Brown, Matt Alphawave Semi

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

The more formal word "may" should be used instead of "is allowed to". Per style guide: "The word may is used to indicate a course of action permissible within the limits of the standard (may equals is permitted to)."

SuggestedRemedy

Change "is allowed to" to "may".
Implement also on page 727 line 13, page 755 line 16.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.4.1** *P* **366** *L* **50** # 312

Brown, Matt Alphawave Semi

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

So crosstalk is noise, so in this sentence what is "noise", also crosstalk and noise are not distortions per se, but rather perturbations. Is noise referring to alien noise or intrinsic noise? Distortion implies a changing of the launched signal such as insertion loss, bandwidth, and non-linearity, which I don't think are intended here.

SuggestedRemedy

Change "The channel noise source emulates crosstalk,
noise, and any other non-equalizable signal distortions that may be introduced by a transmitter or channel."
To "The channel noise source emulates crosstalk, alien and intrinsic noise, and any other non-equalizable signal perturbations that may be introduced by a transmitter or channel."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change from
"The channel noise source emulates crosstalk, noise, and any other non-equalizable signal distortions that may be introduced by a transmitter or channel."
to
"The channel noise source represents non-equalizable impairments that may be introduced by a transmitter or channel."

Cl **178** *SC* **178.9.3.4.2** *P* **367** *L* **17** # 313

Brown, Matt Alphawave Semi

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

It is not clear which text below this table are exceptions vs addition material. Usually, we use a dashed list to annotate the exceptions.

SuggestedRemedy

Identify the relevant exceptions within a dashed list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license, with consideration of the response to comment #314.

Cl **178** *SC* **178.9.3.4.2** *P* **367** *L* **21** # 314

Brown, Matt Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

This is not an ordered list so should be formatted as dashed list.

SuggestedRemedy

Reformat as dashed list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.4.2** *P* **367** *L* **35** # 315

Brown, Matt Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

This is not an ordered list so should be formatted as dashed list. Further, it is not permitted to use the same list values (e.g., a), b), c)), for two separate lists within the same subclause.

SuggestedRemedy

Reformat as dashed list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.4.3** *P* **368** *L* **21** # 316

Brown, Matt Alphawave Semi

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

Per style guide this should be lettered list, not numbered list.

SuggestedRemedy

Reformat as lettered list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.4.3** *P* **368** *L* **44** # 317

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

The noise is RMS so not defined by amplitude. Also, "higher noise" here is compound adjective so should be hyphenated.

SuggestedRemedy

Change "higher amplitude" to "higher voltage" or "higher noise" or similar.
If the current wording is desired, then add a hyphen "higher-amplitude".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the text from "higher amplitude values" to "higher noise values."

Cl **178** *SC* **178.9.3.5** *P* **369** *L* **7** # 318

Brown, Matt — Alphawave Semi

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

This phrase is hard to parse: "and both JRMS and J4u03 are measured with the jitter frequency and amplitude set according to Case F from Table 179–12." I think it means that J_RMS and J4u_03 are measured after the sinusoidal jitter with frequency and amplitude for Table 179-12 is applied. Also, I think this can be broken into a pair of subbullets for clarity.

SuggestedRemedy

Change to:
-- For the COM parameter calibration described in 93C.2 item 7):
-- J4u is substituted by J4u03
-- JRMS and J4u03 are measured with applied sinusoidal jitter with frequency and amplitude set according to Case F from Table 179–12

Proposed Response *Response Status* **W**

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

Cl **180** *SC* **180.9.5** *P* **448** *L* **25** # 320

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Common) taps (bucket)*

Table 180-15 footnote a is out of sync with the table. Coefficients are labelled as being normalized, thus saying they are relative to c(0) is redundant. However, it is not stated what normalized means. The table already associates "main tap" with c(0) on row 4.

SuggestedRemedy

Change footnote a to: "The normalized tap coefficients are relative to c(0)."
Implement also in Table 181-13, Table 182-15, and Table 183-14.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.9.5** *P* **448** *L* **27** # 321

Brown, Matt — Alphawave Semi

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

Regarding Table 180-15 footnote b… The table specifies an non-normalized range for c(0) and normalized values for the other coeffecients. It is not immediately clear whether to sum the normalized or non-normalized coeffecients.

SuggestedRemedy

Change footnote b to: "Equalizer gain is the sum of the non-normalized coefficients." or similar.
Implement also in Table 181-13, Table 182-15, and Table 183-14.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change footnote b to: "Equalizer gain is the sum of the non-normalized coefficients."
Implement also in Table 181-13, Table 182-15, and Table 183-14.
Implement with editorial license.

Cl **180** *SC* **180.9.6** *P* **449** *L* **14** # 322

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

Use of possesive grammar is inconsistent with similar phrases used through this draft and is unecessary here.

SuggestedRemedy

Change "transmitter's" to "transmitter"
Also page 472 line 38, page 499 line 16, page 523 line 46.

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.11.4** *P* **802** *L* **25** # 325

Brown, Matt — Alphawave Semi

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

Use of possesive grammar is inconsistent with similar phrases used through this draft and is unecessary here.

SuggestedRemedy

Change "transmitter's" to "transmitter", three instances. Also, page 808 line 17, 4 instances. Also on page 804 line 44, change "interface's" to "other interface"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **169** *SC* **169.5** *P* **201** *L* **36** # 327

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

In Table 169-6, footnotes a and b are identical.

SuggestedRemedy

Merge footnote a and b into a single footnote.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Footnote a and b are indeed the same. However, footnote a is incorrect.
Change footnote a to the following:
"The symbol ~~ indicates approximate equivalent of maximum Skew Variation in bits based on 1 bit time equals 37.64706 ps at PCS lane bit rate of 26.5625 Gb/s."

Cl **179B** *SC* **179B.2.1** *P* **823** *L* **39** # 328

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

Variable subscripts should be normal font rather than italic font unless the subscript represents another variable, e.g. an index, f_i where i is and index variable.

SuggestedRemedy

Change variable subscripts to normal font where appropriate through Annex 179B.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **183** *SC* **183.7.1** *P* **512** *L* **29** # 329

Landry, Gary — Texas Instruments

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

min OMA limits for higher TECQ/TDECQ values are referenced to an equation outside the table (Eq 183-1).

SuggestedRemedy

To increase readability and maintain parallel structure to to other clauses (e.g., 180, 181, and 182), bring external equation into the table

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The editorial team agrees that including the equation within the table would ideally improve readability and maintain consistency with clauses 180, 181, and 182.
However, the table in clause 183 has only half the space available compared to those clauses, and the equation does not fit within the current layout. Thus the equations are provided outside of the table and referenced from within the table.

Cl **183** *SC* **183.7.1** *P* **512** *L* **31** # 330

Landry, Gary — Texas Instruments

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

min OMA limits for higher TECQ/TDECQ values are referenced to an equation outside the table (Eq 183-2).

SuggestedRemedy

To increase readability and maintain parallel structure to to other clauses (e.g., 180, 181, and 182), bring external equation into the table

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The editorial team agrees that including the equation within the table would ideally improve readability and maintain consistency with clauses 180, 181, and 182.
However, the table in clause 183 has only half the space available compared to those clauses, and the equation does not fit within the current layout. Thus the equations are provided outside of the table and referenced from within the table.

Cl **FM** *SC* **FM** *P* **1** *L* **33** # 332

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Likely that this draft will need to consider amendments 802.3da and 802.3dk, both of which are ahead of it in the process. Commenter's review of 802.3dk in working group ballot has noted some overlaps with this amendment.

SuggestedRemedy

Add 802.3da and 802.3dk to the list of amendments considered. Editors are encouraged to review the draft for consistency with 802.3dk especially.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Based on input from the 802.3 working group chair, the order of amendments will be as follows:
Amendment #10: IEEE P802.3da
Amendment #11: IEEE P802.3dk
Amendment #12: IEEE P802.3dj
Amendment #13: IEEE P802.3dg
Using the amendment numbers and order above...
Add 802.3da and 802.3dk to the amendment list on page 1 line 33.
Add 802.3da and 802.3dk to the amendment abstract list on page 13
Add 802.3da and 802.3dk to the amendment list on the cover page (page 1) and the amendment abstract list on page 13.
Add the amendment number (12) to the title on page 1 and page 51 and to the 802.3dj entry on page 13.
Implement with editorial license.

Cl **FM** *SC* **FM** *P* **13** *L* **1** # 333

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Likely that 802.3da and 802.3dk will publish before this amendment their abstracts should be included.

SuggestedRemedy

Consult with 802.3 leadership on likely amendment order, insert abstracts for 802.3da and 802.3dk from the latest drafts of those.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the resonse to comment #332.

Cl **185A** *SC* **185A.1** *P* **859** *L* **16** # 335

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

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

The annex only contains a single methodology (ETCC), and it really doesn't define the parameter - it specifies the method of calculation.

SuggestedRemedy

Replace text of 185A.1 text with: "This annex defines the method for measuring and computing the Extended transmitter constellation closure (ETCC). The ETCC is a

Proposed Response *Response Status* **W**

PROPOSED REJECT.
While the annex currently only defines ETCC, the intent of the annex is to contain all coherent measurement methodologies that future specifications may require so we do not want to limit the scope of the annex to ETCC only.

Cl **187** *SC* **187.8.6** *P* **643** *L* **44** # 336

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

This section says, "The method and ETCC
calculation are defined in 187.9." - but when I look at 187.9, I only find that it is computed using the test setup and calculation defined in Annex 185A. (and parameter values for the front end in Tables 187-12 and 187-13) - none of this is defines the method and calculation - it just points the reader on to another section - better point to 185A and the tables directly rather than a wild goose chase with an in between reference that just points ahead.

SuggestedRemedy

Change "The method and ETCC calculation are defined in 187.9." to "The method and ETCC
calculation are defined in 185A, using the parameters in the Tables 187-12 and 187-13."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185A** *SC* **185A.2.5.2** *P* **865** *L* **39** # 337

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

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

The required signal to noise ratio (in general) is not what is in equation 185A-2. Equation 185A-2 is the Required signal to noise ratio in the presence of virtual ASE. (RSNR_ase) not just RSNR.

SuggestedRemedy

change "required signal to noise ratio (RSNR)" to "required signal to noise ratio in the presence of virtual ASE (RSNR_ase)" at line 39

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185A** *SC* **185A.2.5.2** *P* **865** *L* **46** # 338

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

DeltaRSNR_trx doesn't relate to "RSNR" in equation 185A-3, it relates to RSNR_ASE.

SuggestedRemedy

Change RSNR to RSNR_ase at line 46

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.6** *P* **280** *L* **17** # 340

de Koos, Andras Microchip Technology

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

phrasing is awkward: "… path delays are reported as if …, and the PCS_timesync_multilane_ability variable is asserted.
Does this mean that path data delays are reported as if the PCS_timesync_multilane_ability variable is asserted?
The text says "report as if A, and B" when it should say "when B is true, report as if A".

SuggestedRemedy

Rephrase as the sentence as:
When the PCS_timesync_multilane_ability variable is asserted, the transmit and receive path data delays are reported as if the DDMP (data delay measurement point) is at the start of the set of four interleaved RS-FEC codewords (see 90.7)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.7** *P* **369** *L* **13** # 348

Ghiasi, Ali Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) RL masks*

In 802.3ck the limit for RLcd was 50 GHz, going up to 50 GHz is not adequte

SuggestedRemedy

Suggest to increase to 67 GHz

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Resolve using the response to comment #363.

Cl **176D** *SC* **176D.7.2** *P* **748** *L* **51** # 350

Ghiasi, Ali Ghiasi Qunatum/Marvell

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

The partial channel is only needed for cable assembly CR and not for C2M which has the complete S-Parameters

SuggestedRemedy

Partial channel not need for C2M COM and should be removed

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The CRG has previously considered similar comments, the recent one being comment #151 against D1.4 (see <https://www.ieee802.org/3/dj/comments/D1p4/8023dj_D1p4_comments_final_clause.pdf#page=27>, which was rejected.
As noted in the response to that comment, the host channel model, which is used in dSNDR (176D.8.7) and in host interference tolerance test calibration (176D.8.12.2), includes the partial channel (subject of this comment) and physical MCB and HCB, (see, e.g., Figure 176D-7b).
The partial host channel constitutes most of the 32 dB IL which is the consenus IL budget for the C2M channel. Therefore, it should not be removed.
This comment does not provide any information that was not included in previous comments.

Cl **176D** *SC* **176D.8.1** *P* **751** *L* **50** # 358

Ghiasi, Ali — Ghiasi Qunatum/Marvell

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

Differential and common-mode signals are not defined in 93.8.1.3, just the figure is used for level definition.

SuggestedRemedy

Replace with, Differential and common-mode signal levels definition is given by 93.8.1.3.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Contrary to the statement in the comment, the differential and common-mode signals are explicitly defined in the first paragraph of 93.8.1.3:
"The differential output voltage v_di is defined to be SLi<p> minus SLi<n>. The common-mode output voltage v_cmi is defined to be one half of the sum of SLi<p> and SLi<n>".

Cl **179** *SC* **179.9.4.8** *P* **403** *L* **35** # 363

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) RL masks*

802.3ck common mode return loss frequency was up to 50 GHz

SuggestedRemedy

We should at least extend the RLcc to 67 GHz.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
RLcc mask was adopted, together with other frequency masks, by the response to comment #374 against D1.1 (see <https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_final_clause.pdf#page=66>).

The supporting presentation, <https://www.ieee802.org/3/dj/public/24_09/ran_3dj_01_2409.pdf>, includes masks that were compared with contributed s-parameters data for test fixtures.
Note that the proposal used a limit of 60 GHz, based on comment 242 against D1.0, as noted on slide 3. However, that comment addressed the BT filter bandwidth for transmitter measurements, . These measurements are performed on a scope, which requires a higher measurement bandwidth to implement the BT filter.

Frequency-domain measurements do not require a BT filter, so measurement to 67 GHz (as suggested) may be possible. However, this would require non-trivial changes to test fixture frequency masks (e.g., Figure 179B–4), which are not addressed in the suggested remedy.
If extending the bandwidth to 67 GHz is considered necessary, a complete proposal including justification, proposed frequency masks (including test fixtures), and comparison to contributed data would be encouraged.

Cl **179** *SC* **179.9.4.9** *P* **404** *L* **35** # 364

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) RL masks*

802.3ck common mode to differential return loss frequency was up to 50 GHz

SuggestedRemedy

We should at least extend the RLdc to 67 GHz.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #363.

Cl **176C** *SC* **176C.6.4.4** *P* **727** *L* **33** # 366

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) RL masks*

802.3ck common mode to differential return loss frequency was up to 50 GHz

SuggestedRemedy

We should at least extend the RLdc to 67 GHz.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #363.

Cl **178** *SC* **178.9.2.3** *P* **364** *L* **28** # 367

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) RL masks*

802.3ck common mode return loss frequency was up to 50 GHz

SuggestedRemedy

We should at least extend the RLcc to 67 GHz.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #363.

Cl **179** *SC* **179.9.5.6** *P* **410** *L* **47** # 369

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *Electrical) (bucket) RL masks*

802.3ck common mode to differential return loss frequency was up to 50 GHz

SuggestedRemedy

We should at least extend the RLdc to 67 GHz.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #363.

Cl **178** *SC* **178.10.1** *P* **371** *L* **12** # 378

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **ER** *Comment Status* **D** *al) (bucket) COM parameters*

All symbols such as Cd(1) or Ls(1) the "(1)" seems like is superscript

SuggestedRemedy

Please make it inline

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The numbers in parentheses are intended to be superscript. This is the convention used in all clauses in which COM is used (178, 179, 176C, 176D) and matches the parameter definitions in 178A.
The suggested remedy does not add clarity to the draft.

Cl **178** *SC* **178.10.1** *P* **372** *L* **33** # 379

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **ER** *Comment Status* **D** *ical) (bucket) table formatting*

Symbols fp1 and fp2 seem connected

SuggestedRemedy

May need to adjsut or incease spacing

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Adjust spacing with editorial license.

Cl **179** *SC* **179.10.1** *P* **415** *L* **45** # 380

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **ER** *Comment Status* **D** *al) (bucket) COM parameters*

All symbols such as Cd(1) or Ls(1) the "(1)" seems like is superscript

SuggestedRemedy

Please make it inline

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Resolve using the response to comment #378.

Cl **174A** *SC* **174A.8** *P* **679** *L* **24** # 402

Mi, Guangcan — Huawei Technologies Co., Ltd

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

This clause discusses the error ratio tests for 200Gb/s per lane ISLs, whereas this sentence says "A method for constraining the error ratio of a PHY based on error masks using PMA measurements ….."... The test method for PHY is to be discussed in the later subclause of 174A.10

SuggestedRemedy

change the word "PHY" to "ISL" in the mentioned sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.8.1** *P* **679** *L* **38** # 403

Mi, Guangcan — Huawei Technologies Co., Ltd

Comment Type **ER** *Comment Status* **D** *subclause hierarchy (bucket)*

There is only one sub-clause under 174A.8, which is 174A.8.1, no need to have this level in the hierachy.

SuggestedRemedy

remove the hierachy of 174A.8.1, make its sub-clauses 174A.8.x

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The subclause hierarchy could indeed be improved. See related slides in the following editorial contribution:
<URL>/brown_3dj_03_2507

Cl **174A** *SC* **174A.10.1.3** *P* **685** *L* **40** # 407

Mi, Guangcan Huawei Technologies Co., Ltd

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

typo of the word then in the sentence

SuggestedRemedy

change "the" to “then”

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The comment appears to point to this sentence: "Initialize He(k), the composite error histogram, to Ha(k)."
The word "the" in this sentence is correct.

Cl **174A** *SC* **174A.10.1.3** *P* **685** *L* **45** # 408

Mi, Guangcan Huawei Technologies Co., Ltd

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

missing a word "to"

SuggestedRemedy

change to " expected to be less"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174** *SC* **174.2.1** *P* **248** *L* **48** # 423

Ran, Adee Cisco Systems

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

"MII" is defined in 1.4.393 with reference to Clause 22, which is 100 Mb/s. It is irrelevant for this project. Saying that "The MII is not intended to be physically instantiated" does not match this definition.

"MII" has been used in other clauses in a way that contradicts the definition. This is wrong, and should not be carried on.

The text can say that 1.6T Ethernet uses a specific interface between the RS and the PCS, the 1.6TMII. Or simply use 1.6TMII everywhere instead of MII.

SuggestedRemedy

Change "MII" to "1.6TMII", and change the expanded acronym accordingly, across this clause, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **181** *SC* **181.7.1** *P* **462** *L* **19** # 429

Ran, Adee Cisco Systems

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

Table 181-5 has a sub-row of OMA_outer (min): "for TDECQ<0.9 dB"

Shouldn't it be "for max(TECQ, TDECQ)<0.9 dB", as in the similar rows in Table 180-7, Table 182-7, and Table 183-6?

SuggestedRemedy

Change to "for max(TECQ, TDECQ)<0.9 dB".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.3** *P* **53** *L* **49** # 434

Ran, Adee Cisco Systems

Comment Type **T** *Comment Status* **D** *non) (bucket) MDI references*

Several items in the normative references list include a specific Draft number. Some of these drafts are no longer available, and in some cases the version number does not match the date indicated (which suggests that a newer draft was intended).

For SFF documents, only the most recent draft (typically with version number x.y.z) is available; older drafts are removed.

Per the IEEE SA style manual (12.3.1 item c): "Draft standards: Unpublished drafts may be used as normative references as long as they are: (-) Dated (-) Readily available (-) Retrievable; A copy of ALL drafts shall be submitted to IEEE SA to be placed on file as an archive."

Thus, if we keep a dated draft, it should be archived in IEEE SA.

This comment pertains to the following references:

"SFF-8665, Rev 1.9.4, April 1, 2022" (QSFP+) - 1.9.4 is a draft that is no longer available. The current draft is 1.9.8. The published version, 1.9, is from 2015, apparently too old.

"SFF-TA-1011 Rev 1.1, April 19, 2024" (SFF cross reference) - revision number does not match the date; Rev 1.1 is from 2019-10-01 and is apparently too old to be referenced by this project. The current draft is 1.1.6.

"SFF-TA-1027, Rev 1.0, April 16, 2024" - (QSFP2 connector, cage, & module) - revision number does not match the date; Rev 1.0 is from 2023-05-30 and does not include QSFP224 as required for this project. The current draft is 1.0.6.

"QSFP-DD/QSFP-DD800/QSFP-DD1600 Hardware Specification for QSFP Double Density 8x Pluggable Transceivers, Rev 7.1, June 25, 2024.7" - this is indeed the current version, but it is a not a draft; there is no reason to refer to a specific version rather than the latest one.

"SFF-TA-1031, Rev 1.0, June 11, 2023, SFP2 Cage, Connector, & Module Specification" - this is indeed the current version (which does not include SFF224, subject of another comment) but it is not a draft; there is no reason to refer to a specific version rather than the latest one.

Since these are normative references that apply to multiple projects, including future ones, they should refer to documents that are available to readers in the future. Thus, we should use undated references where possible. Per the style manual (12.3.2), standards may be deted or undated; but drafts "shall be numbered and dated".

An editor's note may be used to indicate the current draft and as a reminder that "drafts shall be submitted to IEEE SA".

SuggestedRemedy

For each of the indicated references that is a draft, add an editor's note (to be removed before publication) indicating the revision number and date as of D2.1, and a reminder to update to the latest draft revision and date and provide a copy for the archive prior to publication.

Make similar changes as appropriate in the text that refers to these form factors in Annex 179C.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license using the versions provided in the comment.

Cl **1** *SC* **1.3** *P* **53** *L* **54** # 436

Ran, Adee Cisco Systems

Comment Type **TR** *Comment Status* **D** *ion) (bucket) MDI References*

QSFP-DD MSA specification is not the reference for SFP-DD224 (which does not exist yet) and QSFP224 (which is an SFF specification).

SuggestedRemedy

Delete "SFP-DD224, QSFP224, and"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.4.1** *P* **129** *L* **31** # 439

Ran, Adee Cisco Systems

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

"but will not transmit an ability it does not possess"

"will" is not suitable - it is a requirement, not a statement of fact.

"advertise" is typically used for abilities, and is preferable over "send" here.

SuggestedRemedy

Change to "but it shall not advertise an ability it does not possess".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Draft 2.0 deletes the following text in 73.6.2.4: "Multiple technologies may be advertised in the link codeword. A device shall support the data service ability for a technology it advertises. It is the responsibility of the Arbitration function to determine the common mode of operation shared by a link partner and to resolve multiple common modes."

The first and third sentences of the deleted text were moved to "73.4.1 Technology ability" however the second sentence was not moved into 73.4.1 because of the existing "but will not transmit an ability it does not possess" legacy text in 73.4.1.

Becasue the deleted sentence contains the word "shall" it is apropriate to change "will" to "shall" as indicated in the suggested remedy.

Implement suggested remedy and update PICS item LE8 in 73.11.4.3 to point to 73.4.1.

Implement with editorial license and update other Clause PICS subclause references if necessary.

Cl **73** *SC* **73.6.2.5** *P* **133** *L* **50** # 440

Ran, Adee Cisco Systems

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

"FEC capability (F4, F2, F3, F0, F1) is encoded in bits D43:D47"
three of these bits encode requests, rather than capabilities.

SuggestedRemedy

Change to "FEC capability and request bits (F4, F2, F3, F0, F1) are encoded in bits D43:D47"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176** *SC* **176.7.1.2** *P* **316** *L* **24** # 449

He, Xiang Huawei

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

If ILT is disabled by management, how would precoding request signals get carried over to the transmitter side? I understand this is the language we used to define the precoding config before ILT was introduced. Combining this wilt 178B, when bring up a link while disabling the ILT, a Rx without precoding may not be able to start the link with a Tx with precoding turned on?

SuggestedRemedy

For PMDs that require to implement precoding on the transmit side, when ILT is disabled, a default mode should be defined to have precoding disabled, either in 176 or 178B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Resolve using the response to comment #186

[Editor's note: CC: 176, 177]

Cl **116** *SC* **116.5** *P* **167** *L* **32** # 456

Slavick, Jeff Broadcom

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Footnote D is new but not underlined. The new references in the Notes sections are appropriately underlined.

SuggestedRemedy

Underline footenote d and its references in Table 116-8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **116** *SC* **116.5** *P* **167** *L* **32** # 457

Slavick, Jeff Broadcom

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

The laundry list of PMA types that do odd lane skew is more clear if it's a comma separated list instead of using multiple "or" options.

SuggestedRemedy

Change "by the 200GBASE-R 1:8 or 8:1 PMA or 400GBASE-R 2:16 or 16:2 PMA if the PHY includes any of these PMA types."
To: "by the 200GBASE-R 1:8 PMA, 200GBASE-R 8:1 PMA, 400GBASE-R 2:16 PMA and 400GBASE-R 16:2 PMA if the PHY includes any of these PMA types. "

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.4** *P* **786** *L* **52** # 458

Slavick, Jeff Broadcom

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

The second paragraph of 178B.4 talks about "devices" that have one or two physically instatied interfaces. The use of "former" and "latter" is refering to one and two? Or PMD and AUI?.

What about devices with no physically instantiated interfaces, it still uses ILT on the medium.

SuggestedRemedy

Change the 2nd paragraph from:
Devices in a path may include one or two physically instantiated interfaces, specifically PMD or AUI components. An example of the former is a PMA adjacent to a PCS or to a PHY XS with a single AUI-C2M (Annex 176D) or AUI C2C (Annex 176C) interface (the interface with the PCS or PHY XS is never physically instantiated). An example of the latter is a retimer with an AUI C2C (Annex 176C) interface on one side and an AUI-C2M (Annex 176D) on the other side.

To:
Devices in a path may include zero, one or two physically instantiated interfaces between the MAC and the PMD. Figure 176B-1 depicts a device with zero physically instantiated interfaces. The left two stacks in Figure 176B-2 depict a device with a single xAUI interface, either a AUI-C2M (Annex 176D) or AUI-C2C (Annex 176C). The right 3 stacks in Figure 176B-2 depicts a device with two xAUI interfaces.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
ILT is only applicable to physically instantiated interfaces.
The use of "later" and "former" is confusing.
Resolve using the response to comment #114.

Cl **178B** *SC* **178B.11.2** *P* **800** *L* **47** # 461

Slavick, Jeff Broadcom

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

No pointer to the CHECK_REQ function is provided.

SuggestedRemedy

Add the following sentence to the last paragraph of 178B.11.2: "The function CHECK_REQ is defined in 178B.14.3.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add the following sentence to the last paragraph of 178B.11.2: "The function CHECK_REQ is defined in 178B.14.3.2.".
Implement with editorial license.
[Editor's note: changed page from 783 to 800]

Cl **176C** *SC* **176C.6.3.1** *P* **724** *L* **35** # 462

Slavick, Jeff Broadcom

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

There is ILT has a Type E1 not type E.

SuggestedRemedy

Change Type E to Type E1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #109.
[Editor's note: Changed subclause/page from 176C.5.3.1/706 to 176C.6.3.1/724]

Cl **179** *SC* **179.8.9** *P* **393** *L* **13** # 464

Slavick, Jeff Broadcom

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

Move Table 179-8 and here. It's relevent only to the ILT function.

SuggestedRemedy

Move Table 179-8 to the end of 179.8.9 and delete 179.9.4.1.3

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The initial conditions (presets) table includes tolerances, and thus it is part of the electrical specifications. Its location is consistent with previous clauses.
The suggested change is not considered an improvement of the draft, and may be confusing to readers.
[Editor's note: Changed page from 379 to 393]

Cl **178B** *SC* **178B.5** *P* **788** *L* **3** # 465

Slavick, Jeff Broadcom

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

The otherwise is not necessary as the heading says you use one or the other.

SuggestedRemedy

Remove the "otherwise".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.10** *P* **799** *L* **44** # 467

Slavick, Jeff Broadcom

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

The fact that polarity_invert persists after training completes should be the last part of this sub-clause.

SuggestedRemedy

Move the 2nd paragraph in 178B.10 to be after the NOTE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **13** *L* **0** # 468

Slavick, Jeff Broadcom

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

In the Introduction, the describtion of 802.3dj does not list out the annexes.

SuggestedRemedy

Change <annexes> to be Annex 174A through 186A

Proposed Response *Response Status* **W**

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

Cl **1** *SC* **1.1.3.2** *P* **52** *L* **21** # 469

Slavick, Jeff Broadcom

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Do we need to actually list the number of widths? It's a laundry list just introduce it as a list.

SuggestedRemedy

Change "Four widths" to "The following widths" on pg52 line 21 and line 40
Change "Two widths" to "The following widths" on pg53 line 6
Change "four widths" to "the following widths" on pg55 line 31
Change "four widths" to "the following widths" on pg56 line 19
Change "two widths" to "the following widths" on pg57 line 43

Proposed Response *Response Status* **W**

PROPOSED REJECT.
In principle, stating the number of widths is not necessary. However, it is not incorrect and it does clarify how many width variants to expect. The proposed change does not improve the clarity or accuracy of the draft.

Cl **30** *SC* **30.3.2.1.2** *P* **61** *L* **16** # 470

Slavick, Jeff Broadcom

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

Clause 186 is not a PCS anymore. So it's just a 800GBASE-R PHY now.

SuggestedRemedy

Remove the text associated with 800GBASE-ER1 from 30.3.2.1.2 and 30.3.2.1.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **69** *SC* **69.1.2** *P* **128** *L* **50** # 471

Slavick, Jeff Broadcom

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

Changes to 69.1.2 are missing.

SuggestedRemedy

Amend Figure 69-5 from 802.3df to add on 1.6T the same stack as 800G.

Proposed Response *Response Status* **W**

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

Cl **69** *SC* **69.2.1** *P* **128** *L* **50** # 472

Slavick, Jeff Broadcom

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

Changes to 69.2.1 are missing.

SuggestedRemedy

Amend 69.2.1 to add in the Clause 170 RS and 1.6TMII to the list of MIIs. This clause was amended in 802.3.df.

Proposed Response *Response Status* **W**

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

Cl **69** *SC* **69.2.3** *P* **128** *L* **50** # 473

Slavick, Jeff Broadcom

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

Changes to 69.2.3 are missing.

SuggestedRemedy

Need new paragraph talking about the new PHYs. Add this paragraph after the one 11th paragraph that was amended by 802.3df.
"Backplane Ethernet also specifies 200GBASE-KR1, 400GBASE-KR2, 800GBASE-KR4, and 1.6TBASE-KR8. The 200GBASE-KR1 embodiment employs the PCS defined in Clause 119, the PMA defined in Clause 176, and the PMD defined in Clause 178, and specifies 200 Gb/s operation using 4-level PAM over one differential paths in each direction. The 400GBASE-KR2 embodiment employs the PCS defined in Clause 119, the PMA defined in Clause 176, and the PMD defined in Clause 178, and specifies 400 Gb/s operation using 4-level PAM over two differential paths in each direction. The 800GBASE-KR4 embodiment employs the PCS defined in Clause 172, the PMA defined in Clause 176, and the PMD defined in Clause 178, and specifies 800 Gb/s operation using 4-level PAM over four differential paths in each direction. The 1.6TBASE-KR8 embodiment employs the PCS defined in Clause 175, the PMA defined in Clause 176, and the PMD defined in Clause 178, and specifies 1.6 Tb/s operation using 4-level PAM over eight differential paths in each direction."

Proposed Response *Response Status* **W**

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

Cl **69** *SC* **69.2.3** *P* **128** *L* **50** # 474

Slavick, Jeff Broadcom

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

Changes to 69.2.3 are missing.

SuggestedRemedy

Add reference to Table 174-3 to the last paragraph of 69.2.3 as ameded by 802.3df.

Proposed Response *Response Status* **W**

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

Cl **69** *SC* **69.4** *P* **128** *L* **50** # 475

Slavick, Jeff Broadcom

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

The delay constrain references are missing.

SuggestedRemedy

Add the following 69.3 in the appropriate locations:

For 200GBASE-KR1, normative delay specifications may be found in 117.1.4, 119.5, 176.8, and 178.6, and also referenced in 80.4.

For 400GBASE-KR2, normative delay specifications may be found in 117.1.4, 119.5, 176.8, and 178.6, and also referenced in 80.4.

For 800GBASE-KR4, normative delay specifications may be found in 170.1.4, 172.5, 176.8, and 178.6, and also referenced in 169.4.

For 1.6TBASE-KR4, normative delay specifications may be found in 170.1.4, 175.5, 176.8, and 178.6, and also referenced in 174.4.

Proposed Response *Response Status* **W**

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

Cl **69** *SC* **69.5** *P* **128** *L* **50** # 476

Slavick, Jeff Broadcom

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

Add dj clauses to the list of clauses the PICS cover. It appears we insert only the "FEC" and "PMD" Clauses in this list.

SuggestedRemedy

Insert in the list of Clauses in the first paragraph of 69.5 as amended by 802.3df: "Clause 175, Clause 178,"

Proposed Response *Response Status* **W**

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

Cl **73** *SC* **73.6.2.4** *P* **134** *L* **1** # 477

Slavick, Jeff Broadcom

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

The table is showing up on the next page which is fine, but the next section begins first and table inserts itself in the middle of list.

SuggestedRemedy

Can you force the table to occur before the next sub-section?

Proposed Response *Response Status* **W**

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

Cl **178** *SC* **178.9.2.4** *P* **364** *L* **35** # 478

Healey, Adam Broadcom, Inc.

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

"The reference value [...] is calculated based on the receiver package class to which the device adheres." SInce this subclause is about transmitter difference steady-state voltage, it seems that the calculation should be based on the transmitter package class.

SuggestedRemedy

Change "receiver" to "transmitter".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.10.1** *P* **371** *L* **1** # 479

Healey, Adam Broadcom, Inc.

Comment Type **E** *Comment Status* **D** *ectrical) (bucket) COM MLSD*

"The maximum likelihood sequence detection (MLSD) defined in 178A.1.10 is to be used for the calculation of COM." Now that Table 178-12 includes a parameter that indicate whether or not maximum likelihood sequence detection is included, this statement has become redundant.

SuggestedRemedy

Remove this sentence. Also remove similar sentences in 179.11.7, 176C.7.1, and 176D.7.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.7.1** *P* **796** *L* **26** # 485

Kimber, Mark Semtech

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

Potentially confusing as this only applies to E1 cases but refers to configurations specified in the AUI and PMD clauses. There is a comment in the O1 table stating it should be ignored on receipt. It would be better to also state in this text that it refers only to E1.

SuggestedRemedy

Change
The initial condition request bits are used to select one of the up to six predefined transmitter equalizer configurations (presets) specified in the AUI annexes or PMD clauses.
To
Only applies for E1 intefaces. The initial condition request bits are used to select one of the up to six predefined transmitter equalizer configurations (presets) specified in the AUI annexes or PMD clauses.

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.7.5** *P* **796** *L* **50** # 486

Kimber, Mark Semtech

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

Potentially confusing as this only applies to E1 cases. There is a comment in the O1 table stating it should be ignored on receipt. It would be better to also state in this text that it refers only to E1.

SuggestedRemedy

Change
The coefficient select bits are used to identify the coefficient that is the target of a coefficient request.
To
Only applies for E1 interfaces. The coefficient select bits are used to identify the coefficient that is the target of a coefficient request....

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.7.6** *P* **797** *L* **1** # 487

Kimber, Mark Semtech

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

SuggestedRemedy

Change
The coefficient request bits are used to change the value of the coefficient specified by the coefficient select
bits.
To
Only applies to E1 interfaces. The coefficient request bits are used to change the value of the coefficient specified by the coefficient select
bits.

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.14.3** *P* **806** *L* **1** # 499

Dudek, Mike Marvell

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

The Path ready descriptions apply to both E1 and O1 interfaces. It would read better if these paragraphs were placed before the paragraph that describes the different behaviour.

SuggestedRemedy

Move the first paragraph to after the 3rd paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.3.1** *P* **807** *L* **44** # 500

Dudek, Mike Marvell

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

"Correspondent" is strange. "Corresponding" is better, as used in the base document in multiple places e.g. 73.7.6 first paragraph

SuggestedRemedy

Change "correspondent" to "corresponding" here and on line 48.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.9.5.3.3** *P* **407** *L* **11** # 501

Dudek, Mike Marvell

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

The host channel as defined in 179A.4 includes the package and connector. Listing the host channel and package separately could lead to double counting. Partial host channel model is what this is called in Table 179-16.

SuggestedRemedy

Change "using the receiver host channel, package, and device termination models" to "using the receiver partial host channel, package, and device termination models. Also in C2M on page 757 line 34.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In item a of 179.9.5.3.3, change from
"using the receiver host channel, package, and device termination models"
to
"using the receiver partial host channel, package, and device termination models".
In item a of 176D.8.12.2, change from
"using the host channel, device package, and device termination models"
to
"using the partial host channel, package, and device termination models".

Cl **176D** *SC* **176D.6.6** *P* **747** *L* **36** # 505

Dudek, Mike Marvell

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

The input specifications are best measured at the input to the compliance board as is specified in 176D.6.1 page 744 line 23 and as is done for the host in section 176D.6.5 not at TP1a. (Note however that 176D.8.10 specifically calls out AC common mode voltage tolerance at TP1a).

SuggestedRemedy

Change from "specifications at TP1a" to "Specifictions at TP1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #141.

Cl **179A** *SC* **179A.5** *P* **819** *L* **8** # 509

Dudek, Mike Marvell

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

Figure 179A-3 does not show the maximum insertion loss of the cable assembly assembly and maximum insertion loss of the cable. There is no illustration of this as there are multiple combinations possible and the maximum values of all the items listed is not simultaneously allowed.

SuggestedRemedy

Change "and is illustrated in Figure 179A-3" to "and is illustrated for the HN to HN channel in Figure 179A-2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The first reference to Figure 179A-3 in the second paragraph of 179A.5 is incorrect, since the text describes the maximum insertion loss, but the figure shows the minimum loss budget, which is described later in the paragraph (the second reference is correct).
Delete the first instance of "and illustrated in Figure 179A–3" and insert the following sentence instead: "An example of the channel loss allocation for the HN-to-HN link configuration is illustrated in Figure 179A-2".
Delete the final sentence "The HN-to-HN link configuration is illustrated in Figure 179A–2."
Implement with editorial license.

Cl **179A** *SC* **179A.7** *P* **822** *L* **13** # 510

Dudek, Mike Marvell

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

Figure 179A-3 does not show that Device package models are included in the TP0d and TP5d channels and there are no such things as TP0d and TP5d channels which are test point.

SuggestedRemedy

Either delete the sentence "Device package models are included in the TP0d and TP5d channel (Figure 179A–3);" or replace it with "Device package models are included in the TP0d to TP5d channel (Figure 179-2)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The fact that the TP0d-TP5d channel includes the packages does not need to be accompanied by a figure. These test points are referenced many times in Annex 179A. However, their definition is in 179.8.1 and is not explicitly referenced.

In 179A.7, change
"Device package models are included in the TP0d and TP5d channel (Figure 179A–3)"
to "Device package models are included in the TP0d-to-TP5d channel".
In 179A.1, change
"TP0d and TP5d test points are illustrated in the 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8 link block diagram of Figure 179–2"
to "TP0d and TP5d are defined in 179.8.1 and illustrated in Figure 179–2".

Cl **179B** *SC* **179B.2** *P* **823** *L* **29** # 511

Dudek, Mike Marvell

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

The TP2 and TP3 test points are not well illustrated in Figure 179-2 as it does not really show

SuggestedRemedy

Add "and figure 179A-1" after Figure 179-2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Figure 179-2 does not show the test fixtures where TP2 and TP3 are defined (HCBs), so it is not a good reference.
Change the reference from Figure 179-2 to Figure 179A-1.

Cl **179B** *SC* **179B.4.6** *P* **829** *L* **26** # 517

Dudek, Mike Marvell

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

Incomplete sentence (no verb)

SuggestedRemedy

Change "voltage determined" to "voltage is determined"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179B** *SC* **179B.4.6** *P* **830** *L* **14** # 518

Dudek, Mike Marvell

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

missing letter

SuggestedRemedy

change "th" to "the"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.6** *P* **437** *L* **35** # 521

Dudek, Mike Marvell

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

The positioning and ordering of the lanes at the MDI is not specified in 180.9.

SuggestedRemedy

Change the reference from 180.9 to 180A.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180A** *SC* **180A.4.1** *P* **852** *L* **17** # 523

Dudek, Mike Marvell

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

For inter-operability the PMDs on both ends and the fiber cable plant have to match.

SuggestedRemedy

Change "should be used" to "shall be used". Also on page 853 line 47

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185A** *SC* **185A.2.5.2** *P* **866** *L* **7** # 525

Dudek, Mike Marvell

Comment Type **E** *Comment Status* **D** *(Optical) (bucket)*

Unnecessary duplication of "waveforms"

SuggestedRemedy

Delete "as waveforms"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change
"captured waveforms as waveforms as described in Figure 185A–5"
to
"captured waveforms as described in Figure 185A–5"

Cl **179** *SC* **179.9.4.6** *P* **401** *L* **36** # 527

Dudek, Mike Marvell

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket) jitter*

Poor wording. Obviously the transmitter output of the lane under test shouldn't be disabled but it would be better to be more precise.

SuggestedRemedy

Change "transmitter output is" to transmitter outputs of the lanes not under test are"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174** *SC* **174.1.4** *P* **248** *L* **32** # 528

Dudek, Mike Marvell

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

Clause 73 auto-negotiation is missing from the electrical Phys in table 174-3. (Compare table 169-2 and tables 116-3 amd 116-3a.

SuggestedRemedy

Add it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.4.3** *P* **130** *L* **27** # 538

Levin, Itamar Altera corp.

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

20msec are allocated for the signals at the MDI to conform to all of the PHY specifications when the PHY is connected to the MDI through the "Transmit Switch function". The clause is not clear about the event that starts this time period.

SuggestedRemedy

State in line 27 "When a PHY is connected to the MDI through the Transmit Switch function, the signals at the MDI shall
conform to all of the PHY specifications within 20 ms of the AN-GOOD_CHECK state entry.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The relevant state name is "AN_GOOD_CHECK".
Implement suggested remedy with editorial license.

Cl **120F** *SC* **120F.1** *P* **662** *L* **1** # 539

Levin, Itamar Altera corp.

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

In light of the approved channel reach for C2C it may not be sufficient to content with optional TXEQ. There are different TX tuning mechanisms in C2C and C2M and also in the functional specifications (see 176C.3) which may cause confusion.

SuggestedRemedy

Align this sub-clause with annex 176C.3 functional specification

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Annex 120F is for C2C at 100 Gb/s per lane and was added by 802.3ck-2022.
In 802.3ck, the 1.6TAUI-16 C2C maximum IL recommendation is 20 dB at 26.56 GHz (120F.4) and Tx equalization is included in the electrical specifications (120F.3.1.5).
This amendment adds a 16-lane interface, 1.6TAUI-16, but does not change any of the specifications other than the width.

Cl **176C** *SC* **176C.7.1** *P* **734** *L* **9** # 540

Levin, Itamar Altera corp.

Comment Type **T** *Comment Status* **D** *Electrical) (bucket) COM FFE*

The table says the highest allowed tap index is 56 while footnote (b) says the latest post-cursor position for a floating tap is 50. Given that the number of flating taps per group is 4, there is a discerpency between the comment and highest allowed tap index

SuggestedRemedy

either fix the comment and highest index to be 54 or add clarifying text in the comment explaining the aparent discerpency.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Tap index 1 is the first precursor tap, and there are 5 precursor + 1 cursor (main) taps.
Thus tap index 56 is the 50th postcursor tap, as in the footnote.
See <https://ieee802.org/3/dj/public/25_01/ran_3dj_01_2501.pdf#page=24>.

Cl **176D** *SC* **176D.8.6** *P* **753** *L* **36** # 541

Levin, Itamar Altera corp.

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

There is no preset that has a different than 0 precursor c(1). Also - the initialize and preset 6 are exactly the same.

SuggestedRemedy

Consider a preset with c(1) <> 0. this may help with CDR locking on some channels. Also consider to remove preset 6 or add a comment in this clause explaining why it was added

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Preset #6 was added by the response to comment #125 against D1.3, see <https://www.ieee802.org/3/dj/comments/D1p3/8023dj_D1p3_comments_final_clause.pdf#page=69>, and the related presentation <https://www.ieee802.org/3/dj/public/25_01/simms_3dj_01a_2501.pdf>. The motivation for adding "initialize" as a separate row is explained in slides 12-20 the related presentation <https://www.ieee802.org/3/dj/public/25_01/ran_3dj_01_2501.pdf>. For AUIs "initialize" is identical to preset 6, but for PMDs it is identical to preset #1. These presets can be requested using the ILT protocol, e.g. to return to the initial value, without having "initialize" as a separate request.

The defined presets follow earlier PAM4 specifications (clause 136, used for 50 and 100 Gb/s) that had zero postcursor c(1) for all presets.
Note that changes to c(1) can be requested using ILT (which has an initial PAM2 pattern that may be used for CDR locking).

The comment does not provide sufficient justification to support the suggested remedy.
The proposed change does not contain sufficient detail to implement.

Cl **179B** *SC* **179B.4.6** *P* **830** *L* **14** # 544

Schreiner, Stephan — Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

missing "e" at the end of "the"

SuggestedRemedy

change "th" to "the"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.5** *P* **58** *L* **28** # 545

Schreiner, Stephan — Rosenberger Hochfrequenztechnik GmbH & Co. KG

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

RLdc and RLcd are mentioned in the abbreviations. Howerver ILdc and ILcd are not mentioned. TCL / LCL and TCTL / LCTL would be also a typical name for the conversion parameters

SuggestedRemedy

Add ILdc and ILcd into the abbreviations or change "RLdc, RLcd, ILdc, and ILcd" into "TCL, LCL, TCTL, and LCTL" within the document

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add the following abbreviations:
ILcd differential-mode to common-mode insertion loss
ILdc common-mode to differential-mode insertion loss

Cl **45** *SC* **45.2.1.168c** *P* **96** *L* **46** # 554

Nicholl, Shawn — AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

In the first row of Table 45-133c the Bit(s) column contains 1.1476.15:9 text.

SuggestedRemedy

Propose 1.1477.15:9 in the first row of Table 45-133c in the Bit(s) column.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.168d** *P* **97** *L* **13** # 555

Nicholl, Shawn — AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Currently, in the 1.1478.13 row, the Description column contains some incorrect text that is carried over from another table.

1 = PCS lane synchronization is complete. This bit indicates that all_locked_mux is true and deskewed
0 = local_rx_ready or remote_rx_ready is false on any lane of the interface

SuggestedRemedy

Propose the following text:

1 = PCS lane synchronization is complete. This bit indicates that all_locked_mux is true and deskew is complete.
0 = PCS lane synchronization is not complete.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.216** *P* **101** *L* **33** # 556

Nicholl, Shawn — AMD

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Missing a space in Table 45-180, row 1.2200.4 description column.

Current text: "1 =IFEC decoder"

SuggestedRemedy

Proposed text: "1 = IFEC decoder"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.216** *P* **101** *L* **24** # 557

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Missing a note that this Table 45-180 was amended in 802.3ck-2022.

Missing a new section after the table that describes the new field that is added to the table in P802.3dj.

SuggestedRemedy

Proposed text: "Change Table 45-180 (as amended by IEEE Std 802.3ck-2022) as follows:"

Also propose to add new section:

Insert 45.2.1.216aa before 45.2.1.216.a as follows:

45.2.1.216.aa IFEC degraded SER enable (1.2200.4)

Bit 1.2200.4 enables the IFEC decoder to indicate the presence of a degraded SER when the ability is supported. When set to a one, this variable enables degraded SER detection. When set to a zero, degraded SER detection is disabled. Writes to this bit are ignored and reads return a zero if the IFEC does not have the ability to signal the presence of a degraded SER.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.217.6a** *P* **103** *L* **3** # 558

Nicholl, Shawn AMD

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

802.3-2022 Clause 152 defines the Inverse RS-FEC sublayer for 100GBASE-R, 100GBASE-P, and 100GBASE-Z PHYs. Sub-Clause "152.6 Inverse RS-FEC MDIO function mapping" contains many references to IFEC. "Table 152-2 -- MDIO/Inverse RS-FEC status variable mapping" contains references to 1.2201 register.

P802.3dj Sub-Clause "186.7 Management variables" also contains references to IFEC. "Table 186-8 -- 800GBASE-ER1 FEC status variables and MDIO mapping" contains references to 1.2201 register.

Since there are (at least) two IFEC receivers (i.e. one that is described in Clause 152 and one that is describe in Clause 186), it would help the reader to enhance the description found in "45.2.1.217.6a IFEC received local degraded (1.2201.5)" to clarify that this field pertains only to the Clause 186 IFEC. Same comment for "45.2.1.217.6b IFEC received remote degraded (1.2201.4)".

SuggestedRemedy

Proposed text (for 45.2.1.217.6a): "Bit 1.2201.5 is set to one when the 800GBASE-ER1 IFEC receiver detects the value ... consecutive 800GBASE-ER1 FEC frames. Bit 1.2201.5 is set to zero ..."

Note that in the above text, besides adding "800GBASE-ER1", it is also necessary to correct the typo 1.2201.4 (current text) to 1.2201.5 (proposed text).

Proposed text (for 45.2.1.217.6b): "Bit 1.2201.4 is set to one when the 800GBASE-ER1 IFEC receiver detects the value ... consecutive 800GBASE-ER1 FEC frames. Bit 1.2201.4 is set to zero ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.222** *P* **104** *L* **8** # 559

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

With the inclusion of lanes up to lane 31, the legacy text no longer reads smoothly in the P802.3dj draft.

Current text: "FEC lane 1, lower 16 bits are shown in register 1.2212; FEC lane 1, upper 16 bits are shown in register 1.2213; FEC lane 2, lower 16 bits are shown in register 1.2214; through register 1.2217 for FEC lane 3, upper 16 bits; and so on."

SuggestedRemedy

Current text: "FEC lane 1, lower 16 bits are shown in register 1.2212; FEC lane 1, upper 16 bits are shown in register 1.2213; FEC lane 2, lower 16 bits are shown in register 1.2214; FEC lane 2, upper 16 bits are shown in register 1.2215; etc."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.258** *P* **109** *L* **22** # 560

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Sub-Clause "177.5.5 Inner FEC decode" defines Inner_FEC_corrected_cw_counter, Inner_FEC_uncorrected_cw_counter, Inner_FEC_total_bits_counter, and Inner_FEC_corrected_bits_counter. "Table 177-8 -- Inner FEC status variables and MDIO mapping" also uses these terms.

Currently, the description column of "Table 45-212h -- Inner FEC corrected codewords counter bit definitions" contains FEC_corrected_cw_counter. And the Name column contains "FEC corrected codewords". It is inconsistent with Sub-Clause 177 as it is missing the word "Inner" in both columns.

The same issue exists in "Table 45-212i -- Inner FEC uncorrected codewords counter bit definitions", "Table 45-212j -- Inner FEC total bits register bit definitions", and "Table 45-212k -- Inner FEC corrected bits register bit definitions".

SuggestedRemedy

Propose updating the description column of "Table 45-212h -- Inner FEC corrected codewords counter bit definitions" to Inner_FEC_corrected_cw_counter and the Name column to "Inner FEC corrected codewords".

Propose similar updates in "Table 45-212i -- Inner FEC uncorrected codewords counter bit definitions", "Table 45-212j -- Inner FEC total bits register bit definitions", and "Table 45-212k -- Inner FEC corrected bits register bit definitions".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.262** *P* **111** *L* **12** # 562

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Currently, the description column of "Table 45-212l -- Inner FEC codeword error bin register definitions" contains inner_FEC_codeword_error_bin_0 through inner_FEC_codeword_error_bin_4, while "Table 177-8 -- Inner FEC status variables and MDIO mapping" contains Inner_FEC_codeword_error_bin_k. In other words, the first letter is capitalized in one case, but not in the other case.

SuggestedRemedy

Propose updating the description column of "Table 45-212l -- Inner FEC codeword error bin register definitions" to contain Inner_FEC_codeword_error_bin_0 through Inner_FEC_codeword_error_bin_4 to enhance searchability of the document.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
When referring to the Inner FEC sublayer the "I" in "Inner" should be capitalized.
Capitalize the word "Inner" in the entries in the description column, that is change "inner" to "Inner".

Cl **169** *SC* **169.3.2** *P* **191** *L* **17** # 563

Nicholl, Shawn AMD

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

Current text: "... between the Inner FEC or Segmented FEC, and the PMA, PCS ..."

This is the first (and only) mention of "Segmented FEC" in P802.3dj document.

SuggestedRemedy

Proposed text: "... between the Inner FEC or 800GBASE-ER1 FEC and the PMA, PCS ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to commet #168.

Cl **169** *SC* **169.3.2** *P* **193** *L* **38** # 564

Nicholl, Shawn AMD

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

There is no figure showing 800GBASE-R inter-sublayer service interfaces including 800GBASE-ER1 FEC.

SuggestedRemedy

After "Figure 169-2a-800GBASE-R inter-sublayer service interfaces including 800GBASE-R Inner FEC" add a new figure "800GBASE-R inter-sublayer service interfaces including 800GBASE-ER1 FEC".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The paragraph on page 191 line 26 points to Figure 187-2, which indeed includes the 800GBASE-ER1 FEC sublayer and the FEC service interface above.

Cl **169** *SC* **169.5** *P* **199** *L* **1** # 565

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Text above "Figure 169-5 -- 800GBASE-R Skew points for a PHY with two 800GAUI-n" contains a typo.

Current text: "Replace Figure 169-4 with the following figure:"

SuggestedRemedy

Proposed text: "Replace Figure 169-5 with the following figure:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.1** *P* **211** *L* **24** # 566

Nicholl, Shawn AMD

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

In the legend for Figure 171-1 -- "800GXS and 1.6TXS relationship to the ISO/IEC Open System Interconnection (OSI) reference model and the IEEE 802.3 Ethernet model" several lines are wrapping onto a second line. It decreases readability.

Currently "1.6TAUI-n = 1.6 Tb/s n-LANE ATTACHMENT UNIT INTERFACE" is wrapping.
Currently "800GAUI-n = 800 Gb/s n-LANE ATTACHMENT UNIT INTERFACE" is wrapping.

SuggestedRemedy

Propose the following text:

Option1) Propose modifying the legend to move the second column (i.e. DTE, MAC, MDI, etc.) further to the right. That should allow space to avoid the text wrap. See "Figure 171-3a -- Example 1.6TBASE-R PMA layering with 1.6TXS" for an example of this solution.

Option2) Propose using the term AUI in the legend of the figure. The term AUI is already defined in Sub-Clause 1.4.198 "Attachment Unit Interface (AUI)" of 802.3-2022. In other words, for Figure 171-1, propose the legend say "1.6TAUI-n = 1.6 Tb/s n-LANE AUI" and "800GAUI-n = 800 Gb/s n-LANE ATTACHMENT UNIT INTERFACE". Optionally (if deemed necessary by the editors), add a new entry (above DTE) "AUI = ATTACHMENT UNIT INTERFACE" to the legend.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Rearrange appropriately to fix the text wrap.

Cl **176** *SC* **176.8** *P* **318** *L* **7** # 567

Nicholl, Shawn AMD

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

The entries in "Table 176-7 -- Delay constraints" also pertain to 200GBASE-R, 400GBASE-R, and 1.6TBASE-R. They don't just pertain to 800GBASE-R.

Current text: "... the definitions for bit times and pause_quanta can be found in 169.4."

SuggestedRemedy

Proposed text: "... the definitions for bit times and pause_quanta can be found in 116.4, 169.4, and 174.4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change from
"... the definitions for bit times and pause_quanta can be found in 169.4"
to
"... the definitions for bit times and pause_quanta can be found in 116.4, 169.4, and 174.4".

Cl **177** *SC* **177.5.5** *P* **338** *L* **31** # 568

Nicholl, Shawn AMD

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Current text: "The decoder is expected to correct all codewords with one bit error. It may also be able to correct ..."

The current sentence, although containing no language that indicates a mandatory requirement, might be interpretted by readers as a requirement.

It is preferred to clarify the language as improved soft-decision decoder performance (gain) may be obtained by an implementation that is not bound by a rule to correct all codewords with one bit error

SuggestedRemedy

Referring to 802.3-2022 Sub-Clause "1.1.6 Word usage", perhaps the word "should" provides sufficient clarity.

Proposed text: "The decoder should correct all codewords with one bit error. It may also be able to correct ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.5.5** *P* **339** *L* **6** # 569

Nicholl, Shawn AMD

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

Current text: "... when fas_lock is true (k = 0 to 3). For example, if an Inner FEC codeword has exactly two bits corrected, then Inner_FEC_codeword_error_bin_2 is incremented. Error bin 3 increments when three or more bits are corrected in an Inner FEC codeword."

The text in Sub-Clause "177.5.5 Inner FEC decode" is inconsistent with "Table 45-212l -- Inner FEC codeword error bin register definitions". The MDIO register contains bin_0 through bin_4.

SuggestedRemedy

Proposed text: "... when fas_lock is true (k = 0 to 4). For example, if an Inner FEC codeword has exactly two bits corrected, then Inner_FEC_codeword_error_bin_2 is incremented. Error bin 4 increments when four or more bits are corrected in an Inner FEC codeword."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The max bin for Clause 184 Inner FEC is 4, and the max bin for Clause 177 Inner FEC is 3. The two sets of bin counters share the same MDIO register sets. The text was correct as written.

Cl **177** *SC* **177.10** *P* **346** *L* **47** # 571

Nicholl, Shawn AMD

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

In the "Status variable" column of the "Inner_FEC_codeword_error_bin_k (Inner FEC lane 0)" row of "Table 177-8 -- Inner FEC status variables and MDIO mapping", it is not obvious what is meant by 'k'.

Same issue is observed for rows "Inner_FEC_codeword_error_bin_k (Inner FEC lane 1)" through "Inner_FEC_codeword_error_bin_k (Inner FEC lane 7)".

SuggestedRemedy

Propose that in the "Status variable" column of the "Inner_FEC_codeword_error_bin_k (Inner FEC lane 0)" row of "Table 177-8-Inner FEC status variables and MDIO mapping" add text "(k = 0 to 4)".

Propose that in each of rows "Inner_FEC_codeword_error_bin_k (Inner FEC lane 1)" through "Inner_FEC_codeword_error_bin_k (Inner FEC lane 7)" also add the text "(k = 0 to 4)".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
In Table 177-8 there is a reference to the defintion of the status variable "Inner_FEC_codeword_error_bin_k" (to subclause 177.5.5), and this definition defines the range for k.

Cl **184** *SC* **184.10** *P* **551** *L* **47** # 572

Nicholl, Shawn AMD

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

In the "MDIO register/bit number" column of the Inner_FEC_codeword_error_bin_0 row of "Table 184-5 -- Inner FEC status variables and MDIO mapping", the MDIO bit indices are unnecessarily mentioned.

There are only 16 bits in an MDIO register, thus "15:0" is implied and does not need to be mentioned. Also, other rows (eg. test_block_error_bin_0_16p) of the same table don't include the "15:0". Also, Table 177-8 excludes the "15:0" for the exact same MDIO registers.

SuggestedRemedy

Propose "MDIO register/bit number" column of the Inner_FEC_codeword_error_bin_0 row of "Table 184-5 -- Inner FEC status variables and MDIO mapping", contain "1.2424," and "1.2425" on two lines.

Same comment for Inner_FEC_codeword_error_bin_1 through Inner_FEC_codeword_error_bin_4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **120F** *SC* **120F.1** *P* **663** *L* **38** # 573

Nicholl, Shawn AMD

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

The legend for "Figure 120F-1 -- Example 100GAUI-1, 200GAUI-2, 400GAUI-4, 800GAUI-8, and 1.6TAUI-16 C2C relationship to the ISO/IEC Open System Interconnection (OSI) reference model and the IEEE 802.3 Ethernet model" is quite noisy (cluttered).

Readability could be enhanced with a more concise approach.

SuggestedRemedy

In the left-hand column of the legend, propose replacing "ATTACHMENT UNIT INTERFACE" with "AUI", replacing "MEDIA INDEPENDENT INTERFACE" with "MII", and replacing "PHYSICAL MEDIUM ATTACHMENT" with "PMA".

In the right-hand column of the legend propose adding "AUI = ATTACHMENT UNIT INTERFACE", adding "MII = MEDIA INDEPENDENT INTERFACE", adding "PMA = PHYSICAL MEDIUM ATTACHMENT".

There are other Figures throughout P802.3dj (especially in the Annexes) whose legend could be improved in a similar manner.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Figure 120F-1 exists in the base standard 802.3df and was only modified to add the new 1.6TAUI-16 C2C.
The suggested changes (in 120F and elsewhere in the draft) would make the figures different from numerous similar figures in existing clauses, would require significant editorial work and would not substantically improve the clarity of the figure.
Also, the suggested definitions for "AUI" and "MII" are inconsistent with existing defintions of these terms in 1.4.198 and 1.4.393, which are specific to 10 Mb/s and 100 Gb/s, respectively.

Cl **174A** *SC* **174A.8.1.3** *P* **681** *L* **19** # 574

Nicholl, Shawn AMD

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

Current text: "... defined as follows:
- Hm (i)(k) where k < 16 is the is the probability of k test symbol errors in a test block for lane i.
- Hm (i)(16) is the probability of more than 15 test symbol errors in a test block for lane i."

SuggestedRemedy

Propose deleting the duplicate text ("is the is the") and align the text with 174A.8.1.2 and 174A.8.1.4 Sub-Clauses.

Propose the following text:

Option1 (most preferred by commenter): Introduce the term "ratio".

Proposed text: "... defined as follows:
- Hm (i)(k) where k < 16 is the ratio (to total number of test blocks analyzed) of k test symbol errors in a test block for lane i.
- Hm (i)(16) is the ratio (to total number of test blocks analyzed) of 16 or more test symbol errors in a test block for lane i."

Option2 (less preferred by commenter): Retain the term "probability".

Proposed text: "... defined as follows:
- Hm (i)(k) where k < 16 is the probability of k test symbol errors in a test block for lane i.
- Hm (i)(16) is the probability of 16 or more test symbol errors in a test block for lane i."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The current text is not incorrect after addressing the repeating text "is the".
Proposed option 2 is more helpful as it relates the definition to 16 errors rather than 15.
The H_m is indeed calculated as a ratio per the desciption in Option 1 but the result is the probability and this is the quality that we use to determine the statistics.
Implement option 2 in the suggested remedy with editorial license.

Cl **174A** *SC* **174A.8.1.4** *P* **681** *L* **50** # 575

Nicholl, Shawn AMD

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

Current text: "... are 17-bin error histograms representing a count of the number of test blocks with k test symbol errors for k < 16 and a count of the number of test blocks with 16 or more test symbol errors for k = 16."

Reading this text, it sounds like these histograms are simply error counts, while an earlier section defined them as a ratio between error counts and total count.

SuggestedRemedy

Propose the following text:

Option1 (most preferred by commenter): Introduce the term "ratio".

Proposed text: "... are 17-bin error histograms representing the ratio (to total number of test blocks analyzed) of test blocks with k test symbol errors for k < 16 and the ratio (to total number of test blocks analyzed) of test blocks with 16 or more test symbol errors for k = 16.

Option2 (less preferred by commenter): Retain the term "probability".

Proposed text is: "... are 17-bin error histograms representing the probability of k test symbol errors in a test block for k < 16 and the probability of 16 or more test symbol errors in a test block for k = 16.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement option #2 (aligning the wording with 174A.8.1.3) in the suggested remedy with editorial license.

Cl **174A** *SC* **174A.8.1.5** *P* **682** *L* **17** # 576

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Current text: "For each lane i, measure the error histogram Hm(k) (see 174A.8.1.3) and assign Hm(k) to Hm (i)(k)." However, 174A.8.1.3 does not define Hm(k) -- rather it defines Hm(i)(k).

SuggestedRemedy

Propose to make the text more concise.

Proposed text: "For each lane i, measure the error histogram Hm(i)(k) (see 174A.8.1.3)."

Proposed Response *Response Status* **W**

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

Cl **174A** *SC* **174A.8.1.6** *P* **682** *L* **37** # 577

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Current text: "For each lane i, measure the error histogram Hm(k) (see 174A.8.1.3) and assign Hm(k) to Hm (i)(k)." However, 174A.8.1.3 does not define Hm(k) -- rather it defines Hm(i)(k).

SuggestedRemedy

Propose to make the text more concise.

Proposed text: "For each lane i, measure the error histogram Hm(i)(k) (see 174A.8.1.3)."

Proposed Response *Response Status* **W**

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

Cl **174A** *SC* **174A.8.1.7** *P* **683** *L* **2** # 578

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Current text: "a) For each lane i, measure the error histogram Hm(k) (see 174A.8.1.3)." However, 174A.8.1.3 does not define Hm(k) -- rather it defines Hm(i)(k).
Current text: "d) ... hconv(He(k) , Hm(k)) (see ..."

SuggestedRemedy

Propose to make the text more concise.

Proposed text: "a) For each lane i, measure the error histogram Hm(i)(k) (see 174A.8.1.3)."
Proposed text: "d) ... hconv(He(k) , Hm(i)(k)) (see ..."

Proposed Response *Response Status* **W**

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

Cl **174A** *SC* **174A.9** *P* **683** *L* **18** # 579

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

In the "174A.9 Error ratio tests for 800GBASE-LR1 ISLs", the text current says "... between a pair of 200GBASE-LR1 Inner FEC sublayers ...".

SuggestedRemedy

Propose to replace with "... between a pair of 800GBASE-LR1 Inner FEC sublayers ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #108.

Cl **1** *SC* **1.4.92i** *P* **54** *L* **46** # 580

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Current text: "... using the physical coding sublayer defined in Clause 175 for 1.6 Tb/s operation. (See IEEE Std 802.3, Clause 174.)"

Propose pointing to the correct Clause number.

SuggestedRemedy

Proposed text: "... using the physical coding sublayer defined in Clause 175 for 1.6 Tb/s operation. (See IEEE Std 802.3, Clause 175.)"

Proposed Response *Response Status* **W**

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

Cl **1** *SC* **1.4.92g** *P* **54** *L* **40** # 581

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Common) (bucket)*

Currently, the definitions of 1.6TBASE-DR8-2, 200GBASE-DR1-2, 400GBASE-DR2-2, 800GBASE-DR4-2 incorrectly point to Clause 181. They should point to Clause 182.

SuggestedRemedy

1.4.92g 1.6TBASE-DR8-2: IEEE 802.3 Physical Layer ... least 2 km. (See IEEE Std 802.3, Clause 182.)
1.4.104a 200GBASE-DR1-2: IEEE 802.3 Physical Layer ... least 2 km. (See IEEE Std 802.3, Clause 182.)
1.4.134c 400GBASE-DR2-2: IEEE 802.3 Physical Layer ... least 2 km. (See IEEE Std 802.3, Clause 182.)
1.4.184ca 800GBASE-DR4-2: IEEE 802.3 Physical Layer ... least 2 km. (See IEEE Std 802.3, Clause 182.)

Proposed Response *Response Status* **W**

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

Cl **45** *SC* **45.2.1.60c.1** *P* **82** *L* **21** # 582

Nicholl, Shawn AMD

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Currently, 45.2.1.60c.1 contains the information for 1.74.0 register while 45.2.1.60c.2 contains the information for 1.74.1 register.

The MDIO register definitions sections are typically ordered from bit <n> to bit 0.

SuggestedRemedy

Propose the following text:

45.2.1.60c.1 should contain the information for 1.74.1 register. 45.2.1.60c.2 should contain the information for 1.74.0 register.

In other words, it should read as follows:

45.2.1.60c.1 800GBASE-ER1 ability (1.74.1)

When read as a one, bit 1.74.1 indicates ... as a 800GBASE-ER1 PMA/PMD type. When read as a zero, bit 1.74.1 indicates ... as a 800GBASE-ER1 PMA/PMD type.

45.2.1.60c.2 800GBASE-ER1-20 ability (1.74.0)

When read as a one, bit 1.74.0 indicates ... as a 800GBASE-ER1-20 PMA/PMD type. When read as a zero, bit 1.74.0 ... as a 800GBASE-ER1-20 PMA/PMD type.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The suggested remedy does not provide sufficient justification to support the suggested remedy.
Numbering from bit 0 to bit <n> makes it easier for future amendments to add new ability bits.

Cl **177** *SC* **177.1.1.3** *P* **326** *L* **6** # 583

Nowell, Mark Cisco

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Unlike Clause 184.1.3 which summarizes the functions of that clauses inner FEC, Clause 177.1.3 doesn't include the basic detail that it is a BCH(128,120) encoding/decoding.

For readability and consistency these two subclauses should provide similar information to the reader.

SuggestedRemedy

In clause 177.1.3, include the description that that the inner FEC encoding for Clause 177 is BCH(128,120)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.8.1.2** *P* **681** *L* **3** # 586

Shrikhande, Kapil Marvell

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

Stating "5 consecutive PAM4 symbols" is clear, but then the sentence goes on to say "or, equivalently, 10 consecutive bits" which could be confusing since 10 consecutive bits could come from 6 PAM4 symbols. I believe we want it to be 5 consecutive PAM4 symbols.

SuggestedRemedy

Change the sentence to be "Test symbols are defined as non-overlapping groups of 5 consecutive PAM4 symbols", period. I.e. remove the last part "or, equivalently, 10 consecutive bits".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is some ambiguity in the wording. However, it is helpful to point out that the set of 5 PAM4 symbols is 10 bits since the error checker is working with bits, not directly with PAM4 symbols.
Change: "Test symbols are defined as non-overlapping groups of 5 consecutive PAM4 symbols or, equivalently, 10
consecutive bits."
To: "Test symbols are defined as non-overlapping groups of 5 consecutive PAM4 symbols (10 bits total)."

Cl **178B** *SC* **178B.5.1** *P* **788** *L* **21** # 587

Shrikhande, Kapil Marvell

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

"rx_ready" is not defined before this term is used. rx_ready is used on lines 21 and 23. Presumably rx_ready is receiver ready, which is defined later in clause in 178B.8.1 ?

SuggestedRemedy

Define rx_ready and / or clarify that this variable is same as receiver ready defined in 178B.8.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "waiting for either rx_ready or remote_rts to change"
To: "waiting for either local_rts or remote_rts (see 178B.14.2.1) to change"

Cl **174A** *SC* **174A.3** *P* **677** *L* **35** # 590

Shrikhande, Kapil Marvell

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

In the subclause title "Error ratio allocation for an Ethernet network path", the term "network path" is a bit vague. Network path may mean a multi-hop network path (e.g. End Host to Switch to End host). Should search for a more descriptive term to use instead of "network path". Since the error allocation is from the PLS service interface of one RS to the PLS service interface of the other RS, suggest using "RS-to-RS" ? or MAC-to-MAC ? This is similar to PHY-to-PHY, PCS-to-FEC, etc. terminology used in other sections of this annex.

SuggestedRemedy

Replace "network path" in the subclause title with "RS-to-RS".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Ultimate the path is from MAC to MAC. Also, RS can easily be misinterpreted as meaning RS-FEC.
Change "network path" to MAC-to-MAC path.

Cl **174A** *SC* **174A.5** *P* **678** *L* **17** # 591

Shrikhande, Kapil Marvell

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Cross reference to 174A.6 is missing.

SuggestedRemedy

Add cross reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179B** *SC* **179B** *P* **823** *L* **39** # 602

Kocsis, Sam Amphenol

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

Flip the order of polynomial from decreasing to increasing to align formatting with older clauses.

SuggestedRemedy

Impacted equations: 179B-1, -2, -3, -4, -5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.3.5** *P* **810** *L* **45** # 629

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Subclause 178B.14.1 'State diagram conventions' says that 'The notation used in the state diagrams follows the conventions of 21.5.'. Table 21–1 'State diagram operators' defines the [not equal sign] character as 'Not equals'.

SuggestedRemedy

Change the text 'max_recovery_events !=0' to read 'max_recovery_events [not equal sign] 0'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.3.5** *P* **810** *L* **46** # 630

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Subclause 178B.14.1 'State diagram conventions' says that 'The notation used in the state diagrams follows the conventions of 21.5.'. Table 21–1 'State diagram operators' defines the use of the [greater than or equal sign] character as 'Greater than or equal to'.

SuggestedRemedy

Change the text 'recovery_event_count >= max_recovery_events' to read 'recovery_event_count [greater than or equal sign] max_recovery_events'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.3.1** *P* **808** *L* **2** # 631

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Typo.

SuggestedRemedy

Change '... variable that is set to TRUE when ...' to read '... variable that is set to true when ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.14.2.4** *P* **805** *L* **1** # 633

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Change the title of subclause 178B.14.2.4 'State diagram figures' to read 'State diagram figure' since there is only one state diagram figure in this subclause, Figure 178B–7 'RTS update state diagram'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.15** *P* **813** *L* **50** # 635

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Common) (bucket) ILT*

Suggest that the text 'Bit reference is provided for lane 0, bits for lanes 1 to 3 ...' is split into two sentences.

SuggestedRemedy

Change 'Bit reference is provided for lane 0, bits for lanes 1 to 3 ...' to read 'Bit reference is provided for lane 0. Bits for lanes 1 to 3 ...'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.4.2.1** *P* **610** *L* **35** # 636

Law, David HPE

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

I believe that the FAW field lock state diagram requests a FAW_SLIP, not a SLIP (see the FAW_SLIP state in Figure 186–16 '800GBASE-ER1 PMA FAW field lock state diagram'.

SuggestedRemedy

Suggest that '... the SLIP requested by the FAW field lock state ...' should be changed to read '... the FAW_SLIP requested by the FAW field lock state ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.7.2.2** *P* **547** *L* **2** # 637

Law, David HPE

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

I believe that the e DSP frame lock state diagram requests a SYM_SLIP, not a SLIP (see the SYM_SLIP state in Figure 184–9—DSP 'lock state diagram'.

SuggestedRemedy

Suggest that '... the SLIP requested by the DSP frame lock state ...' should be changed to read '... the SYM_SLIP requested by the DSP frame lock state ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.2** *P* **357** *L* **5** # 638

Li, Mike — Altera (An Intel compnany)

Comment Type **T** *Comment Status* **D** *:lectrical) (bucket) BERadded*

Refer to figure 174A-5,
1.) BERadded is the BER contribution outside of the measured sublayer link.
2.) Measured sublayer link is PCS-to-PCS including PMD and FEC. Both TX-FEC and RX-FEC must be included in the PHY-based measurement. To use FEC decoder, the incoming signal must be encoded (compared with the incoming signal does not need to be encoded to use PMA-based block error measurement).
3.) May the measured link have xMII extender outside this sublayer link (its BER budget is not 8e-6 according to CL-174A.4).
4.) with Table 174A-2, table 174A-3, xMII extender (if used) is not part of CER < 1.45e-11 spec.
5.) Considering all of these, the BERsdded value for CL-178.2 should not be simple 8e-6. Instead, it should be 8e-6 * Number_of_C2C_SubLayerLink outside of the measured sublayer link between the two ends MACs.

SuggestedRemedy

change the BERsdded value from 8e-6 to 8e-6 * Number_of_C2C_SubLayerLink outside of the measured sublayer link between the two ends MACs.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Resolve using the response to comment #639.

Cl **179** *SC* **179.2** *P* **387** *L* **46** # 639

Li, Mike — Altera (An Intel compnany)

Comment Type **T** *Comment Status* **D** *:lectrical) (bucket) BERadded*

Refer to figure 174A-5,
1.) BERadded is the BER contribution outside of the measured sublayer link.
2.) Measured sublayer link is PCS-to-PCS including PMD and FEC. Both TX-FEC and RX-FEC must be included in the PHY-based measurement. To use FEC decoder, the incoming signal must be encoded (compared with the incoming signal does not need to be encoded to use PMA-based block error measurement).
3.) May the measured link have xMII extender outside this sublayer link (its BER budget is not 8e-6 according to CL-174A.4).
4.) with Table 174A-2, table 174A-3, xMII extender (if used) is not part of CER < 1.45e-11 spec.
5.) Considering all of these, the BERsdded value for CL-179.2 should not be simple 8e-6. Instead, it should be 8e-6 * Number_of_C2C_SubLayerLink outside of the measured sublayer link between the two ends MACs.

SuggestedRemedy

change the BERsdded value from 8e-6 to 8e-6 * Number_of_C2C_SubLayerLink outside of the measured sublayer link between the two ends MACs.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
A PHY receiver needs to interoperate with a link partner that may or may not include an AUI-C2C. The expected block error ratio accounts for possible additional errors in an AUI-C2C in the link partner. This is a general expectation from the PHY that is independent of the link partner in a specific link.

Cl **178** *SC* **178.9.2** *P* **361** *L* **48** # 641

Swenson, Norman — Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

The sentence states that specifications must be met at TP0v, but TP0v has not yet been defined.

SuggestedRemedy

Change the sentence to "The transmitter on each lane shall meet the specifications at TP0v (see 178.9.2.1) given …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2.1** *P* **362** *L* **49** # 642

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

"measurements of the transmitter are made at the output of a test fixture (TP0v) as shown in Figure 178–3 and described in Annex 163A" reads like the test fixture is described in Annex163A, which it is not.

SuggestedRemedy

Change to "the transmitter is measured using the methodology described in Annex 163A at the output of a test fixture (TP0v) as
shown in Figure 178–3."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2.1** *P* **362** *L* **49** # 643

Swenson, Norman Nokia, Point2

Comment Type **TR** *Comment Status* **D** *ucket) Tx measurement filter*

Annex 163A describes methods for measuring transmitter characteristics applicable to 802.3ck. Are these same methods applicable here? Annex 163A refers to use of Clause 93A. Is that still applicable here, or should Clause 178A be used instead?

SuggestedRemedy

Please clarify.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The methodology of Annex 163A is aapplicable where Annex 163A is currently referred to.
Annex 178A is not applicable for measuring transmitters.

Cl **178** *SC* **178.9.2.1** *P* **362** *L* **49** # 644

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

"An example test fixture is described in Annex 163B." Annex 163B does not describe an example test fixture. A description of an example test fixture would be a drawing of a physical test fixture, or perhaps a description of a possible implementation of an example fixture. Annex 163B gives example electrical characteristics for a test fixture for which reference values can be calculated. (I am not certain my interpretation is correct and would like clarification.)

SuggestedRemedy

Change to " Annex 163B gives example electrical characteristics of a test fixture for which reference values can be calculated."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.5** *P* **388** *L* **41** # 645

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

The term "pervasive management" does not have a plain and ordinary meaning, nor is it defined anywhere in the document.

SuggestedRemedy

Either drop the word "pervasive" or provide a definition of "pervasive management".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The phrasing used here is consistent with several previous clauses.
However, the word "pervasive" does not seem to be necessary, and the sentence can be simplified.
Change from
"the implementer may employ use of pervasive management or employ a dedicated electrical signal"
to
"the implementer may employ system management or use a dedicated electrical signal".

Cl **179** *SC* **179.8.1** *P* **390** *L* **26** # 646

Swenson, Norman Nokia, Point2

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

TP1 is described as the cable assembly input. I believe it is not the cable assembly input, but rather the input to the cable assembly test fixture that feeds the cable assembly input.

SuggestedRemedy

Change the description of TP1 to "The input of the cable assembly test fixture that feeds the cable assembly input."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description of TP1 is "The cable assembly input (corresponding to MDI signals SLi<p> and SLi<n>) on a cable assembly test fixture".
The test fixture is already addressed and there is no ambiguity.
The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **179** *SC* **179.8.1** *P* **390** *L* **28** # 647

Swenson, Norman Nokia, Point2

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

TP2 is described as the host output. I believe it is not the host output, but rather the output of the TP2 or TP3 test fixture that is fed by thost output.

SuggestedRemedy

Change the description of TP2 to "The output of the TP2 or TP3 test fixture that is fed by the host output."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description of TP2 is "The host output (corresponding to MDI signals SLi<p> and SLi<n>) on a TP2 or TP3 test fixture".
The test fixture is already addressed and there is no ambiguity.
The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **179** *SC* **179.8.1** *P* **390** *L* **30** # 648

Swenson, Norman Nokia, Point2

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

TP3 is described as the host input. I believe it is not the host input, but rather the input to the TP2 or TP3 test fixture that is feeds the host input.

SuggestedRemedy

Change the description of TP3 to "The input of the TP2 or TP3 test fixture that feeds the host input."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description of TP3 is "The host input (corresponding to MDI signals DLi<p> and DLi<n>) on a TP2 or TP3 test fixture".
The test fixture is already addressed and there is no ambiguity.
The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **179** *SC* **179.8.1** *P* **390** *L* **32** # 649

Swenson, Norman Nokia, Point2

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

TP4 is described as the cable assembly output. I believe it is not the cable assembly output, but rather the output of the cable assembly test fixture that is fed by the cable assembly output.

SuggestedRemedy

Change the description of TP4 to "The output of the cable assembly test fixture that is fed by the cable assembly output."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description of TP4 is "The cable assembly output (corresponding to MDI signals DLi<p> and DLi<n>) on a cable assembly
test fixture".
The test fixture is already addressed and there is no ambiguity.
The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **179** *SC* **179.8.1** *P* **390** *L* **37** # 650

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

"The channel between TP0d to TP5d" is grammatically incorrect. It should be "between TP0d and TP5d", or it should be "from TP0d to TP5d".

SuggestedRemedy

Change to "between TP0d and TP5d"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.9.4.1.1** *P* **395** *L* **47** # 651

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

"For each configuration of the transmit equalizer" is not well defined, as no list of required configurations has been mentioned.

SuggestedRemedy

Clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The calculation specified in 179.9.4.1.1 is for a specific configuration of the transmit equalizer, so "for each" is not adequate.
Delete the words "For each configuration of the transmit equalizer" from the second paragraph of of 179.9.4.1.1, and append the words "for a specific configuration of the transmit equalizer setting" to the first paragraph.
Implement with editorial license.

Cl **179** *SC* **179.9.4.1.1** *P* **396** *L* **1** # 652

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

"Compute the linear fit pulse response" using what setting for the equalizer? This is not clear.

SuggestedRemedy

Clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #651.

Cl **179A** *SC* **179A.4** *P* **818** *L* **37** # 656

Swenson, Norman Nokia, Point2

Comment Type **TR** *Comment Status* **D** *ctrical) (bucket) LInk Diagram*

I believe the host channel loss is to include the mated host/cable connector. But the text says "host connector", which is ambiguous.

SuggestedRemedy

Change "host connector" to "mated host/cable connector".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The host channel IL is provided as a recommendation for host design. The host channel includes the host connector up to the mating point, but not the cable connector, which the host designer cannot control.
This is an informative annex; the host channel insertion loss is not a specification and is not expected to be measured. Thus, the exact "endpoint" is not significant.

Cl **179A** *SC* **179A.4** *P* **818** *L* **53** # 657

Swenson, Norman Nokia, Point2

Comment Type **TR** *Comment Status* **D** *ctrical) (bucket) Link Diagram*

The Range(dB) for Host-High (HH) should be 4.45 to 18.95.

SuggestedRemedy

Change 18.5 to 18.95

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The existing number is a typo.
Implement the suggested remedy.

Cl **179B** *SC* **179B.2.1** *P* **824** *L* **12** # 659

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *trical) (bucket) CR test fixture*

Curve label is inconsistent with the text.

SuggestedRemedy

Change ILdd_{catf} to ILdd_{catfref}

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.4.3** *P* **618** *L* **17** # 661

Law, David HPE

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

Since Figure 186–18 is the '800GBASE-ER1 FEC FAM field lock state diagram', it seems that:

[1] The condition from the GET_BLOCK state to the FIND_1ST state should be test_fam.
[2] The condition from the INVALID_FAM state to the 5_BAD state should be fam_bad_count = 5.
[3] The condition from the COMP_2ND state to the 2_GOOD state should be fam_match.

SuggestedRemedy

Change:

[1] The GET_BLOCK state to the FIND_1ST state transition condition from test_amp to test_fam.
[2] The INVALID_FAM state to the 5_BAD state transition condition from amp_bad_count = 5 to fam_bad_count = 5.
[3] The COMP_2ND state to the 2_GOOD state transition condition from amp_match to fam_match.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.4.3** *P* **619** *L* **9** # 662

Law, David HPE

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

The Figure 186–19 800GBASE-ER1 FEC multi-frame alignment state diagram uses the variable fec_mfas_restart, but only fec_mfas_restart_lock is defined in the associated subclause 186.4.2.1 'Variables'.

SuggestedRemedy

Either change the three instances of fec_mfas_restart to read fec_mfas_restart_lock in Figure 186–19, or change fec_mfas_restart_lock to read fec_mfas_restart in subclause 186.4.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update Figure 186-19 as suggested.

Cl **186** *SC* **186.4.3** *P* **620** *L* **4** # 663

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Subclause 186.4.1 'State diagram conventions' says 'The notation used in the state diagrams follows the conventions of 21.5.'. Table 21–1 'State diagram operators' in subclause 21.5 defines the use of the [equal sign] character as ' Equals (a test of equality)'.

SuggestedRemedy

Change the five instances of the text '... == ...' in Figure 186–20 to read '... = ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.4.3.** *P* **620** *L* **39** # 664

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Subclause 186.4.1 'State diagram conventions' says 'The notation used in the state diagrams follows the conventions of 21.5.'. Table 21–1 'State diagram operators' in subclause 21.5 defines the use of the [greater than or equal sign] character as 'Greater than or equal to'.

SuggestedRemedy

Change the text 'zero_aml_cnt >= 5' to read 'zero_aml_cnt [greater than or equal sign] 5' in Figure 186–20 '800GBASE-ER1 FEC Alignment marker location state diagram'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.4.3** *P* **620** *L* **23** # 665

Law, David HPE

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Subclause 186.4.1 'State diagram conventions' says 'The notation used in the state diagrams follows the conventions of 21.5.'. Table 21–1 'State diagram operators' in subclause 21.5 defines the use of the [left arrow] character as the 'Assignment operator'.

SuggestedRemedy

Change the five instances of the use of the characters '<=' as the assignment operator in the states in Figure 186–20 '800GBASE-ER1 FEC Alignment marker location state diagram' to use the [left arrow] character.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **116** *SC* **116.3.2** *P* **156** *L* **14** # 671

Dawe, Piers Nvidia

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

Now that we are used to these generic primitives, the IS_ is redundant

SuggestedRemedy

Remove it, so that we have e.g. PMA:UNITDATA_i.request. This may need a maintenance request.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The "IS_" prefix on these primitives is consistent with multiple generations of PHY types. Although it is not strictly necessary, as the comment points out, it does provide extra information. Within this project it is not possible to change this for 200G, 400G, or 800G Ethernet. Making changes for 1.6T would make the naming inconsistent and would therefore cause more problems than it solves. The proposed change does not improve the clarity or accuracy of the draft.

Cl **116** *SC* **116.3.2** *P* **157** *L* **6** # 672

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

Primitives for other instances, of inter-sublayer interfaces, are

SuggestedRemedy

Too many commas

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove both commas using appropriate editorial mark-up.
Implement with editorial license.

Cl **116** *SC* **116.3.3.3.1** *P* **161** *L* **16** # 673

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *ILT service interface (bucket)*

communication *with* ... lower sublayer

SuggestedRemedy

I think this means from, not with. Needs clarification.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The value okay indicates a two-way communications with the other sublayer is established. Thus "with" is appropriate.

Cl **116** *SC* **116.5** *P* **168** *L* **9** # 674

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

106.25 GBd PMD lane
In footnotes: at PMD lane signaling rate

SuggestedRemedy

106.25 GBd lane ... at lane signaling rate (3 times, presumably not for 113.4375 GBd).
Also in Table 169-6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment is pointing out that the columns and related footnotes (113.4375 GBd excepted) are relevant to AUI lanes as well as PMD lanes, so it should refer generically to "lanes".
Implement the suggested remedy with editorial license.
[Editor's note: CC: 116, 169]

Cl **119** *SC* **119.2.1** *P* **174** *L* **9** # 675

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

data-units

SuggestedRemedy

data units

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It is noted that in the published draft in the context of the service interface, some clauses use "data units" whereas other clauses use "data-units". Clause 119 uses "data-units".

In the second sentence of 119.2.1 change "data units" to "data-units" to be consistent with the first sentence in 119.2.1, and with the rest of subclause 119.2.1 in the published draft.

Cl **120** *SC* **120.1.4** *P* **184** *L* **11** # 677

Dawe, Piers Nvidia

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

Confusion between output and transmit side (possibly also in items 5 and 6)

SuggestedRemedy

Change " the signaling rate range for a ... PMA output" to " the signaling rate range in the transmit direction for a ... PMA"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
For a PMA connected to an xAUI-n in the same "package" as the PCS, the PMA output can only be in the transmit direction. The text is correct as written.

Cl **169** *SC* **169.1.3** *P* **186** *L* **10** # 678

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

800 Gb/s PHY using - they all are, it's in the text that introduces the table, and its title. This table is too long and wordy; it uses sentence construction rather than columns. At least make a start.

SuggestedRemedy

Change "800 Gb/s PHY using" to "Uses"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The reference text is a complete definition of a PHY type. A significant characteristic of the PHY type is that it supports 800 Gb/s data rate. The definition as written is consistent with many other definitions for previously defined PHY types of many different data rates.

Cl **169** *SC* **169.2.4a** *P* **189** *L* **47** # 679

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

The 800 Gb/s Attachment Unit Interface (800GAUI-n) ... . *The* 800GAUI-n is defined for chip-to-chip (C2C) and chip-to-module (C2M) implementations.
The 800GAUI-n C2C *is* specified in Annex 120F and Annex 176C.
The 800GAUI-n C2M *is* specified in Annex 120G and Annex 176D.

SuggestedRemedy

An 800 Gb/s Attachment Unit Interface (800GAUI-n) ... . 800GAUI-n is defined for chip-to-chip (C2C) and chip-to-module (C2M) implementations.
Two types of 800GAUI-n C2C are specified, in Annex 120F and Annex 176C.
Two types of 800GAUI-n C2M are

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text is referring to a particular type, not an instance, of an xGAUI-n , thus "the" rather than "an".
The opening paragraph clearly states that there are two implementation types and the last two paragraphs clear indicate where one might find the specifications.
The proposed changes do not improve the clarity or accuracy of the draft.

Cl **169** *SC* **169.2.4b** *P* **190** *L* **3** # 680

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

In the title: FEC sublayer -> plural, or spell them out

SuggestedRemedy

800GBASE-R Inner FEC, 800GBASE-LR1 Inner FEC and 800GBASE-ER1 FEC sublayers

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The subclause defines a general category of FEC sublayers, similar to the way 169.2.4a defines a set of two 800GAUI-n types. It is clear when reading the content of the subclause that there are multiple types as listed in the suggested remedy.
The proposed change does not improve the clarity or accuracy of the draft.

Cl **169** *SC* **169.3.2** *P* **191** *L* **17** # 682

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

missing commas: the PHY 800GXS above isn't called the PMA service interface

SuggestedRemedy

Insert comma

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add a comma between "800GXS" and "above".

Cl **170** *SC* **170.1** *P* **202** *L* **12** # 683

Dawe, Piers Nvidia

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

This clause defines the characteristics of the Reconciliation Sublayer (RS) ... *The* RS, characteristics

SuggestedRemedy

the behavior of the 800 Gb/s Reconciliation Sublayer (RS) for
800 Gb/s and 1.6 Tb/s

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The term "characteristics" is consistent with language used in similar clauses, such as 81, 106, and 117. The comment does not provide sufficient justification to support the suggested change.

Cl **170** *SC* **170.4.3** *P* **207** *L* **7** # 684

Dawe, Piers Nvidia

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

There should be major options for MAC rate, as in 81.5.2.3 and 171.9.3

SuggestedRemedy

Split this item into two

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The current approach in 170.1 (800GbE and 1.6TbE) is consistent with subclause 117.5.3 (200GbE and 400GbE). The comment correctly points out that 81.5.2.3 also defines two additional major options for the different MAC rates (40GbE and 100GbE). This is not required for either Clause 117 or 170, as none of the subsequent PIC items are dependent on the MAC rate.

Cl **171** *SC* **171.3.3** *P* **216** *L* **2** # 686

Dawe, Piers Nvidia

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

average data rate on the 800GMII - there are two 800GMIIs. Similarly in 171.3.3a

SuggestedRemedy

the average data rate across the 800GMII in the PHY 800GXS
Similarly in 171.3.3

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It is evident from the fact that this note is in subclause 171.3.3 that it is referring to the 800GMII below the PHY 800GXS and not the 800GMII below the RS. The same applies to the note in 171.3.3a, which applies to the 1.6TMII below the PHY 1.6TXS.

Cl **171** *SC* **171.3.3a** *P* **216** *L* **25** # 687

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

will is deprecated

SuggestedRemedy

Change will be to is - several places

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The use of will in some contexts is deprecated as stated in the IEEE SA Style Manual: "The word will is deprecated and shall not be used when stating mandatory requirements; will is only used in statements of fact." The use of "will" in this case is appropriate as it is a statement of fact, not a requirement.

Cl **171** *SC* **171.9.5.1** *P* **231** *L* **47** # 688

Dawe, Piers Nvidia

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

For the PHY XS, this may be a misuse of "Transmit"

SuggestedRemedy

Use separate items for PHY XS and DTE XS

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For the table in 171.9.5.1 change the text in the feature column for PICS items TF1 and TF2 from "Transmit 64B/66B encoder .." to "64B/66B encoder .."

For the table in 171.9.5.2 change the text in the feature column for PICS items RF13 and RF14 from "Receive 64B/66B decoder .." to "64B/66B decoder .."

Cl **173** *SC* **173.1.1** *P* **244** *L* **18** # 689

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

forms

SuggestedRemedy

types

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete the words "forms of" on page 244 line 18.

Cl **173** *SC* **173.1.1a** *P* **244** *L* **35** # 690

Dawe, Piers Nvidia

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

supports

SuggestedRemedy

connects to

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **173** *SC* **173.1.1a** *P* **244** *L* **35** # 691

Dawe, Piers Nvidia

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

any ... in Table 169-2 *and* Table 169-3.

SuggestedRemedy

any ... in Table 169-2 *or* Table 169-3.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

In this case "and" is accurate since the PMA supports any PMD that is listed in tables 169-2 and 169-3

Cl **174** *SC* **174.2.1** *P* **248** *L* **51** # 692

Dawe, Piers Nvidia

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

physically instantiated

SuggestedRemedy

exposed

Proposed Response *Response Status* **W**

PROPOSED REJECT.
For data rates 40 Gb/s and higher, the term "physically instantiated" is used consistently within 802.3 to describe interfaces that are exposed and measurable.
As an example, in 120.5.3 "The limits for Skew and Skew Variation at physically instantiated interfaces ..."are specified at Skew points
The proposed change does not improve the accuracy or clarity of the draft.

Cl **175** *SC* **175.2.4.6.1** *P* **266** *L* **10** # 694

Dawe, Piers Nvidia

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

This is a specification, not a school lecture. am_x is not an example, we are defining its name here. 179 linear fit has "define", which is better although we don't usually write in the imperative.

SuggestedRemedy

Change
Let am_x<119:0> be the alignment marker for PCS lane x, x=0 to 15, where bit 0 is the first bit transmitted.
to
The alignment marker for PCS lane x, where x=0 to 15, is defined as am_x<119:0>. Bit 0 is the first bit transmitted.
Make similar changes elsewhere.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This wording is identical to wording in other PCS subclauses describing AM insertion such as 91.5.2.6, 119.2.4.4.1, 119.2.4.4.2, 134.5.2.6, 152.5.3.6, and 161.5.2.6.1. There are many examples of the phrasing "Let <some variable> be or represent or equal something" throughout the base standard and amendments.

Cl **176** *SC* **176.1.1** *P* **288** *L* **18** # 695

Dawe, Piers Nvidia

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

Three types of the - delte the, as in 173

SuggestedRemedy

Delete the, as in 173

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The comment does not provide sufficient justification to support the suggested remedy. The suggested remedy does not improve the accuracy or clarity of the text.

Cl **176** *SC* **176.4.3.2.1** *P* **305** *L* **28** # 696

Dawe, Piers Nvidia

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

round-robin and round robin

SuggestedRemedy

alternating, in rotation

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Round-robin is a common term that has been used in multiple clauses in the standard (e.g. clauses 23, 46, 81, 82, 91, 119, 134, 148, 149, 152)

The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **177** *SC* **177.4.5** *P* **333** *L* **16** # 697

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

is most naturally defined

SuggestedRemedy

Clean up

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove "most naturally".

Cl **177** *SC* **177.4.5** *P* **333** *L* **18** # 698

Dawe, Piers Nvidia

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

alpha

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add definition for alpha as "alpha is a primitive element in Galois Field GF(2^7)."

Cl **177** *SC* **177.4.5** *P* **333** *L* **20** # 699

Dawe, Piers Nvidia

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

x

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED REJECT.
x in poly is not defined in other clauses, either. This is common knowledge to implementers.

Cl **177** *SC* **177.4.5** *P* **333** *L* **24** # 700

Dawe, Piers Nvidia

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

T

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add definition for T : " the superscript "T" denotes a matrix transpose operator"

Cl **177** *SC* **177.4.5** *P* **333** *L* **25** # 701

Dawe, Piers Nvidia

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

MSB

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED REJECT.
MSB is defined in 1.5 and is used across the document.

Cl **177** *SC* **177.4.5** *P* **333** *L* **30** # 702

Dawe, Piers Nvidia

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

big dot

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add definition for bit dot : " "•" denotes matrix dot product."

Cl **177** *SC* **177.4.5** *P* **333** *L* **50** # 703

Dawe, Piers Nvidia

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

big dot

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #702.

Cl **177** *SC* **177.4.5** *P* **334** *L* **1** # 704

Dawe, Piers Nvidia

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

^-1

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add definition for "^-1" as: "the superscript "-1" denotes a matrix inversion operator."

Cl **177** *SC* **177.4.5** *P* **334** *L* **4** # 705

Dawe, Piers Nvidia

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

generator matrix vs. Generation matrix - confusingly similar names

SuggestedRemedy

Rename one

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Rename to "generator matrix".

Cl **178** *SC* **178.9** *P* **361** *L* **40** # 707

Dawe, Piers Nvidia

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

characteristics

SuggestedRemedy

specifications

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The language in the header is consistent with prior electrical PMD clauses and with other subclauses in this draft.
The proposed wording change does not improve the technical clarity or accuracy of the text.

Cl **178** *SC* **178.9.2** *P* **361** *L* **47** # 708

Dawe, Piers Nvidia

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

characteristics

SuggestedRemedy

specifications

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #707.

Cl **178** *SC* **178.9.2** *P* **361** *L* **53** # 709

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *ucket) TX measurement filter*

fourth-order vs. 5th order BT4. And why 60 GHz?

SuggestedRemedy

Change to 5th order, 53.125 GHz

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The comment lacks justification to support the suggested remedy.

Cl **178** *SC* **178.9.2.4** *P* **364** *L* **34** # 710

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(Electrical) (bucket) Tx N_v*

Nv = 400 ! That's ludicrously rare, 4^400 is 7e240. 100 is enough

SuggestedRemedy

Change Nv to 100 wherever it is 400 in this draft

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The pulse response length is intended to measure the steady-state voltage, which may have a long settling time. Limiting the measurement length does not serve any purpose and may cause test fixture dependence.
The probability argument in the comment is irrelevant since in practice the transmit equalizer will likely not be in preset 1 anyway, and in that case v_f will never be encountered.
The comment lacks justification to support the suggested remedy.

Cl **178** *SC* **178.9.3.4.1** *P* **366** *L* **48** # 711

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

0.8V

SuggestedRemedy

insert space

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.10.1** *P* **371** *L* **15** # 712

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *al) (bucket) COM parameters*

Indices that look like exponents, should be subscripts

SuggestedRemedy

Change C_d^(1) to C_d1 or Cd1, and so on

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Resolve using the response to comment 378.

Cl **178** *SC* **178.10.1** *P* **371** *L* **25** # 713

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket) COM*

Confusion between z and Z

SuggestedRemedy

As Z for impedance is very strongly established, use something other than z for length, such as L

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Lowercase z is the symbol that is used to represent package trace lengths for several generations (e.g. Clauses 93, 137, 163).
L is commonly used to denote inductance, so it may also be considered confusing.
The proposed change does not add clarity to the standard.

Cl **178** *SC* **178.10.1** *P* **372** *L* **46** # 714

Dawe, Piers Nvidia

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

With a new COM, we can break away from old mistakes from the 8B/10B days. OIF did this years ago.

SuggestedRemedy

Change "Random jitter" to "Gaussian jitter", and sigma_RJ to sigma_GJ

Proposed Response *Response Status* **W**

PROPOSED REJECT.
"Gaussian jitter" appears in only 3 places in 802.3 and is never defined. The first instance is in 48B.1.2 which is titled "Random Jitter".
The suggested remedy deviates from established 802.3 terminology, and does not improve the clarity or accuracy of the draft.

Cl **178** *SC* **178.10.1** *P* **372** *L* **46** # 715

Dawe, Piers Nvidia

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

Unrealistic jitter values

SuggestedRemedy

"RJ" should be increased and D-D jitter should be reduced

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The suggested remedy provided in the comment lacks specific values to implement them.

Cl **178** *SC* **178.10.3** *P* **373** *L* **51** # 716

Dawe, Piers Nvidia

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

Tukey window: it's not a flag (status bit) it's a switch (control bit)

SuggestedRemedy

Change Tukey window flag to Tukey window

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The parameter tw in 93A.5 (as amended by 802.3ck-2022) is called "Tukey window flag".

Cl **179** *SC* **179.1** *P* **383** *L* **22** # 717

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Electrical) (bucket)*

The electrical specifications are separate for each host class - awkward

SuggestedRemedy

There are electrical specifications for each host class

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The proposed wording change does not improve the technical clarity or accuracy of the text.
However, it would be more accurate to state that the specifications are different rather than separate.
Change "separate" to "different".

Cl **179** *SC* **179.1** *P* **384** *L* **35** # 718

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket)*

Tables 1 and 2, and 3 and 4, can be combined

SuggestedRemedy

Combine them into two, as Table 167-2, here and in other clauses

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The associated clauses are significantly different between 200G/400G, 800G, and 1.6T, preventing combination of the tables as suggested.
The tables are consistent with other PMD clauses in this draft and in most previous PMD clauses.

Cl **179** *SC* **179.9** *P* **393** *L* **19** # 719

Dawe, Piers Nvidia

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

PMD electrical characteristics

SuggestedRemedy

PMD electrical specifications

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #708.

Cl **FM** *SC* **FM** *P* **13** *L* **1** # 722

Dawe, Piers Nvidia

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

802.3dk is ahead of this project

SuggestedRemedy

Insert: IEEE Std 802.3dk-202x
This amendment includes changes to IEEE Std 802.3-2022 and adds Clause . This amendment adds Physical Layer specifications and management parameters for 100 Gb/s Ethernet optical interfaces for bidirectional operation over a single strand of single-mode fiber.
Make other changes as appropriate

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the resonse to comment #332.

Cl **45** *SC* **45.2.1.264** *P* **111** *L* **49** # 723

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

PMAL - not defined, and somehow unmemorable. If it were to be kept, it would need to be added to the abbreviations list, but PMA lane / PMAL is used so much less often than PCS lane / PCSL that it's not worth coining an abbreviation for it.

SuggestedRemedy

Change PMAL to PMA lane, throughout the draft

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The term PMAL is defined in 176.1.3 and used extensively throughout the 802.3dj standard.

[Editor's note: changed subclause from 45.2.1.26 to 45.2.1.264]

Cl **45** *SC* **45.2.3.1** *P* **116** *L* **37** # 724

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

Editor's note (to be removed after first working group ballot): doesn't respect SA balloters

SuggestedRemedy

Change to: Editor's note (to be removed after first SA ballot):
11 times

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to: Editor's note (to be removed after first Standards Association ballot): 11 times

Cl **45** *SC* **45.2.1.6** *P* **74** *L* **20** # 725

Dawe, Piers Nvidia

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

as amended by IEEE Std 802.3df-2024

SuggestedRemedy

as amended by IEEE Std 802.3df-2024 and IEEE Std 802.3dk-202x
Show the changes to these bits made by P802.3dj
Similarly in other tables

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The response to comment #332 confirms that 802.3dk is assumed to precede 802.3dj.
Implement the suggested remedy with editorial license.

Cl **45** *SC* **45.2.1.6** *P* **74** *L* **41** # 726

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Logic) (bucket)*

So that the reviewers can confirm that the new material is inserted in the correct place, in the correct style, and without using a bit that's already taken

SuggestedRemedy

Please show the sub-rows below and above, each time.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add to the bottom of the description unchanged row:
1 0 0 0 0 1 0 1 = 800GBASE-DR8-2 PMA/PMD

Cl **73** *SC* **73.8** *P* **140** *L* **6** # 727

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Logic) (bucket)*

Cramped table title

SuggestedRemedy

Make its box full width

Proposed Response *Response Status* **W**

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

Cl **116** *SC* **116.1.4** *P* **148** *L* **6** # 728

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(Common) (bucket)*

2 or 4 -> two or four

SuggestedRemedy

Change
PHY type and clause correlation (200GBASE copper with 2 or 4 lanes)
to
PHY type and clauses (200GBASE copper with two or four lanes)
and similarly for other tables

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The style guide allows some flexibility especially allowing for consistency. The digits 2 and 4 are used here to be consistent with the title of Figure 116-5 which includes "16" that would not be stated in words: "Table 116–5—PHY type and clause correlation (400GBASE optical with 4, 8, or 16 lanes)"

Cl **116** *SC* **116.1.4** *P* **148** *L* **10** # 729

Dawe, Piers Nvidia

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

There must be a BM PMA below any SM PMA

SuggestedRemedy

Move 176 and 176C to between 119 and 120. Also in 116-3a 4 and 5.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This table is not a layer diagram, but rather as stated in the Table title it is a correlation between PHY types and clauses. It is therefore relevant to order the clauses by clause number rather than a particular subjective rule. There are many subjective ways that this table might be arranged other than that proposed by the commenter. The proposed change does not improve the accuracy or clarity of the standard.

Cl **116** *SC* **116.1.4** *P* **148** *L* **26** # 730

Dawe, Piers Nvidia

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

I don't see why the SM PMA is shown as conditional. It might be needed if one wants a 200GAUI-1 C2C, but that's not to do with the PMD.

SuggestedRemedy

Change C to O and/or revise the footnote. Also in 116-3a 4 and 5.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The SM-PMA is never optional. It is mandatory given some conditions (e.g., there is a 200GAUI-1 C2C or C2M) and not required at all given other conditions (e.g., there is no 200GAUI-1 C2C or C2M).

Cl **116** *SC* **116.2.9** *P* **155** *L* **35** # 731

Dawe, Piers Nvidia

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

If IS stands for inter-sublayer (116.3) and and ISL for inter-sublayer link (178B), this would be ISLT. However, the "IS_" in the primitives has outlived its usefulness and should be removed, and optical PHYs do not have what one would recognise as training, even if there is a start-up protocol that uses training frames.

SuggestedRemedy

Find a better name for this, such as ISS (inter-sublayer startup), or remove 178B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The acronyms ISL and ILT are sufficient as they are. ILT is a mandatory and necessary feature for many PMD types so removing Annex 178B would not be an acceptable way to resolve the concern expressed in the comment.

Cl **179** *SC* **179.9.4** *P* **393** *L* **43** # 734

Dawe, Piers Nvidia

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

Transmitter characteristics

SuggestedRemedy

Transmitter specifications

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #708.

Cl **179** *SC* **179.9.4.6.1** *P* **402** *L* **1** # 738

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket) jitter*

The standard should be written in English. The three-pronged magnet is pretentious, unfamiliar and unnecessary.

SuggestedRemedy

Change to: For each transition I in the set A:

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The comment refers to the mathematical symbol ∈.
This symbol appears 77 times in IEEE Std 802.3-2022, with instances spanning clause 21 to clause 144. Readers are assumed to be familiar with it. In case of doubt, It is defined in Table 21–1 as "Indicates membership".
The proposed change does not improve the technical clarity or accuracy of the text.

Cl **179** *SC* **179.9.4.6.2** *P* **402** *L* **18** # 739

Dawe, Piers Nvidia

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

J4u03 can't be measured for CR because of the losses in the host

SuggestedRemedy

Delete, combine with other impairments into EECQ

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The CRG has previously considered similar comments, most recently in comment #541 against D1.3. See <https://www.ieee802.org/3/dj/comments/D1p3/8023dj_D1p3_comments_final_clause_20250212.pdf#page=80>. The response to that comment is an "accept in principle" due to the fact that the calculation of J4u03 was modified by the response to another comment, #306. However, there is no supporting evidence to the claim in the current comment, that "J4u03 can't be measured for CR". Contrary to this claim, several contributions to the task force show that this parameter can be measured after even for C2M hosts (after higher losses than assumed for CR hosts), and with sufficient accuracy to characterize transmitters to the current specifications. See <https://www.ieee802.org/3/dj/public/25_01/calvin_3dj_01b_2501.pdf> which references previous presentations on slide 2.
EECQ, mentioned in the suggested remedy, is not used in any IEEE 802.3 specification (it is defined in an OIF implementation agreement). No evidence has been provided that EECQ can adequately and reliably capture the effects of jitter on receivers.
The comment does not provide sufficient justification to support the suggested remedy.
The suggested remedy does not provide sufficient detail to implement.

Cl **179** *SC* **179.9.4.5.1** *P* **400** *L* **4** # 740

Dawe, Piers Nvidia

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

Downsampling for P_Signal in SNDR seems fussy and unecessary

SuggestedRemedy

Remove it

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The comment does not provide sufficient justification to support the suggested remedy.
The suggested remedy does not provide sufficient detail to implement.

Cl **179** *SC* **179.9.4.6** *P* **401** *L* **28** # 741

Dawe, Piers Nvidia

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

Dud jitter method. Turning off aggressor lanes is desperate

SuggestedRemedy

Don't attempt to isolate jitter

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The comment does not provide sufficient justification to support the suggested remedy.
The suggested remedy does not provide sufficient detail to implement.

Cl **179** *SC* **179.9.4.6.3** *P* **402** *L* **43** # 742

Dawe, Piers Nvidia

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

EOJ03 should be included in SNDR or EECQ. It's not clear that we need a separate spec for it

SuggestedRemedy

Ensure that SNDR or EECQ include it (by telling the scope that the pattern is twice as long as it is), and delete

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Even-odd jitter is a specification parameter for multiple generations of electrical transmitter specifications.
The comment does not indicate a problem that needs to be solved.
The comment does not provide sufficient justification to support the suggested remedy.
The suggested remedy does not provide sufficient detail to implement.

Cl **179** *SC* **179.9.4.7** *P* **403** *L* **5** # 743

Dawe, Piers Nvidia

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

mating interface discontinuity - ambiguous and not defined.

SuggestedRemedy

Clarify what this means

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The existing text exists since D1.2 and originates from the response to comment #199 against D1.1. This response was a result of discussion in the CRG with consensus on the wording "excluding the mating interface discontinuity". See <https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_final_clause.pdf#page=77>.
The suggested remedy does not provide sufficient detail to implement.

Cl **179** *SC* **179.9.5.3** *P* **406** *L* **39** # 744

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *(Electrical) (bucket) ITOL*

See 179.2 for definition of block error ratio - not. 179.9.5.3.5 says "Block error ratio is defined in 174A.8."

SuggestedRemedy

Change "See 179.2 for definition of block error ratio." to "See 179.2 and 174A.8."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.