

CI 45 SC 45.2.1 P76 L43 # R2-1

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (L)

Table 45-3 was not updated to match the D3.2 changes to registers 1.1477 and 1.1478. (a) Line 43 lists 1.1477 as "PMA/PMD interface lane training status", but D3.2 retitled it "PMA/PMD interface lane training status 1" in the heading of 45.2.1.169d (page 103) and in the TOC (page 17). (b) Line 44 still lists 1.1478 as "Reserved" with no subclause reference, although D3.2 adds subclause 45.2.1.169e "PMA/PMD interface lane training status 2 (Register 1.1478)" on page 104, defines bits 1.1478.7:0 (Receiver OK lane 7:0), and cites 1.1478.7:0 for rx\_ok in the variable-to-register mapping table on page 912. The adjacent rows in the same table block were edited in D3.2 (168c/168d/168e/168f renumbered to 169c/169d/169f/169g), and the next row 1.1479 already points to 45.2.1.169f, so 169e is the only missing entry. This also affects the resolution of D3.1 comment R1-188, which added register 1.1478 without the corresponding Table 45-3 row.

#### SuggestedRemedy

On page 76 line 43, change the Register name for 1.1477 to "PMA/PMD interface lane training status 1". On page 76 line 44, change the row "1.1478 Reserved" to "1.1478 PMA/PMD interface lane training status 2 45.2.1.169e".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1 P78 L9 # R2-2

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (L)

The resolution of D3.1 comment R1-3 was not correctly implemented. The single D3.1 row "1.2900 through 1.3715 | PMA test block error bin counters" was split into two rows, but with the wrong boundary: page 78 line 9 reads "1.2900 through 1.3707 | PMA transmit test block error bin counters | 45.2.1.272" and line 10 reads "1.3708 through 1.3715 | PMA receive test block error bin counters | 45.2.1.272". Every other location in D3.2 uses the 1.3307/1.3308 boundary: 45.2.1.272 on page 127 lines 43 to 45 states the transmit direction registers span from 1.2900 to 1.3307 and the receive direction registers from 1.3308 to 1.3715 - Table 45-212v on page 128 begins the receive registers at 1.3308.15:0 - and the register-name annex on pages 350 and 351 gives test\_block\_error\_bin\_rx\_0\_<0:15> at 1.3308 to 1.3355 through test\_block\_error\_bin\_rx\_7\_16p at 1.3713 to 1.3715. As printed, the transmit row spans 808 registers and the receive row only 8, whereas each direction requires 408. The affected table is Table 45-3 (PMA/PMD registers), reproduced in the 45.8 register-address summary.

#### SuggestedRemedy

In Table 45-3 on page 78, change the transmit row range from "1.2900 through 1.3707" to "1.2900 through 1.3307", and the receive row range from "1.3708 through 1.3715" to "1.3308 through 1.3715".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.168a P101 L1 # R2-3

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (L)

The D3.2 renumbering of the inserted Clause 45 subclauses from 45.2.1.168b through 45.2.1.168f to 45.2.1.169b through 45.2.1.169g was not applied to the first inserted subclause or to the editing instruction. Page 101 line 1 still reads "Insert 45.2.1.168a through 45.2.1.168f after 45.2.1.168 as follows:", but the subclauses that follow are 45.2.1.168a, 45.2.1.169b, 45.2.1.169c, 45.2.1.169d, 45.2.1.169e, 45.2.1.169f, and 45.2.1.169g. The cited range matches none of the inserted material, the stated insertion point is inconsistent with the 169x numbers, and 45.2.1.169a does not appear anywhere in D3.2. The orphaned 45.2.1.168a also propagates to the TOC (page 17 line 20), the Subclause cell for register 1.1459 in Table 45-3 (page 76 line 39), and the max\_wait\_timer\_duration row of the Annex 178B variable-to-register cross-reference table (page 911 line 38).

#### SuggestedRemedy

Renumber 45.2.1.168a (ILT max wait timer duration register, Register 1.1459) to 45.2.1.169a and update every occurrence: the subclause heading on page 101 line 3, the TOC entry on page 17 line 20, the Subclause cell in Table 45-3 on page 76 line 39, and the max\_wait\_timer\_duration row on page 911 line 38. Change the editing instruction on page 101 line 1 to read "Insert 45.2.1.169a through 45.2.1.169g after 45.2.1.169 as follows:".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

It is the subclause numbering that is wrong.

On page 101:

Change:

"Insert 45.2.1.168a through 45.2.1.168f after 45.2.1.168 as follows:"

To:

"Insert 45.2.1.168a through 45.2.1.168g after 45.2.1.168 as follows:"

Renumber 45.2.1.169b through 45.2.1.169g so they become 45.2.1.168b through 45.2.1.168g

CI 176 SC 176.1 P348 L25 # R2-4

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (L)

The D3.2 rewrite of the intrinsic-delay paragraph in 176.10 (page 348 lines 24 to 34) deleted the sentence "As recommended in 90A.7, the maximum delay value is allocated to the transmit path and the minimum delay value to the receive path.", which was present in D3.1 at page 347 lines 25 to 26. 176.10 still reports the eight \_max/\_min path data delay status variables at page 348 lines 36 to 41 (PMA\_delay\_ns\_TX\_max/\_min, PMA\_delay\_ns\_RX\_max/\_min and the subns equivalents), but nothing remaining in 176.10 specifies how the maximum and minimum delay values are apportioned between the transmit and receive paths. The parallel clause 177.9 (page 378 line 30) and the corresponding text at page 615 line 19 and page 690 lines 23 and 47 all retain the sentence, so the deletion also creates an inconsistency between otherwise-parallel subclauses.

#### SuggestedRemedy

Restore the allocation statement in 176.10. After "...sum of the transmit and receive delays is a constant value." on page 348 line 25, insert "As recommended in 90A.7, the maximum delay value is allocated to the transmit path and the minimum delay value to the receive path." If the D3.2 differentiation between the m:n/n:n and n:m PMAs requires distinct allocation rules, add equivalent wording defining the max/min allocation for each of the m:n, n:n, and n:m PMA cases.

Proposed Response Response Status W

PROPOSED REJECT.

Based on comment R1-131 against D3.1 (see [https://www.ieee802.org/3/dj/comments/D3p1/8023dj\\_D3p1\\_comments\\_final\\_id.pdf](https://www.ieee802.org/3/dj/comments/D3p1/8023dj_D3p1_comments_final_id.pdf)), the sentence "As recommended in 90A.7, the maximum delay value is allocated to the transmit path and the minimum delay value to the receive path."" was removed because it cannot be applied to n:m PMAs as pointed out in the presentation at: [https://www.ieee802.org/3/dj/public/26\\_07/dekoos\\_3dj\\_01\\_2607.pdf](https://www.ieee802.org/3/dj/public/26_07/dekoos_3dj_01_2607.pdf)

The instructions for reporting the path data delays are correct as written and are different for the m:n PMAs and the n:m PMA.

CI 176 SC 176.1 P348 L25 # R2-5

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (L)

Subject-verb disagreement in text newly added in D3.2 at page 348 lines 25 and 29: "The transmit path data delay for the m:n and n:n PMAs are reported..." and "The receive path data delay for the m:n and n:n PMAs are reported...". The subject is the singular "delay", so the verb should be "is reported". The parallel n:m PMA sentences in the same paragraph (lines 27 and 30) correctly use "is reported".

#### SuggestedRemedy

On page 348, change "for the m:n and n:n PMAs are reported" to "for the m:n and n:n PMAs is reported" on line 25 and on line 29.

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 177 SC 177.11.4.1 P384 L31 # R2-6

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (L)

In the Transmit function PICS table of 177.11.4.1, newly added item TF11 "PRBS31 checker" cites 177.6.2.1, which is "PRBS31 test pattern checker" under 177.6.2 Test pattern checking, a receive-path function. Page 372 lines 40 to 42 state that the Inner FEC test pattern checkers are "used to check the signal on each receive input lane from the PMD service interface", and 177.6.2.1 requires checkers at the output of the PAM4 decoder. A receive function is therefore listed in the Transmit function table, while the Receive function table in 177.11.4.2 has no entry for 177.6.2.1. Items TF7 through TF11 and RF7 are all new in D3.2.

#### SuggestedRemedy

Delete item TF11 (PRBS31 checker, 177.6.2.1) from the Transmit function table of 177.11.4.1 and add it to the Receive function table of 177.11.4.2 as a new item (e.g. RF7 "PRBS31 test pattern checker", 177.6.2.1, status M, Support "Yes [ ]"), renumbering the existing RF7 (PRBS31-encoded-by-Inner-FEC RX mode, 177.6.2.3) to RF8. Align the feature wording with the subclause title "PRBS31 test pattern checker".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

CI 177 SC 177.11.4.2 P384 L46 # R2-7

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (L)

In the Receive function PICS table of 177.11.4.2, the newly added item RF7 ("PRBS31-encoded-by-Inner-FEC RX mode", subclause 177.6.2.3, Status M) has an empty Support column. All other items in the Clause 177 PICS tables, including RF1 through RF6 in the same table and the companion transmit-side item TF8 (177.6.1.1) added by the same edit, show "Yes [ ]" in the Support column. As written the row cannot be completed by an implementer. This item was added in response to D3.1 comment R1-49 - the substance was implemented but the Support cell was left blank.

**Suggested Remedy**

In the Receive function PICS table of 177.11.4.2 on page 384, add "Yes [ ]" to the Support column of item RF7, matching items RF1 through RF6 and item TF8 in 177.11.4.1.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Resolved using the response to comment R2-174.

CI 178 SC 178.9.3.4.1 P401 L34 # R2-8

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (E)

D3.2 corrected 178.9.2.5 (page 396 line 53) from "shall meet the specification dvf (min)" to "shall be within the range specified for dvf in Table 178-6", because Table 178-6 specifies dvf as a range (0 to 0.1 V) with no minimum value. The parallel statement in 178.9.3.4.1 (page 401 line 34) still reads that the difference steady-state voltage dvf "is less than or equal to the minimum specified in Table 178-6", referring to a nonexistent minimum and conflicting with the corrected 178.9.2.5. The identical stale wording remains in 176C.6.4.4.1 (page 809 line 44) referencing Table 176C-2, whose dvf is also given as a range (0 to 0.1 V).

**Suggested Remedy**

On page 401 line 34, change "is less than or equal to the minimum specified in Table 178-6" to "is within the range specified for dvf in Table 178-6". Apply the corresponding change on page 809 line 44: "is within the range specified for dvf in Table 176C-2".

Proposed Response Response Status W

PROPOSED REJECT.  
This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The comment addresses the receiver test setup subclause. In this subclause, the transmitter used in the setup is required to have the minimum swing allowed (or lower), in order to test the performance of the PMD receiver under test at this extreme condition. This is different from 178.9.2.5, which is the specification for the PMD transmitter.  
The dvf parameter is specified as a range, which has both a minimum and a maximum. Therefore the text "is less than or equal to the minimum specified in Table 178-6" is correct as written and unambiguous.

The wording could be further clarified to read "is less than or equal to the minimum of the range specified in Table 178-6", but this change is not required.

The same goes for 176C.6.4.4.1.

CI 178 SC 178.9.3.7 P404 L39 # R2-9

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

The resolution of D3.1 comment R1-108 specified changing the citation to "Table 178-8, Table 178-14, and Table 178-15". The reference to 178-15 was added but the word "Table" was omitted, so page 404 line 39 reads "in Table 178-8, Table 178-14, and 178-15 and with the value of Tfx equal to twice the delay from TP5v to...". This is inconsistent with the parallel transmitter text in 178.9.2.3 (page 396 line 11), which correctly reads "Table 178-8, Table 178-14, and Table 178-15", and with the citations on page 402 line 2 and page 406 lines 4 and 42. The bare "178-15" reads as a subclause or equation number.

**Suggested Remedy**

On page 404 line 39, change "in Table 178-8, Table 178-14, and 178-15 and with the value of Tfx" to "in Table 178-8, Table 178-14, and Table 178-15, and with the value of Tfx".

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178 SC 178.14.3 P414 L26 # R2-10

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

The D3.2 merge of PICS items AUI200G ("200 Gb/s per lane AUI-n C2C", Annex 176C) and AUIL200G ("Less than 200 Gb/s per lane AUI-n C2C", Annex 120F/120D/120B) into the single item AUI2C was completed in the Clause 179 PICS (page 459 line 39, Feature = "AUI-n C2C") but left incomplete in the Clause 178 PICS. On page 414 line 26 the item label was changed to AUI2C and the Value/Comment updated to "PMD is separated from the PCS by an AUI-C2C specified in Annex 120B, Annex 120D, Annex 120F, or Annex 176C", but the Feature cell still carries the leftover text "200 Gb/s per lane AUI-n C2C". Annex 120B, 120D and 120F specify AUIs at less than 200 Gb/s per lane, so the Feature label contradicts the item's own Value/Comment.

**Suggested Remedy**

In 178.14.3 on page 414 line 26, change the Feature cell of item AUI2C from "200 Gb/s per lane AUI-n C2C" to "AUI-n C2C", matching the AUI2C row in the Clause 179 PICS on page 459 line 39.

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 179 SC 179.4 P422 L18 # R2-11

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

The resolution of D3.1 comment R1-302 expanded "the PMD client (PMA)" to "the PMD client (PMA immediately above the PMD)" but left the original closing parenthesis in place, producing a doubled parenthesis: "...exchange of encoded data between the PMD and the PMD client (PMA immediately above the PMD)". The PMD translates...". The three parallel sentences carrying the same D3.2 insertion (page 390 line 24, page 466 line 5, page 504 line 48) each have a single closing parenthesis.

#### SuggestedRemedy

On page 422 line 18, delete the extra closing parenthesis so the sentence reads "...the exchange of encoded data between the PMD and the PMD client (PMA immediately above the PMD). The PMD translates the encoded data to and from signals suitable for the specified medium."

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 179 SC 179.9.5.2 P440 L9 # R2-12

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

The 174A.9.6/174A.9.7 renumbering in D3.2 was applied to this citation by mechanical substitution, leaving the list out of numeric order: page 440 line 9 reads "either 174A.9.5, 174A.9.7, or 174A.9.6 with parameters provided in Table 179-13". D3.1 read "either 174A.9.5, 174A.9.6, or 174A.9.7". The identical artifact appears at page 838 line 23 (176D.8.11). All other citations of this method list in D3.2 are in ascending order, and the parallel clauses 180.9.14, 180.9.15, 181.9.14, 181.9.15, 182.9.14, 182.9.15, 183.9.14 and 183.9.15 were instead rewritten to "either 174A.9.5 or 174A.9.6" with an added prohibition sentence, so these two subclauses are also technically inconsistent with the rest of the draft in retaining 174A.9.7 as a permitted primary method.

#### SuggestedRemedy

On page 440 line 9 and page 838 line 23, change "either 174A.9.5, 174A.9.7, or 174A.9.6" to "either 174A.9.5, 174A.9.6, or 174A.9.7". If the intent was to align these subclauses with the treatment applied in Clauses 180 through 183, instead change to "either 174A.9.5 or 174A.9.6" and add the corresponding sentence used there.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

A similar issue exists on page 838 line 23.

In both locations, the appropriate update would be to change "either 174A.9.5, 174A.9.7, or 174A.9.6" to "either 174A.9.5, 174A.9.6, or 174A.9.7".

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178B SC 178B.12 P911 L14 # R2-13

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (CA)

Duplicate table numbers in Annex 178B make all citations to Table 178B-3, Table 178B-4 and Table 178B-5 ambiguous. D3.2 split the D3.1 management-variable tables (uniquely numbered Table 178B-6 and Table 178B-7) into four tables and renumbered them starting at 178B-3, colliding with the pre-existing field-structure tables in 178B.7: Table 178B-3 is both "Control field structure for the O1 format" (page 886) and "Control variables and MDIO mapping for PAM4 interfaces" (page 911) - Table 178B-4 is both "Status field structure for the E1 format" (page 887) and "Status variables and MDIO mapping for PAM4 interfaces" (page 912) - Table 178B-5 is both "Status field structure for the O1 format" (page 888) and "Control variables and MDIO mapping for coherent interfaces" (page 913). No table is numbered 178B-7. Affected citations include page 456 lines 14 and 17, page 495 line 43, page 525 line 5, page 557 line 40, page 589 line 14, page 640 line 26 (185.10), page 691 line 47 (186.7.2), page 817 lines 10 and 12, page 844 lines 30 and 35, page 911 lines 3 and 6, page 884 line 41, page 887 lines 11 to 12, page 899, PICS items IL10, IL11 and IL12 on page 917, and PICS items M2 and M3 on page 918. Duplicate table numbers within a single annex are invalid irrespective of the ambiguity they create. The ambiguous citations occur in 179.14 and throughout Annex 178B.12.

#### SuggestedRemedy

Renumber the four management-variable tables in 178B.12 so they do not collide with the 178B.7 field-structure tables, i.e. Table 178B-6 (control variables and MDIO mapping for PAM4 interfaces), Table 178B-7 (status variables and MDIO mapping for PAM4 interfaces), Table 178B-8 (control variables and MDIO mapping for coherent interfaces), and Table 178B-9 (status variables and MDIO mapping for coherent interfaces). Update every citation of the management tables accordingly, including page 456 lines 14 and 17, page 495 line 43, page 525 line 5, page 557 line 40, page 589 line 14, page 640 line 26, page 691 line 47, page 817 lines 10 and 12, page 844 lines 30 and 35, page 911 lines 3 and 6, and PICS items M2 and M3 on page 918. Leave the citations to the field-structure tables on pages 884, 887 and 899 and PICS items IL10, IL11 and IL12 on page 917 unchanged.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Implement the suggested remedy with editorial license.  
[Editor's note: changed page from 456 to 911]

CI 180 SC 180.9.1 P479 L24 # R2-14

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D test pattern (B) (OI)

Table 180-13 (page 479 line 24) still carries footnote marker "a" on pattern 5 (Scrambled idle). Footnote a reads "Precoding (see 176.7.1.2) is added to this pattern as necessary (see 180.9.14 and 180.9.15)." In D3.2 the Table 180-14 rows for "Receiver sensitivity" (180.9.14) and "Stressed receiver sensitivity" (180.9.15) were changed from "3 or 5" to "3", so pattern 5 is no longer permitted for either of the two subclauses the footnote cites. Pattern 5 now appears only for Wavelength and SMSR (180.9.3), Average optical power (180.9.4), and aggressor receive lanes in 180.9.6.1, none of which involve precoding. The same defect exists in the parallel Table 181-11 (page 518), whose footnote a cites 181.9.14 and 181.9.15 after the identical "3 or 5" to "3" edit in Table 181-12.

#### SuggestedRemedy

Remove footnote marker "a" from the pattern 5 (Scrambled idle) row of Table 180-13 (page 479 line 24) and from the pattern 5 row of Table 181-11 (page 518), leaving footnote a attached only to pattern 3 (PRBS31Q). Alternatively, if pattern 5 is intended to remain usable for receiver sensitivity testing, restore "3 or 5" in the Receiver sensitivity and Stressed receiver sensitivity rows of Table 180-14 (page 480 lines 8 and 12) and Table 181-12 (page 518 lines 43 and 46).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the changes to address this issue would be an improvement to the draft.

Delete footnote reference "a" from pattern 5.  
apply the same change to CL 181, 182, 183.

CI 180 SC 180.9.6.4 P485 L41 # R2-17

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D TDECQ-Pave (B) (OI)

Pave is used in normative Equation (180-4), Equation (180-5) and Equation (180-6) but is nowhere defined in D3.2. D3.1 identified it as "the average optical power of the eye diagram (Pave)" - D3.2 changes this to the bare "the average optical power Pave" while the surrounding text was reworked from eye-diagram/histogram language to sample-region language. The draft no longer states whether Pave is the average of the equalized samples  $y_n$ , of the captured waveform  $r(t)$ , or the transmitter average optical power of 180.9.4. Pave sets all three threshold levels, so the ambiguity is material.

#### SuggestedRemedy

On page 485 lines 41 to 42, change "are determined from the OMATDECQ and the average optical power Pave as defined in Equation (180-4)..." to "are determined from the OMATDECQ and Pave, the average optical power of the equalized captured waveform  $y_n$ , as defined in Equation (180-4)..." or otherwise state explicitly the waveform on which Pave is computed.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add the definition of  $P_{ave}$  to the where list after OMA\_TDECQ, and pointing to 180.9.4, i.e. using the method stated in 180.9.14.  
Implement with editorial license.

CI 180 SC 180.9.6.4 P486 L19 # R2-18

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D TDECQ-Pth (B) (OI)

Equation (180-7) on page 486 uses the threshold symbols Pth1, Pth2 and Pth3 before they are defined. The preceding text on page 485 defines only the nominal threshold levels  $P_{0,th1}$ ,  $P_{0,th2}$  and  $P_{0,th3}$  (Equations (180-4) to (180-6)), and the "where" list following Equation (180-7) at page 486 line 34 defines only Ceq. The actual thresholds Pth1, Pth2 and Pth3 are first introduced at page 487 line 12 ("When the SER is estimated, the actual thresholds, Pth1, Pth2, and Pth3, are adjusted by up to +/-2% of OMATDECQ from  $P_{0,th1}$ ,  $P_{0,th2}$ , and  $P_{0,th3}$ "). Equations (180-10) and (180-11) on page 487 depend on Equation (180-7) and inherit the undefined symbols. This use-before-definition was introduced by the D3.2 rewrite of 180.9.6.4 in response to D3.1 comment R1-103: in D3.1 the symbols Pth1/Pth2/Pth3 were defined directly in Figure 180-11 and introduced in prose ahead of their first use.

#### SuggestedRemedy

Introduce the actual thresholds at first use. Either add to the "where" list following Equation (180-7) on page 486 an entry such as "Pth1, Pth2, and Pth3 are the actual threshold levels, adjusted from the nominal levels  $P_{0,th1}$ ,  $P_{0,th2}$ , and  $P_{0,th3}$  as described following Equation (180-11)" - or move the sentence at page 487 lines 12 to 13 forward so that it precedes Equation (180-7).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

P486 Line 33, after the bullet of Ceq, add a second bullet:  
 $P_{th_i}$  are the threshold levels used for calculating SER.  $i = 1,2,3$   
Implement with editorial license.

CI 180 SC 180.9.6.4 P487 L14 # R2-19

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D TDECQ-optimization (OI) (B)

The D3.2 edit removed the quantified convergence tolerance for the TDECQ sigmaG iteration. D3.1 read "is not within 1% of the target PAM4 SER" and "falling within 1% of the target PAM4 SER" - D3.2 now reads "is not equal to the target PAM4 SER of  $4.56 \times 10^{-4}$ " and "as close as practical to the target PAM4 SER". An iterative numerical search over continuous sigmaG with re-optimization of equalizer tap coefficients can never yield SER exactly equal to  $4.56 \times 10^{-4}$ , so the loop as written has no defined termination condition, and "as close as practical" supplies no numerical criterion. This makes a normative test procedure non-reproducible between implementations.

#### SuggestedRemedy

On page 487 lines 13 to 16, restore a quantified tolerance: "If max(SERL, SERR) is not within 1% of the target PAM4 SER of  $4.56 \times 10^{-4}$ , the process is iterated by changing sigmaG and reoptimizing the equalizer tap coefficients. TDECQ is calculated using the optimized sigmaG that results in max(SERL, SERR) falling within 1% of the target PAM4 SER." If a different tolerance is intended, state it numerically - do not leave "as close as practical" as the sole convergence criterion.

Proposed Response Response Status W

PROPOSED REJECT.

The change was adopted with resolution to Draft 3.1 comment R1-103 in the following report:  
[https://www.ieee802.org/3/dj/comments/D3p1/8023dj\\_D3p1\\_comments\\_final\\_clause.pdf](https://www.ieee802.org/3/dj/comments/D3p1/8023dj_D3p1_comments_final_clause.pdf)

Prior to D3.2 there was no guidance on how close sigma\_G to should be except that it should be exact which is not practical. Current text, updated in D3.2, provides some guidance in this regard: "TDECQ is calculated using the optimized sigma\_G that results in max(SERL, SERR) as close as practical to the target PAM4 SER."

The current draft as written provides sufficient guidance for the user to implement the sigma\_G optimization. A user may choose to set a low accuracy and get faster convergence time, while another user may choose to set a higher requirement on accuracy, and spend longer time in converging. The exact accuracy of the MMSE optimization is up to the user of the draft.

CI 180 SC 180.9.8.2 P490 L4 # R2-22

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D TFT (B) (OI)

The resolution of D3.1 comment R1-313 committed to specifying that BERadded equals 0 in the second sentence of 180.9.8.2. The sentence was reworded in D3.2 from "using ORx operating BER =  $2.4 \times 10^{-5}$  and  $p = 1$ " to "using BERmax (ORx operating BER target) of  $2.4 \times 10^{-5}$  and  $p = 1$ ", but no statement that BERadded equals 0 appears in 180.9.8, 180.9.8.1 or 180.9.8.2. Since 174A.9.5 defines BERmax = BERtotal - BERadded, readers cannot confirm that the Table 180-17 Hmax(k) values were computed with BERadded of 0.

#### SuggestedRemedy

On page 490 line 4, amend the second sentence of 180.9.8.2 to read: "The limit Hmax(k) is calculated using the method in 174A.9.5 using BERmax (ORx operating BER target) of  $2.4 \times 10^{-5}$ , BERadded of 0, and  $p = 1$ ."

Proposed Response Response Status W

PROPOSED REJECT.

This was on purpose; by specifying BER\_max directly it is not necessary to specify BER\_added or BER\_total.

CI 180 SC 180.9.14 P492 L4 # R2-23

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D Rx sensitivity (B) (OI)

Table 180-14 and Table 181-12 now list a single test pattern ("3") for Receiver sensitivity, changed in D3.2 from "3 or 5", but the body text of 180.9.14 (page 492 line 4) and 181.9.14 (page 522 line 33) still uses the plural construction "using one of the test patterns specified for receiver sensitivity in Table 180-14 [Table 181-12]". With only one pattern listed the plural is incorrect. The parallel clause 182.9.14 (page 554 line 4) uses the singular "using a test pattern for receiver sensitivity in Table 182-14".

#### SuggestedRemedy

On page 492 line 4, change "using one of the test patterns specified for receiver sensitivity in Table 180-14" to "using the test pattern specified for receiver sensitivity in Table 180-14". Make the same singular correction on page 522 line 33 with respect to Table 181-12.

Proposed Response Response Status W

PROPOSED REJECT.

The text is not incorrect as written.

CI 180 SC 180.9.14 P492 L15 # R2-24

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D Rx sensitivity (B) (OI)

The sentence newly added in D3.2, "When testing using 174A.9.5 or 174A.9.6, the compliance shall not be further verified using 174A.9.7," conflicts with the referenced test methods. 174A.9.5 (page 752 lines 39 to 40) states "If this test fails, then the performance may be further verified using the method in 174A.9.6 or 174A.9.7", and 174A.9.6 (page 753 lines 6 to 7) states "If this test fails, then the performance may be further verified using the method in 174A.9.7". Neither annex sentence carries any qualifying or scoping language, and 174A.9.7 remains an explicitly permitted method in 179.9.5.2 (page 440 line 9) and 176D.8.11 (page 838 line 23), so the annex permission cannot be read as implicitly restricted to non-Clause-180-to-183 PMDs. A normative "shall not" in the PMD clause therefore directly negates a "may" in the method it invokes. The same sentence appears at page 492 line 15, page 494 line 21, page 522 line 49, page 523 line 33, page 554 line 16, page 555 line 15, page 586 line 54, and page 587.

#### Suggested Remedy

Resolve the conflict in one direction and apply it consistently. Preferred: qualify the annex permissions so they defer to the referencing clause, e.g. in 174A.9.5 (page 752 lines 39 to 40) "...may be further verified using the method in 174A.9.6 or, where permitted by the referencing clause, 174A.9.7", and in 174A.9.6 (page 753 lines 6 to 7) "...may, where permitted by the referencing clause, be further verified using the method in 174A.9.7". Alternatively, delete the added prohibition sentence from all eight locations and rely on the method list in each subclause to define the permitted methods. If the statement is only guidance, recast it as a NOTE without "shall".

Proposed Response Response Status W

PROPOSED REJECT.

This choice of language was purposeful; annex 174A gives ability to verify elsewhere, but for this test we are overriding this; it is not guidance. The draft is accurate as written.

CI 180 SC 180.9.14 P492 L46 # R2-25

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D Rx LRS signal (B) (OI)

The parameter name in the new final row of Table 180-18 reads "Average launch power of each non test signal lane (max)". "non test signal" is missing its hyphens and is not a well-formed compound modifier. This is inconsistent with the hyphenation used throughout the draft (non-inverted, non-zero, non-overlapping, non-equalizable) - there is no other instance of an unhyphenated "non <word>" in D3.2. The row is new in D3.2.

#### Suggested Remedy

In the last row of Table 180-18, change the parameter name to "Average launch power of each non-test-signal lane (max)". Optionally add a footnote noting that this row applies only to PMD types with more than one lane, since Table 180-18 is also invoked from 181.8, 182.8 and 183.8, one of which covers a single-lane PMD.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In Table 180-18 change the parameter description in the last row from "Average launch power of each non test signal lane (max)" to "Average launch power of each aggressor lane (max)", so that it is consistent with Table 180-8.

Pending review of the following related contribution:

<URL>/cole\_3dj\_01\_2609.pdf

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                          |     |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------|-----|---------------|
| CI 180                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SC 180.12.4.1 | P498                     | L51 | # R2-26       |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               | RG Nets                  |     |               |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | T             | Comment Status           | D   | PICS (B) (OI) |
| <p>The PICS item for conversion of optical signals was reworded in D3.2 (D3.1 read "signals to four electrical signals", D3.2 reads "signals to symbol streams") but the stale lane count "four" in "Conversion of four optical signals" was left uncorrected. The cited subclause 180.5.3 (page 469 lines 28 to 31) states that the PMD Receive function converts "the n parallel optical signals" received from the MDI into separate symbol streams, and Clause 180 covers 200GBASE-DR1 (n=1), 400GBASE-DR2 (n=2), 800GBASE-DR4 (n=4) and 1.6TBASE-DR8 (n=8). A mandatory (M) PICS item requiring conversion of "four" optical signals is therefore incorrect for three of the four port types. The identical stale "four" survives the same rewording in the parallel rows: page 498 item F6 (180.12.4.1), page 527 item F7 (181.12.4.1), page 560 item F6 (182.12.4.1, cross-referencing 182.5.3 on page 539 line 28), and page 591 item F7 (183.12.4.1).</p> |               |                          |     |               |
| <i>SuggestedRemedy</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                          |     |               |
| <p>Change the Feature text in all four rows to "Conversion of the n optical signals to symbol streams", matching the wording of 180.5.3, 181.5.3, 182.5.3 and 183.5.3: page 498 item F6, page 527 item F7, page 560 item F6, and page 591 item F7.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                          |     |               |
| <i>Proposed Response</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               | <i>Response Status</i> W |     |               |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                          |     |               |
| <p>Change feature of F6 in P498 and P560 to Conversion of n optical signals to symbol streams , n = 1,2,4,8</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                          |     |               |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------|----|---------------|
| CI 181                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SC 181.12.4.1     | P528           | L3 | # R2-27       |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   | RG Nets        |    |               |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | E                 | Comment Status | D  | PICS (B) (OI) |
| <p>The reworded Value/Comment for PICS item F9 states that Global_PMD_signal_detect "is an indicator of the presence of an optical signal on all lanes", but the referenced subclause 181.5.4 (page 507 line 28) states it "is a global indicator of the presence of optical signals on all 4 lanes". The D3.2 rewrite dropped both "global" and the lane count that D3.1 carried, so the PICS entry no longer restates the referenced requirement. The generic wording is appropriate in Clauses 180, 182 and 183, whose bodies use "all n lanes", but not in Clause 181. The affected PICS item is F9.</p> |                   |                |    |               |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                |    |               |
| <p>Change the Value/Comment of PICS item F9 on page 528 to match 181.5.4: "Global_PMD_signal_detect is a global indicator of the presence of optical signals on all 4 lanes".</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                |    |               |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Response Status W |                |    |               |
| PROPOSED REJECT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                |    |               |
| <p>The draft is accurate as written. Changing to the proposed remedy doesn't add clarity to the draft.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                |    |               |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|----|-------------------------|
| CI 182                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SC 182.9.14 | P554                     | L7 | # R2-28                 |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             | RG Nets                  |    |                         |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TR          | Comment Status           | D  | Rx Sensitivity (B) (OI) |
| <p>The resolution of D3.1 comment R1-128 corrected the TECQ measurement cross-reference in 180.9.14 (D3.2 page 492 line 7 now reads "The TECQ of the conformance test signal is measured according to 180.9.7."), but the identical defect in the parallel clause 182.9.14 was not corrected. Page 554 line 7 still reads "The TECQ of the conformance test signal is measured according to 182.9.6, except that the test fiber is not used." Subclause 182.9.6 is "Transmitter and dispersion eye closure for PAM4 (TDECQ)" (page 551 line 20) - the TECQ measurement method is defined in 182.9.7 "Transmitter eye closure for PAM4 (TECQ)" (page 552 line 23). Secondly, 181.9.14 (page 522 line 39) and 183.9.14 (page 586 line 44) retain the "except that the test fiber is not used" wording removed from 180.9.14, although their cross-references are already correct.</p> |             |                          |    |                         |
| <i>SuggestedRemedy</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                          |    |                         |
| <p>In 182.9.14 on page 554 line 7, change to "The TECQ of the conformance test signal is measured according to 182.9.7." For consistency with the R1-128 resolution applied to 180.9.14, also delete ", except that the test fiber is not used" in 181.9.14 (page 522 line 39) and 183.9.14 (page 586 line 44).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                          |    |                         |
| <i>Proposed Response</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | <i>Response Status</i> W |    |                         |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                          |    |                         |
| <p>This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |    |                         |
| <p>However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy with editorial license.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |                          |    |                         |

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| CI 182                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SC 182.9.15       | P 555          | L 13 | # R2-29  |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   | RG Nets        |      |          |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TR                | Comment Status | D    | (B) (OI) |
| The parallel receiver-sensitivity sentences in 182.9.14 and 182.9.15 diverge without technical justification following the D3.2 edit. 182.9.14 (page 554 lines 13 to 14) was updated to read "meets the BLER requirements in 182.2, measured at the PMA using the test method in either 174A.9.5 or 174A.9.6", but 182.9.15 (page 555 lines 12 to 13) was left as "meets the requirements in 182.2 using the test method in either 174A.9.5 or 174A.9.6", missing both "BLER" and "measured at the PMA". |                   |                |      |          |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                |      |          |
| On page 555 lines 12 to 13, change "meets the requirements in 182.2 using the test method in either 174A.9.5 or 174A.9.6" to "meets the BLER requirements in 182.2, measured at the PMA using the test method in either 174A.9.5 or 174A.9.6", matching 182.9.14.                                                                                                                                                                                                                                        |                   |                |      |          |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Response Status W |                |      |          |
| PROPOSED ACCEPT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                |      |          |

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| Cl 185                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SC 185.5.7 | P628              | L27 | # R2-30            |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | RG Nets           |     |                    |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                             | E          | Comment Status    | D   | editorial (B) (OC) |
| The sentence rewritten in D3.2 uses the numeral form "is set to 1", while the immediately following unchanged sentence in the same subclause (page 628 line 32) reads "set the Global_PMD_transmit_disable variable to one" and 185.5.8 (line 37) reads "set PMD_fault variable to one". D3.1 used "is set to one" here - the numeral was introduced by the edit, creating inconsistent value notation for the same variable within adjacent paragraphs. |            |                   |     |                    |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |     |                    |
| On page 628 line 27, change "If either Global_PMD_transmit_disable is set to 1 or the variable c_tx_mode = QUIET (see 185.5.11)" to "If either Global_PMD_transmit_disable is set to one or the variable c_tx_mode = QUIET (see 185.5.11)".                                                                                                                                                                                                              |            |                   |     |                    |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | Response Status W |     |                    |
| PROPOSED ACCEPT.                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                   |     |                    |

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| Cl 185                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SC 185.11.4.1 | P643              | L35 | # R2-31       |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               | RG Nets           |     |               |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | E             | Comment Status    | D   | PICS (B) (OC) |
| D3.2 deleted the PICS item "Integration with management functions" (with cross-reference to the clause Overview) from the PMD functional specifications PICS of Clauses 180 (page 498), 181 (page 527), 182 (page 560) and 183 (page 591), renumbering the remaining F items. The identical item was left in place in the corresponding PICS of Clause 185 (page 643 line 35, "F2 Integration with management functions / 185.1 / O") and Clause 187 (page 720 line 35, "F2 ... / 187.1 / O"). Neither 185.1 nor 187.1 contains any statement about integration with management functions, so the same rationale applies and the six PMD clause PICS proformas are now inconsistent. The same deletion affects the parallel PICS table in 187.11.4.1. |               |                   |     |               |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |                   |     |               |
| In 185.11.4.1 (page 643 line 35) delete the row "F2 Integration with management functions / 185.1 / O" and renumber the remaining F items, updating any references to those item labels. Apply the same change in 187.11.4.1 (page 720 line 35).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                   |     |               |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | Response Status W |     |               |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                   |     |               |
| This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                   |     |               |
| However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy with editorial license.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                   |     |               |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|----|---------------|
| Cl 185                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SC 185.11.4.1 | P644              | L3 | # R2-32       |
| Hajduczenia, Marek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               | RG Nets           |    |               |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | E             | Comment Status    | D  | PICS (B) (OC) |
| <p>D3.2 removed "(optional)" from the 185.5.7 heading (page 628 line 21) and made the transmitter-off behaviour mandatory whenever c_tx_mode = QUIET (page 628 lines 27 to 29), driven by the mandatory RTS-with-squelch state diagram of 185.5.11 (page 628 line 51, "A PMD shall provide the RTS function using the RTS with squelch state diagram (see 178B.11)"). The Clause 185 PICS was not updated to match: item F8 "Global PMD transmit disable function" still has Status "MD:O", so no PICS item captures the now-mandatory squelch/transmitter-off requirement, and a PMD could answer "No" to F8 while still being required to implement 185.5.11. The affected PICS item is F8.</p> |               |                   |    |               |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                   |    |               |
| <p>Update PICS item F8 in 185.11.4.1 to reflect the mandatory behaviour: either change F8's Status to M for the transmitter-off/squelch behaviour required by 185.5.7 and 185.5.11 while retaining a separate MD:O item for the optional Global_PMD_transmit_disable control variable, or, if optionality was intended, restore "(optional)" to the 185.5.7 heading and reword 185.5.7 accordingly.</p>                                                                                                                                                                                                                                                                                           |               |                   |    |               |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               | Response Status W |    |               |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |    |               |
| Change the status of PICS item F8 in 185.11.4.1 from "O" to "M".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                   |    |               |

CI 186 SC 186.2.4.7.6 P665 L6 # R2-34

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (L)

The resolution of D3.1 comment R1-59, which re-based the CSTAT bit references to the 0-based numbering of Figure 186-6, was implemented only on the transmit side. 186.2.3.5.11 (page 659 lines 5 to 8) now places am\_sf<0> in CSTAT<5>, am\_sf<1> (ORed with IFEC\_degraded\_SER) in CSTAT<7>, and am\_sf<2> in CSTAT<6>. The mirror-image receive text in 186.2.4.7.6 (page 665 lines 6 to 10) is unchanged from D3.1 and still extracts am\_sf<0> from CSTAT<6>, am\_sf<2> from CSTAT<7>, and am\_sf<1> from CSTAT<8>. The transmitter and receiver therefore disagree in both bit indices and am\_sf mapping, and CSTAT<8> lies outside the 8-bit 0-based CSTAT field of Figure 186-6. The lead-in on page 665 line 4 also states "The information in bits 5-7", which contradicts the CSTAT<6>/<7>/<8> bullets below it. As written, an implementation built from 186.2.4.7.6 cannot interoperate with one built from 186.2.3.5.11.

#### SuggestedRemedy

In 186.2.4.7.6 on page 665, change the three bullets to align with 186.2.3.5.11: "The value in CSTAT<5> is replicated to am\_sf<0> of the two flows" - "The value in CSTAT<6> is replicated to am\_sf<2> of the two flows" - "The value in CSTAT<7> is logically ORed with FEC\_degraded\_SER and replicated to am\_sf<1> of the two flows".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment points out an error that needs to be fixed.

Implement the suggested remedy with editorial license.

CI 186 SC 186.2.6 P668 L14 # R2-35

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (L)

The newly inserted 186.2.6 states "The ER1 FEC shall provide the ready-to-send (RTS) function using the RTS without squelch state diagram (see 178B.11) as specified in Annex 178B." This mandatory requirement has no corresponding item in the Clause 186 PICS proforma - the Major capabilities/options table in 186.8.3.1 (page 696) lists only MD, DC, LBL, LBR, AML and TS. Comparable mandatory APSU requirements elsewhere in the draft do have PICS items (PMDAPSU for 178.8.9 on page 414 and for 179.8.9 on page 459, AUIPSU for 176C.6.3 on page 819).

#### SuggestedRemedy

Add an item to the Major capabilities/options table in 186.8.3.1 on page 696, consistent with the PMDAPSU entries in Clauses 178 and 179, e.g. Item "FECAPSU", Feature "APSU functions in the ER1 FEC", Subclause "186.2.6", Value/Comment "Provides the RTS function using the RTS without squelch state diagram of 178B.11", Status "M", Support "Yes [ ]".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

CI 186 SC 186.2.6 P668 L14 # R2-36

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (CA)

186.2.6 requires the 800GBASE-ER1 FEC sublayer to use the "RTS without squelch state diagram", but the criterion for choosing between the two variants, given in the referenced subclause 178B.11 (page 906 lines 19 to 22), is expressed solely in terms of PMD behaviour: "A coherent PMD that squelches the output when the PMD is not ready to send uses the RTS with squelch state diagram ... A coherent PMD that does not squelch the output ... uses the RTS without squelch state diagram." Clauses 186 and 187 contain no statement that the 800GBASE-ER1 PMD does not squelch its output, so the selection made in 186.2.6 is not traceable to the stated criterion. This contrasts with the 800GBASE-LR1 case, where the PMD itself provides the RTS function (185.5.11, page 628 line 51) and squelching is explicitly specified (page 629 line 1).

#### SuggestedRemedy

Reword the criterion in 178B.11 (page 906 lines 19 to 22) in terms of the coherent interface rather than the PMD, consistent with 178B.11.2 (page 906 lines 36 to 37), e.g. "A coherent interface whose PMD squelches the output when not ready to send uses the RTS with squelch state diagram (Figure 178B-14) - otherwise it uses the RTS without squelch state diagram (Figure 178B-15)." Alternatively, add a statement in 187.5.11 (page 707) that the 800GBASE-ER1 PMD does not squelch its output when not ready to send.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Resolved using the response to comment R2-102.

CI 120F SC 120F.1 P733 L44 # R2-38

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

In the legend of the replacement Figure 120F-1, the entry reads "1.6TAUI-16 = 1.6 Tb/s 16--LANE ATTACHMENT UNIT INTERFACE" with a doubled hyphen. The same typo present in D3.1 was corrected to "16-LANE" in the replacement Figure 120G-1 on page 739 of D3.2, but was left uncorrected here, so the two otherwise-identical legends are now inconsistent. (The legend text carries no ballot line number - line 44 is the nearest numbered line above it.)

#### SuggestedRemedy

In the legend of Figure 120F-1, change "16--LANE" to "16-LANE" so the entry reads "1.6TAUI-16 = 1.6 Tb/s 16-LANE ATTACHMENT UNIT INTERFACE", matching the legend of Figure 120G-1 on page 739.

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 176C SC 176C.7 P812 L25 # R2-39

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (E)

In Table 176C-8, the "Minimum channel signal to common-mode ratio, SCMRCH" row cites 176C.7.3.2 in the Reference column. Subclause 176C.7.3.2 is "Channel modal ERL" (page 816) - SCMRCH is specified in 176C.7.4 "Channel signal to common-mode ratio" (page 816 line 49). The equivalent rows in Table 178-16 (page 405) and the Clause 179 channel summary table (page 448) correctly cite 178.10.5 and 179.11.5. The row is also out of numeric order relative to the preceding 176C.7.3.3 row. The Reference column of this table was edited in D3.2 (the AC-coupling row was set to 176C.7.5), so this stale reference was missed. The row sits on an unnumbered table-cell line - line 25 is the nearest numbered line above.

#### SuggestedRemedy

In Table 176C-8 on page 812, change the Reference cell of the "Minimum channel signal to common-mode ratio, SCMRCH" row from "176C.7.3.2" to "176C.7.4".

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 176C SC 176C.7.5 P817 L1 # R2-40

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

The heading of the newly inserted subclause 176C.7.5 reads "AC Coupling" (unhyphenated, second word capitalized). This is inconsistent with the parallel headings 178.10.4 "AC-coupling" (page 411) and 179.9.1 "AC-coupling" (page 427), with the body text of 176C.7.5 itself on page 817 line 3 ("The channel AC-coupling specifications are identical to those of 178.10.4."), with Table 176C-8 on page 812 ("Maximum AC-coupling 3 dB corner frequency"), with PICS item CC4 on page 821 ("Channel AC-coupling"), and with the sentence-case style of sibling headings 176C.7.1 through 176C.7.4. The same string is propagated to the TOC entry on page 48 line 28.

#### SuggestedRemedy

Change the heading on page 817 line 1 from "176C.7.5 AC Coupling" to "176C.7.5 AC-coupling", and update the corresponding table-of-contents entry on page 48 line 28 to match.

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 176C SC 176C.9.4.3 P821 L14 # R2-41

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

D3.2 adds new subclause 176C.7.5 (AC-coupling) and updates the AC-coupling row of Table 176C-8 to reference it, but the parallel PICS item CC4 (Channel AC-coupling) in 176C.9.4.3 still cites the parent subclause 176C.7. All sibling PICS rows in the same table cite leaf subclauses (CC1 to 176C.7.1, CC2 to 176C.7.2, CC3 to 176C.7.3), so CC4 is the only row pointing at the parent. This is a missed consequential edit from the change that created 176C.7.5. The affected PICS item is CC4.

#### SuggestedRemedy

In the Channel PICS table of 176C.9.4.3 on page 821 line 14, change the Subclause cell for item CC4 (Channel AC-coupling) from "176C.7" to "176C.7.5".

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 176D SC 176D.8.11 P838 L26 # R2-42

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (E)

The NOTE newly added in D3.2 to 176D.8.11 (page 838 lines 26 to 29), and its twin in 176C.6.4.4 (page 807 lines 47 to 51), recommend a histogram-extrapolation method that differs from every other "In order to predict whether a receiver meets the BLER requirement in a short test time" NOTE in the draft. The ten pre-existing NOTES (pages 399, 440, 492, 494, 523 twice, 554, 555, 587 twice), unchanged from D3.1, use a linear fit of  $\log_{10}(Hm(i)(k))$  for  $k = n-2$  to  $n$  over "the three highest bins having a count of 10 or more", together with a check that the histogram slope is not increasing. The new NOTE instead uses a linear fit of the slope of  $\log_{10}(Hm(k))$  for  $k = 0$  to  $n$  with  $Hm(n)$  set to  $3/N$  and the intercept  $Hm(0)$  set to 1, and omits the slope-increase check. In addition, the new NOTE is self-inconsistent: it defines  $n$  such that  $Hm(k) = 0$  for all  $k \geq n$  and sets  $Hm(n)$  to  $3/N$  for the fit, but then states "The fit is performed only for values of  $k$  that have  $Hm(k) > 0$ ", which literally excludes the  $k = n$  anchor point it just constructed. The same NOTE appears in 176C.6.4.4.

#### SuggestedRemedy

Harmonize the extrapolation guidance. Either replace the new NOTE in 176D.8.11 (page 838 lines 26 to 29) and in 176C.6.4.4 (page 807 lines 47 to 51) with the wording already used in the other Error ratio requirements subclauses, or, if the  $k = 0$  to  $n$  method is intentionally preferred, apply it consistently to all twelve NOTES and state the rationale. In either case, correct the self-inconsistency by amending the last sentence to read "The fit is performed only for values of  $k$  that have  $Hm(k) > 0$ , together with the substituted point at  $k = n$ ."

Proposed Response Response Status W

PROPOSED REJECT.  
The NOTE text used in Annex 176C and Annex 176D (for AUI-C2C and AUI-C2M respectively) suggests a different extrapolation method from the ones used in other places (PMD clauses).  
The difference is deliberate, based on the fact that the error rates allocated for AUIs are significantly lower than the ones allocated for PMDs.  
As a result, with practical test times, good parts are expected to have no counts in bins 4 and above ( $k \geq 4$ ). Therefore the extrapolation method used for PMDs (which requires "bins having a count of 10 or more") would cause extrapolation from bin 1 or bin 0, where the distribution is not expected to follow a linear trend. This was considered inappropriate and thus the method in the NOTE added to the PMD clauses was not applied to the AUI annexes. See the response to comment I-106 ([https://www.ieee802.org/3/dj/comments/D3p0/8023dj\\_D3p0\\_comments\\_final\\_id.pdf#page=33](https://www.ieee802.org/3/dj/comments/D3p0/8023dj_D3p0_comments_final_id.pdf#page=33)), and also comment I-226 in the same report and the presentations referenced therein. The NOTE in the AUI annexes was adopted by the response to comment R1-201, which was adopted with consensus indicated by a straw poll (see [https://www.ieee802.org/3/dj/comments/D3p1/8023dj\\_D3p1\\_comments\\_final\\_id.pdf#page=51](https://www.ieee802.org/3/dj/comments/D3p1/8023dj_D3p1_comments_final_id.pdf#page=51)) and the presentations referenced therein).  
The guidance is therefore different and the text should not be changed.  
The NOTE text states that "For the linear fit,  $Hm(n)$  is set to  $3/N$ " before "The fit is performed only for values of  $k$  that have  $Hm(k) > 0$ ". Therefore,  $k=n$  is included by definition.

If the text were interpreted as if  $Hm(n)$  is not included, the assignment of  $Hm(n)$  to  $3/N$  would have no effect. Additional emphasis as suggested in the comment is not necessary.

CI 178B SC 178B.4 P876 L25 # R2-43

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (CA)

The first APSU bullet requires an ISL's interfaces and sublayers to "implement the RTS function (see 178B.6 and 178B.10)". 178B.6 is the RTS function for PAM4 interfaces (page 878) and 178B.10 the RTS function for coherent interfaces (page 905) - these are mutually exclusive per interface type. The bullet at lines 44 to 45 on the same page treats the two cases as alternatives, and the PICS in 178B.13 makes MC1 (APSU for PAM4 interfaces, 178B.5) and MC2 (APSU for optical coherent, 178B.10) an O/1 exclusive choice. The conjunctive "and" literally demands both.

#### SuggestedRemedy

On page 876 line 25, change "implement the RTS function (see 178B.6 and 178B.10)" to "implement the RTS function (see 178B.6 or 178B.10, as applicable)".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
The comment seems to refer to line 6.  
Change: "implement the RTS function (see 178B.6)"  
To: "implement the RTS function (see 178B.6 for PAM4 ISL's and 178B.10 for coherent ISLs)"

CI 178B SC 178B.4 P876 L44 # R2-44

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (CA)

In the text inserted into 178B.4 by the resolution of D3.1 comments R1-140 and R1-142, the cross-reference is missing a space: "the RTS and ILT functions defined in 178B.6 and 178B.7". The parallel reference in the very next sentence (line 45) correctly reads "defined in 178B.10", and this is the only missing-space cross-reference of this form in the draft.

#### SuggestedRemedy

On page 876 line 44, change "the RTS and ILT functions defined in 178B.6 and 178B.7" to "the RTS and ILT functions defined in 178B.6 and 178B.7".

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178B SC 178B.5 P877 L4 # R2-45

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D RTS (B) (CA)

The D3.2 rewrite of 178B.5 replaced the D3.1 sentence "The RTS function uses inputs from the adjacent interface (via the service interface), its peer interface..." with a bulleted list whose first item broadens the adjacent-side input to "the adjacent interface and signal indication logic (SIL) in one or more sublayers between the local interface and its adjacent interface (via the service interface)". The parallel overview of the same RTS behaviour in 178B.6 (page 878 lines 39 to 40), a subclause also edited in D3.2, still states the input narrowly as "the SIGNAL\_OK parameter from the adjacent interface". The two descriptions of the same input disagree about where SIGNAL\_OK originates, and the newly introduced SIL concept appears in only one of the two places.

#### Suggested Remedy

Align the 178B.6 overview with the new 178B.5 text. On page 878 lines 39 to 40, change "Wait for the adjacent interface to be ready for DATA mode, as indicated by the SIGNAL\_OK parameter from the adjacent interface being equal to READY or OK." to "Wait for the adjacent interface to be ready for DATA mode, as indicated by the SIGNAL\_OK parameter received on the service interface, from the adjacent interface or from the SIL of an intervening sublayer, being equal to READY or OK." Alternatively, if SIL is not intended as a distinct input source, revert the SIL addition in the first bullet of 178B.5.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, related changes would be an improvement to the draft.

The text in 178B.5 is explaining in great detail how the SIGNAL\_OK traverse from one side of a retimer to the other. The phrase "from the adjacent interface" used in 178B.6 is used to differentiate between the SIGNAL\_OK that ultimately comes from the adjacent interface rather than the one that goes to the adjacent interface as illustrated in Figure 178B-4. Figure 178B-4 clearly illustrates what is meant by "SIGNAL\_OK from the adjacent interface". It would be helpful to point the reader to the figure. On page 878 line 40, change "by the SIGNAL\_OK parameter from the adjacent interface" to "by the SIGNAL\_OK parameter from the adjacent interface (see Figure 178B-4)".

CI 178B SC 178B.8.2.1 P894 L5 # R2-46

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D Variables (B) (CA)

The D3.2 definition of mr\_adj\_los\_mode no longer states what the variable does - the D3.1 statement that it controls the behaviour of the training control state diagram was deleted and not replaced by any cross-reference. The neighbouring management variables mr\_restart and mr\_training\_enable state their effect. The functional description now appears only under adj\_los\_mode in 178B.8.3.1 (page 897), with no pointer from 178B.8.2.1. (The definition sits on unnumbered lines between line 4 and line 9 - line 4 is the nearest numbered line above.)

#### Suggested Remedy

Append a cross-reference to the mr\_adj\_los\_mode definition, e.g. "This variable, together with tx\_lp\_on\_adj\_los\_ability and tx\_sq\_on\_adj\_los\_ability, determines the value of adj\_los\_mode (see 178B.8.3.1)."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Implement suggested remedy with editorial license.

CI 178B SC 178B.8.3 P896 L40 # R2-48

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (CA)

The resolutions of D3.1 comments R1-182 and R1-183 restructured the opening paragraphs of 178B.8.3 to a per-lane subject, but the restructuring also deleted the trailing clause "and their associated variables, functions, counters and timers defined in this subclause", which was present in D3.1 and retained in the agreed remedy. The paragraphs now read "Each lane of an interface using the E1 format implements one instance of each of the training control, the training frame lock and the coefficient update state diagrams." and "Each lane of an interface using the O1 format implements one instance of each of the training control and the training frame lock state diagrams." The phrase does not appear anywhere else in D3.2, so 178B.8.3 no longer states that the associated variables, functions, counters and timers are instantiated per lane. The parallel per-interface subclause 178B.8.2 (page 893 lines 34 to 35) retains the equivalent wording, so the two subclauses are now inconsistent. (The paragraphs sit on unnumbered lines following the 178B.8.3 heading - line 32 is the nearest numbered line above.)

#### SuggestedRemedy

Restore the trailing clause in both paragraphs of 178B.8.3: "Each lane of an interface using the E1 format implements one instance of each of the training control, the training frame lock and the coefficient update state diagrams, and their associated variables, functions, counters and timers defined in this subclause." and "Each lane of an interface using the O1 format implements one instance of each of the training control and the training frame lock state diagrams, and their associated variables, functions, counters and timers defined in this subclause."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
It seems this was an D3.2 implementation error that should be rectified.  
Implement the suggested remedy with editorial license.

CI 178B SC 178B.8.3.1 P899 L34 # R2-50

Hajduczenia, Marek

RG Nets

Comment Type ER Comment Status D (B) (CA)

The resolution of D3.1 comment R1-9 committed to adding a terminating period to the FILL entry in the tx\_mode value list in 178B.8.3.1. That edit was not made: the FILL entry ("FILL: transmit either training frames or LOCAL\_PATTERN") is unchanged from D3.1 and still lacks a period. Instead, the terminating periods were removed from the three sibling entries (TRAINING, LOCAL\_PATTERN, DATA), which had them in D3.1. The list is now uniformly periodless, which may reflect harmonization with the new periodless c\_tx\_mode list in 178B.11.2.1, but the agreed edit is absent.

#### SuggestedRemedy

Either implement the agreed disposition by adding a terminating period to the FILL entry ("FILL: transmit either training frames or LOCAL\_PATTERN.") and restoring the periods on the TRAINING, LOCAL\_PATTERN and DATA entries - or, if the periods were deliberately removed to harmonize with the c\_tx\_mode value list in 178B.11.2.1, state that in the comment response so the record reflects the change actually made.

Proposed Response Response Status W

PROPOSED REJECT.

According to the "2021 IEEE SA Standards Style Manual" in "13.3 Lists" it states in regards to lists: "Closing punctuation should be omitted for phrases."

Rather than adding period to one of the entries, the period was removed from all entries to comply with the style manual.

CI 178B SC 178B.11.2.1 P907 L30 # R2-51

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D c\_tx\_mode (B) (CA)

The c\_tx\_mode enumerated value for the not-ready-to-send signal is spelled inconsistently. The variable definition in 178B.11.2.1 on page 907 spells it "NOT-RTS" with a hyphen, and 186.2.6 on page 668 line 21 likewise uses "NOT-RTS", but the new state diagram Figure 178B-15 on page 910 line 12 assigns "c\_tx\_mode <= NOT\_RTS" with an underscore. All of this text is new in D3.2. The underscore form matches the convention used for other multi-word enumerated values, e.g. IN\_PROGRESS in c\_rts\_status (page 907 line 23). (The definition sits on an unnumbered definition-list line - line 24 is the nearest numbered line above.)

#### SuggestedRemedy

Use a single spelling throughout. Change "NOT-RTS" to "NOT\_RTS" in the c\_tx\_mode definition in 178B.11.2.1 on page 907 and in the sentence on page 668 line 21, matching Figure 178B-15.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Resolved using the response to comment R2-132

[Editor's note: change line from 24 to 30]

CI 178B SC 178B.12 P911 L3 # R2-52

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (CA)

The introductory sentence of 178B.12 cites only "Table 178B-3 and Table 178B-4" (the PAM4 interface tables), while the following sentence at lines 5 to 6 correctly cites all four management tables, Table 178B-3 through Table 178B-6. D3.2 split the D3.1 management tables into PAM4 and coherent versions, but the update was applied only to the MDIO-mapping sentence. As written, the control and status variables for coherent interfaces are not identified as variables related with this annex.

#### SuggestedRemedy

Change the sentence on page 911 line 3 to "The control and status variables related with this annex are listed in Table 178B-3, Table 178B-4, Table 178B-5, and Table 178B-6.", adjusting the table numbers to whatever final numbering results from resolving the duplicate table numbering in Annex 178B.

Proposed Response Response Status W

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

CI 178B SC 178B.12 P912 L26 # R2-53

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (CA)

In Table 178B-4 the new rx\_ok row cites MDIO register/bit number "1.1478.7:0c". Footnote c states "Bit reference is provided for lane 0, bits for lanes 1 to 7 are located in the same register." That footnote presupposes a lane-0-only citation, but 1.1478.7:0 already spans all eight lanes: Table 45-133e (45.2.1.169e, page 104) defines 1.1478.7 as Receiver OK lane 7 through 1.1478.0 as Receiver OK lane 0. The footnote therefore has no referent. Every other footnote-c entry in the same table follows the lane-0 convention: polarity\_correction is "1.1476.0c" and lane\_training\_status is "1.1477.1:0c" (Table 45-133d assigns 1.1477.1:0 to lane 0, up to 1.1477.15:14 for lane 7).

#### SuggestedRemedy

In Table 178B-4 on page 912 line 26, change the rx\_ok MDIO register/bit number from "1.1478.7:0c" to "1.1478.0c" so the citation is the lane 0 bit and footnote c applies consistently. Alternatively, if the intent is to cite the whole eight-lane field, delete the footnote c marker from this row.

Also, remove the golden color background for associated MDIO register/bit reference

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the the change proposed in the suggested remedy is an improvement to the draft.

In Table 178B-4 on page 912 line 26, change the rx\_ok MDIO register/bit number from "1.1478.7:0c" to "1.1478.0c"

Implement the suggested remedy.

CI 179B SC 179B.3.1 P926 L30 # R2-54

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (E)

Text added in D3.2 in response to D3.1 comment R1-150 states on page 926 lines 29 to 30 that the MDI connector configuration used to define the reference insertion loss is the "Single Row Surface Mount Technology Connector and Cage" defined in the OSFP1600 specification (see 179C.2.3). The cross-reference does not resolve: 179C.2.3 (OSFP1600, page 945 lines 31 to 41) does not define, name or mention a "Single Row Surface Mount Technology Connector and Cage" - it requires compliance with the OSFP MSA "Octal Small Form Factor Pluggable Module, Rev 5.22" specification and points to Figure 179C-5, Figure 179C-6 and Table 179C-4. The term appears nowhere else in D3.2. A normative requirement therefore rests on an unresolvable citation. Additionally, page 926 line 32 contains a duplicated article: "Usage of the the Single Row Surface Mount Technology Connector and Cage for cable assembly test fixtures is recommended."

#### SuggestedRemedy

On page 926 lines 29 to 30, cite the source that defines the configuration rather than 179C.2.3, e.g. "...is the Single Row Surface Mount Technology Connector and Cage defined in the OSFP Octal Small Form Factor Pluggable Module, Rev 5.22 specification (the OSFP1600 mechanical specification referenced in 179C.2.3)." Alternatively add the configuration name explicitly to 179C.2.3 so the existing cross-reference resolves. Also delete the duplicated "the" on page 926 line 32.

Proposed Response Response Status W

PROPOSED REJECT.

The text in 179B.3.1 points to 179C.2.3, where a reference to the OSFP1600 specification is provided. The specific configuration is part of that specification. The cross-reference refers to the "OSFP1600 specification", not to the configuration.

Pointing to an external reference once is sufficient. No change is required.

The extra "the" is addressed by the response to comments R2-84 and R2-104.

CI 179B SC 179B.3.1 P926 L31 # R2-55

Hajduczenia, Marek

RG Nets

Comment Type TR Comment Status D (B) (E)

In D3.1 the insertion-loss accounting sentences in 179B.2.1 and 179B.3.1 were identical and non-normative ("are to be accounted for in the measurements"). D3.2 rewrote only 179B.3.1 to "...shall be accounted for in the measurements" (page 926 lines 31 to 32) while leaving the parallel sentence in 179B.2.1 unchanged (page 926 lines 2 to 3). Two parallel provisions covering the same obligation for the two test fixtures now carry different normative strength, leaving it ambiguous whether the TP2/TP3 fixture accounting is required. Compare the parallel text in 179B.2.1.

#### SuggestedRemedy

Align the two provisions. Either change 179B.2.1 (page 926 line 2) to read "Differences between the insertion loss of an actual test fixture and the reference insertion loss shall be accounted for in the measurements.", or revert 179B.3.1 (page 926 line 31) to the non-normative "are to be accounted for in the measurements".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The comment points out an inconsistency between the subclauses that define the individual test fixtures with regards to the differences from the reference IL.

The suggested remedy includes two options, aligning the text in 179B.2.1 to the text in 179B.3.1 (recently modified to "shall be") or reverting the change in 179B.3.1 (back to "are to be").

The change was made as a result of comment R1-150 (see <[https://www.ieee802.org/3/dj/comments/D3p1/8023dj\\_D3p1\\_comments\\_final\\_id.pdf#page=38](https://www.ieee802.org/3/dj/comments/D3p1/8023dj_D3p1_comments_final_id.pdf#page=38)>). However, the new text is inconsistent with previous test fixture Annexes (110B, 162B) and similar statements in PMD clauses (85, 92, 93, 94). Also, "accounting for the differences" is not a compliance requirement of the test fixture itself - it is guidance for the user of the test fixture. The wording "are to be accounted for" is more suitable for this purpose.

In 179B.3.1, change "shall be accounted for" to "are to be accounted for".

CI 179B SC 179B.5.4 P937 L26 # R2-56

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (E)

PICS item TF3 "Mated test fixtures ERL / Greater than or equal to 10.3 dB" cites subclause 179B.4.2. In D3.2, 179B.4.2 was converted into a container heading ("Mated test fixtures return loss") and the ERL requirement ("The mated test fixtures ERL shall be greater than or equal to 10.3 dB, with Tfx equal to 0.15 ns") was moved into the new 179B.4.2.1 (page 930 lines 8 to 13). The TF3 citation therefore no longer points to the requirement. Sibling rows TF5 and TF6 were updated for the same restructuring (179B.4.4 and 179B.4.3 in D3.1 to 179B.4.2.3 in D3.2), so TF3 is an incomplete follow-through.

#### SuggestedRemedy

In the Subclause cell of PICS item TF3 on page 937 line 26, change "179B.4.2" to "179B.4.2.1".

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 179B SC 179B.5.4 P937 L29 # R2-57

Hajduczenia, Marek

RG Nets

Comment Type T Comment Status D (B) (E)

In the PICS table of 179B.5.4, the Value/Comment cell for item TF4 (Mated test fixtures common-mode to differential-mode insertion loss, 179B.4.3) is empty in D3.2. In D3.1 this cell read "Per Equation (179B-8)". Subclause 179B.4.3 is unchanged and imposes two mandatory requirements: the channel signal to common-mode ratio SCMRCH greater than 12 dB using the procedure of 179.11.5, and the common-mode to differential-mode insertion loss meeting Equation (179B-8). Item TF4 therefore carries status M with no stated requirement, and no PICS item covers the SCMRCH condition. All neighbouring items (TF1, TF2, TF3, TF5, TF6, TF7) do state a Value/Comment.

#### SuggestedRemedy

Populate the Value/Comment cell for TF4 to cover both requirements of 179B.4.3, e.g. "SCMRCH greater than 12 dB and per Equation (179B-8)" - alternatively restore "Per Equation (179B-8)" in TF4 and add a separate PICS item for the SCMRCH requirement.

Proposed Response Response Status W

PROPOSED REJECT.

The referenced subclause defines the requirements clearly. There is precedence to using this format for similar PICS items with no value/comment.

The suggested changes do not improve the clarity of the PICS.

CI 179B SC 179B.5.4 P937 L32 # R2-58

Hajduczenia, Marek

RG Nets

Comment Type E Comment Status D (B) (E)

In the PICS proforma table of 179B.5.4, the Value/Comment cells for items TF5 (line 32) and TF6 (line 35) read "Per Table (179B-2)". Parentheses around the number are the IEEE 802.3 convention for equations only (cf. TF1, "Per Equation (179B-3)") - tables are cited without parentheses. Item TF7 in the same table correctly cites "Table 179B-4", and all other "Per Table ..." PICS entries in the draft omit the parentheses. These two cells were rewritten in D3.2 (in D3.1 they read "Per Equation (179B-6)" and "Per Equation (179B-7)").

#### SuggestedRemedy

In the TF5 row (line 32) and TF6 row (line 35) on page 937, change "Per Table (179B-2)" to "Per Table 179B-2".

Proposed Response Response Status W

PROPOSED REJECT.

Although the comment proposes an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

The reference is to Equation (179B-2) but the cross-reference format is incorrect. With the proper format the reference should be as "Equation (179B-2)".

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 45 SC 45.2.1 P76 L44 # R2-75

Bruckman, Leon

NVIDIA

Comment Type TR Comment Status D (B) (L)

Register 1.1478 is listed as "Reserved" in Table 45-3 despite D3.2 adding subclause 45.2.1.169e "PMA/PMD interface lane training status 2 (Register 1.1478)" with a full bit-field definition in Table 45-133e. Any reader consulting Table 45-3 for Register 1.1478 will incorrectly conclude it is reserved and find no cross-reference to 45.2.1.169e.

#### SuggestedRemedy

In Table 45-3, change the entry for Register 1.1478 from: "1.1478 Reserved" to: "1.1478 PMA/PMD interface lane training status 2 45.2.1.169e"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.1 P78 L9 # R2-76

Bruckman, Leon

NVIDIA

Comment Type TR Comment Status D (B) (L)

Table 45-3 lists the PMA transmit test block error bin counters as "1.2900 through 1.3707" and the receive counters as "1.3708 through 1.3715." The normative text in 45.2.1.272 (page 127, lines 43-45) explicitly states the transmit direction registers span from 1.2900 to 1.3307 and the receive direction registers span from 1.3308 to 1.3715. Arithmetic confirms: 17 bins x 8 PMALs x 3 registers = 408 registers per direction; 2900+408-1=3307 (transmit end); 3308+408-1=3715 (receive end). The values "1.3707" and "1.3708" appear to be transpositions of "1.3307" and "1.3308."

#### SuggestedRemedy

In Table 45-3, change: "1.2900 through 1.3707 PMA transmit test block error bin counters" to "1.2900 through 1.3307 PMA transmit test block error bin counters" and "1.3708 through 1.3715 PMA receive test block error bin counters" to "1.3308 through 1.3715 PMA receive test block error bin counters."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.1 P76 L43 # R2-77

Bruckman, Leon

NVIDIA

Comment Type E Comment Status D (B) (L)

The D3.2 Table of Contents and subclause title for 45.2.1.169d was updated to "PMA/PMD interface lane training status 1 (Register 1.1477)" to distinguish it from new subclause 45.2.1.169e. However, Register 1.1477 in Table 45-3 still reads "PMA/PMD interface lane training status" without the "1" suffix, inconsistent with the updated subclause title.

#### SuggestedRemedy

In Table 45-3, change the description for Register 1.1477 from "PMA/PMD interface lane training status" to "PMA/PMD interface lane training status 1" to match the 45.2.1.169d subclause title.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.1 P101 L1 # R2-78

Bruckman, Leon

NVIDIA

Comment Type TR Comment Status D (B) (L)

The amendment instruction reads "Insert 45.2.1.168a through 45.2.1.168f after 45.2.1.168 as follows:" but the content that follows now comprises 45.2.1.168a plus 45.2.1.169b through 45.2.1.169g (seven subclauses). The instruction was not updated when D3.2 renumbered the subclauses from 168b-168f to 169b-169g and added new 45.2.1.169e. An editor applying this amendment would be misled into creating subclauses 168b-168f and would not know to insert 169b-169g.

#### SuggestedRemedy

Change the amendment instruction from "Insert 45.2.1.168a through 45.2.1.168f after 45.2.1.168 as follows:" to "Insert 45.2.1.168a and 45.2.1.169b through 45.2.1.169g after 45.2.1.168 as follows:"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The subclause numbering is wrong and needs to be corrected.

On page 101:

Change:

"Insert 45.2.1.168a through 45.2.1.168f after 45.2.1.168 as follows:"

To:

"Insert 45.2.1.168a through 45.2.1.168g after 45.2.1.168 as follows:"

Renumber 45.2.1.169b through 45.2.1.169g so they become 45.2.1.168b through 45.2.1.168g

CI 178B SC 178B.12 P911 L14 # R2-79

Bruckman, Leon

NVIDIA

Comment Type TR Comment Status D (B) (CA)

D3.2 introduces duplicate table numbers in Annex 178B. Table 178B-3 now appears twice: once as "Control field structure for the O1 format" (178B.7.4, page 886) and again as "Control variables and MDIO mapping for PAM4 interfaces" (178B.12, page 911). Similarly, Table 178B-4 appears as "Status field structure for the E1 format" (178B.7.5, page 887) and "Status variables and MDIO mapping for PAM4 interfaces" (178B.12, page 912). Table 178B-5 appears as "Status field structure for the O1 format" (178B.7.5, page 888) and "Control variables and MDIO mapping for coherent interfaces" (178B.12, page 913). In D3.1, the MDIO mapping tables were numbered 178B-6 and 178B-7. D3.2 renumbered and split them into 178B-3 through 178B-6, creating collisions with the pre-existing field-structure tables. All cross-references to "Table 178B-3", "178B-4", and "178B-5" throughout the document (Clauses 179, 180, 181, 182, 183, Annexes 176C, 176D) are now ambiguous.

#### Suggested Remedy

Renumber the MDIO mapping tables in 178B.12 to non-conflicting numbers (e.g., restore 178B-6 through 178B-9 as in D3.1, or renumber the field-structure tables to 178B-2 through 178B-5 and the MDIO tables to 178B-6 through 178B-9). Update all cross-references accordingly.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Resolved using the response to comment R2-13.

CI 186 SC 186.2.4.7.6 P665 L6 # R2-80

Bruckman, Leon

NVIDIA

Comment Type TR Comment Status D (B) (L)

D3.2 updated 186.2.3.5.11 (transmit CSTAT) to shift the bit assignments from CSTAT<6/7/8> to CSTAT<5/6/7>: am\_sf<0> -> CSTAT<5>, am\_sf<2> -> CSTAT<6>, am\_sf<1> -> CSTAT<7>. However, 186.2.4.7.6 (receive CSTAT) was not updated and still reads: CSTAT<6> -> am\_sf<0>, CSTAT<7> -> am\_sf<2>, CSTAT<8> -> am\_sf<1>. The transmit and receive CSTAT bit assignments are now inconsistent: the transmitter encodes am\_sf into bits 5-7 but the receiver attempts to decode from bits 6-8. A link implemented per this specification would fail to correctly transfer the am\_sf<2:0> alignment marker subfield information.

#### Suggested Remedy

Update 186.2.4.7.6 to match the transmit mapping in 186.2.3.5.11: change "CSTAT<6> is replicated to am\_sf<0>" to "CSTAT<5> is replicated to am\_sf<0>", "CSTAT<7> is replicated to am\_sf<2>" to "CSTAT<6> is replicated to am\_sf<2>", and "CSTAT<8> is logically ORed" to "CSTAT<7> is logically ORed". Update the reference to "bits 5-7" accordingly.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment points out an error that needs to be fixed.

Resolved using the response to comment R2-34.

[Editor's note: changed page number from 664 to 665]

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

CI 182 SC 182.12.4.6 P563 L17 # R2-81

Bruckman, Leon

NVIDIA

Comment Type TR Comment Status D PICS (B) (OI)

Table in 182.12.4.6 contains two PICS items both labeled "OM8": the first is "Transmitter functional symbol error histogram" (182.9.8) and the second is "Transmitter overshoot and undershoot" (182.9.9). The second OM8 and all subsequent items (OM9 through OM12) are offset by 1: OM8 should be OM9, OM9 should be OM10, etc. The same duplicate numbering exists in 183.12.4.4 (page 594).

## SuggestedRemedy

In 182.12.4.6, renumber the duplicate OM8 ("Transmitter overshoot and undershoot") to OM9 and renumber all subsequent items OM9->OM10, OM10->OM11, OM11->OM12. Apply the same correction in 183.12.4.4.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft.

In 182.12.4.6 and 183.12.4.4 change duplicate 'OM8' for "Transmitter functional symbol error histogram" to 'OM7'.

Implement with editorial license.

CI 178B SC 178B.13.5 P917 L41 # R2-83

Bruckman, Leon

NVIDIA

Comment Type E Comment Status D (B) (CA)

PICS items SM3 ("RTS with squelch state") and SM4 ("RTS without squelch state") in 178B.13.5 reference "178B.11" (a section heading). The corresponding items SM1 and SM2 reference specific subclauses "178B.11.1" and "178B.11.2". SM3 and SM4 should reference "178B.11.3" (the subclause containing the normative "shall" language for these states), consistent with the pattern established by SM1/SM2.

## SuggestedRemedy

Change the Reference column for SM3 and SM4 in 178B.13.5 from "178B.11" to "178B.11.3."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 179B SC 179B.4.2 P926 L32 # R2-84

Bruckman, Leon

NVIDIA

Comment Type E Comment Status D (B) (E)

Duplicate word in 179B.4.2: "Usage of the the Single Row Surface Mount Technology (SMT) connector." The word "the" appears twice consecutively.

## SuggestedRemedy

Delete the duplicate "the": change "Usage of the the Single Row Surface Mount Technology (SMT) connector" to "Usage of the Single Row Surface Mount Technology (SMT) connector."

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 179B SC 179B.5.4 P937 L26 # R2-85

Bruckman, Leon

NVIDIA

Comment Type T Comment Status D (B) (E)

PICS item TF3 "Mated test fixtures ERL" references "179B.4.2" which, after D3.2 restructuring, is now just a section heading. The ERL >= 10.3 dB normative requirement is now in 179B.4.2.1. This means TF3 does not point to any normative "shall" statement.

## SuggestedRemedy

Change the Reference column for TF3 from "179B.4.2" to "179B.4.2.1."

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178B SC 178B.8.3.1 P898 L13 # R2-86

WANG, Xuebo Huawei Technologies Co., Ltd

Comment Type TR Comment Status D (B) (CA)

The definition of the variable local\_tf\_lock could be clearer. The current definition says that local\_tf\_lock is true when [...] and the training frame marker position has been identified on a lane of the interface. Actually, identifying the training frame marker position can only be achieved by a receiver. This point should be made clear to readers for better understanding. A precedent that can be referred to is the definition of the variable frame\_lock in subclause 72.6.10.3.1.

#### Suggested Remedy

Change the statement "[...] the training frame marker position has been identified on a lane of the interface" to "[...] the training frame marker position has been identified by a receiver on a lane of the interface".

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.  
The draft is correct as written.

CI 119 SC 119.7.4.1 P201 L14 # R2-89

Nicholl, Gary Cisco Systems, Inc.

Comment Type TR Comment Status D (B) (L)

When 802.3dj added the option to support a stateless 64B/66B encoder, the PICS table in 119.7.4.1 was updated to add new PICS items TF2 and TF3, with TF2 being mandatory if the state-diagram encoder is used and TF3 being mandatory if the stateless encoder is used.

A similar change was made in the PICS table in 119.7.4.2 with the addition of new PICS items RF7 and RF8, with RF7 being mandatory if the state-diagram decoder is used and RF8 being mandatory if the stateless decoder is used.

When these changes were introduced, it appears to have been overlooked that the base standard already contains two other PICS items in Clause 119 related to the 64B/66B encoder and decoder state diagrams: SM5 and SM6 (see 119.7.4.9). These PICS items are now redundant, as they have effectively been replaced by TF2 and RF7, respectively.

Furthermore, SM5 and SM6 are inconsistent with TF2 and RF7 because they unconditionally require implementation of the state-diagram encoder and decoder, even when the optional stateless encoder and decoder are implemented. This creates conflicting PICS requirements

The simplest solution is to delete PICS items SM5 and SM6

#### Suggested Remedy

Pull in subclause 119.7.4.9 from the base standard and delete PICS items SM5 and SM6.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs be corrected.

Implement the suggested remedy with editorial license.

IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

Cl 172 SC 172.7.4.2 P271 L27 # R2-90

Nicholl, Gary Cisco Systems, Inc.

Comment Type ER Comment Status D (B) (L)

The support column for PICS items RF12, RF13 and RF14 should be "Yes [ ], No [ ]" and not "Yes [ ], N/A [ ]". A similar issue exists for PICS items TF1, TF2 and TF3 in 172.7.4.1.

**Suggested Remedy**

In subclause 172.7.4.2, update the support column for PICS items RF12, RF13 and RF14 to "Yes [ ], No [ ]".

In subclause 172.7.4.1, update the support column for PICS items TF1, TF2 and TF3 to "Yes [ ], No [ ]".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.

Implement the suggested remedy with editorial licence.

Cl 185 SC 185.5.7 P628 L27 # R2-91

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D editorial (B) (OC)

"If either Global\_PMD\_transmit\_disable is set to 1 or the variable c\_tx\_mode = QUIET (see 185.5.11)" inconsistent and awkward wording.

**Suggested Remedy**

Change to

"If either Global\_PMD\_transmit\_disable is set to 1 or c\_tx\_mode (see 185.5.11) is QUIET"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 187 SC 187.8.1 P713 L9 # R2-94

Ran, Adeo Cisco Systems, Inc.

Comment Type ER Comment Status D Test patterns (B) (OC)

Incorrect references for test patterns 5 and 7:

Pattern 5, "Scrambled idle encoded by the 800GBASE-ER1 FEC sublayer", is generated by the 800GBASE-R PCS but then descrambled and re-encoded by the 800GBASE-ER1 Transmit function. The existing references are 172.2.4 (the PCS transmit function) and 186.2.3.12, which defines a PRBS31-based test pattern generator. There is no scrambled idle generator function in clause 186.

Pattern 7, "Valid 800GBASE-R signal encoded by the 800GBASE-ER1 FEC sublayer", also has a reference to 186.2.3.12, which is irrelevant.

**Suggested Remedy**

For pattern 5, change the reference from 172.2.4 to 172.2.4.11 (external) for the scrambled idle generator, and add 186.2.3 for the 800GBASE-ER1 transmit function.

For pattern 7, delete the reference to 186.2.3.12, and add instead 186.2.3 for the 800GBASE-ER1 transmit function.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the comment identifies an error in the draft that should be corrected.

For pattern 5 change "Defined in" column to "172.2.4.11, 186.2.3"

For pattern 7 change "Defined in" column to "172.2.4, 186.2.3"

|                                                                                                                                                                                                                                                                            |                 |                     |      |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|------|---------|
| CI 186                                                                                                                                                                                                                                                                     | SC 186.2.3.11   | P661                | L 16 | # R2-96 |
| Ran, Adeel                                                                                                                                                                                                                                                                 |                 | Cisco Systems, Inc. |      |         |
| Comment Type                                                                                                                                                                                                                                                               | E               | Comment Status      | D    | (B) (L) |
| Figure 186-10 contains the label "tx_fec_scrambled" which is not defined in clause 186 or anywhere in the draft.                                                                                                                                                           |                 |                     |      |         |
| 186.2.3.9, which defines the scrambler, does not define any variables.                                                                                                                                                                                                     |                 |                     |      |         |
| SuggestedRemedy                                                                                                                                                                                                                                                            |                 |                     |      |         |
| Delete the label "tx_fec_scrambled".                                                                                                                                                                                                                                       |                 |                     |      |         |
| Proposed Response                                                                                                                                                                                                                                                          | Response Status |                     | W    |         |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                              |                 |                     |      |         |
| This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.                                                        |                 |                     |      |         |
| However, the change proposed in the suggested remedy is an improvement to the draft. The vector tx_fec_scrambled is not defined anywhere, is not adding any useful information to the figure, and could cause confusion if left in the figure (because it is not defined). |                 |                     |      |         |
| Implement the suggested remedy.                                                                                                                                                                                                                                            |                 |                     |      |         |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                     |     |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-----|---------|
| CI 177                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SC 177.4.2        | P362                | L47 | # R2-98 |
| Ran, Adeel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   | Cisco Systems, Inc. |     |         |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | T                 | Comment Status      | D   | (B) (L) |
| The input to the convolutional interleaver in Figure 177-4 is labeled "FEC:IS_UNITDATA_i.request". This is a primitive that conveys one bit at a time. But the convolutional interleaver works on 40-bit blocks ("Data from the deskewed PMA lane is fed into each delay line one RS-FEC symbol-quartet at a time") and these blocks result from further processing of the FEC:IS_UNITDATA_i.request bit stream (variable delay caused by the deskew function, and "Delay odd PCS lanes" for 800GBASE-R). "FEC:IS_UNITDATA_i.request" is incorrect and misleading. |                   |                     |     |         |
| Figure 177-12 is the inverse operation, and has "To FEC:IS_UNITDATA_i.indication" as the output - this is not incorrect because no further processing is required. But if Figure 177-4 is modified, consider applying the same change in 177-12.                                                                                                                                                                                                                                                                                                                   |                   |                     |     |         |
| An alternative to the suggested remedy is to use the graphic representation of Figure 184-4 instead of text.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                     |     |         |
| <i>SuggestedRemedy</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                     |     |         |
| In Figure 177-4 change the input label from "FEC:IS_UNITDATA_i.request" to "4 RS-FEC symbols".                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                     |     |         |
| Consider applying a similar change In Figure 177-12 for the output label.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                     |     |         |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response Status W |                     |     |         |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                     |     |         |
| This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.                                                                                                                                                                                                                                                                                                                                                |                   |                     |     |         |
| However, the change proposed in the suggested remedy is an improvement to the draft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                     |     |         |
| Change "FEC:IS_UNITDATA_i.request" in Figure 177-4 to "RS-FEC symbol-quartets".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                     |     |         |
| Change "To FEC:IS_UNITDATA_i.indication" in Figure 177-12 to "RS-FEC symbol-quartets".                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                     |     |         |
| Implement with editorial license.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                     |     |         |

Cl 185 SC 185.5.11 P628 L51 # R2-101

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D RTS (B) (CA)

"A PMD shall provide the RTS function using the RTS with squelch state diagram (see 178B.11) as specified in Annex 178B"  
The referenced subclause includes two state diagrams. The relevant one for clause 185 is Figure 178B-14.  
There is no reference to the coherent RTS function definition (178B.10).  
"Annex 178B" is redundant.

**SuggestedRemedy**

Change to "A PMD shall provide the RTS function for coherent interfaces (see 178B.10) using the RTS with squelch state diagram (Figure 178B-14)".

Proposed Response Response Status W

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

Cl 186 SC 186.2.6 P668 L14 # R2-102

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D (B) (CA)

"The ER1 FEC shall provide the ready-to-send (RTS) function using the RTS without squelch state diagram (see 178B.11) as specified in Annex 178B."  
The referenced subclause includes two state diagrams. The relevant one for clause 186 is Figure 178B-15.  
There is no reference to the coherent RTS function definition (178B.10).  
"Annex 178B" is redundant.

**SuggestedRemedy**

Change to "A PMD shall provide the RTS function for coherent interfaces (see 178B.10) using the RTS without squelch state diagram (Figure 178B-15)".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change the text to:

"The ER1 FEC shall provide the ready-to-send (RTS) function for coherent interfaces (see 178B.10) using the RTS without squelch state diagram (Figure 178B-15)."

Cl 180 SC 180.5.12 P471 L18 # R2-103

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D editorial-RTS (B) (CA)

"A PMD shall provide the ready-to-send (RTS) function and the ILT function with a training frame of O1 format, specified in Annex 178B"  
In D3.2, Annex 178B includes two RTS functions - one for PAM4 and one for coherent, and one ILT function that was renamed to be specific to PAM4. Therefore specific references are required.

Also applies to 179.8.9, 181.5.12, 182.5.12, and 183.5.12, and with different wording, to the NOTE in 176C.3 and 176D.3.

**SuggestedRemedy**

Change to

"A PMD shall provide the RTS function for PAM4 interfaces specified in 178B.6 and the ILT function for PAM4 interfaces specified in 178B.7 with the O1 training frame format".

Apply the same change in 181.5.12, 182.5.12, and 183.5.12.

Apply a similar change in 179.8.9 except use E1 instead of O1.

In the NOTE text in 176C.3 and 176D.3, change from

"include the inter-sublayer link training (ILT) function with E1 format and the ready-to-send (RTS) function, as specified in Annex 178B"

to

"include the RTS function for PAM4 interfaces specified in 178B.6 and the ILT function for PAM4 interfaces specified in 178B.7 with the E1 training frame format".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In 180.5.12, change the reference of "RTS function" to "the ready-to-send (RTS) function of PAM4 interfaces specified in 178B.6 and the ILT function for PAM4 interfaces specified in 178B.7 with the O1 training frame format". Apply same changes to references of RTS functions in CL181-183.

Apply a similar change in 179.8.9 except use E1 instead of O1.

In the NOTE text in 176C.3 and 176D.3, change from

"include the inter-sublayer link training (ILT) function with E1 format and the ready-to-send (RTS) function, as specified in Annex 178B"

to

"include the RTS function for PAM4 interfaces specified in 178B.6 and the ILT function for PAM4 interfaces specified in 178B.7 with the E1 training frame format".

Implement with editorial license.

[Editor's note: Affects multiple clauses including 179 through 183]

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

CI 179B SC 179B.3.1 P926 L35 # R2-104

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D (B) (E)

"Usage of the the Single Row Surface" - extra "the"

## SuggestedRemedy

Change to "Usage of the Single Row Surface"

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 177 SC 177.6.2.3 P373 L3 # R2-106

Ran, Adeo Cisco Systems, Inc.

Comment Type T Comment Status D (B) (L)

"The Inner FEC shall support a test mode, where a PRBS31 test pattern is encoded by the Inner FEC (see 176.7.4)"

This subclause describes a test pattern checker function (or mode), but the first sentence describes it as if it were a generator function.

The cross reference 176.7.4 is to "PMA test patterns", not the right reference for this signal.

## SuggestedRemedy

Change the sentence to

"The Inner FEC shall support a test mode, where the received signal corresponds to the PRBS31 encoded by Inner FEC test pattern (see 177.6.1.1)".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

While the proposed change could improve readability, the existing text is correct except for the cross-reference.

Change the cross-reference in the first sentence

from:

"(see 176.7.4)"

to:

" (see 177.6.1.1)"

CI 177 SC 177.11.4.2 P384 L47 # R2-107

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D (B) (L)

Item RFs is missing "Y [ ]" in the "support" column.

## SuggestedRemedy

Add it.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Resolved using the response to comment R2-174.

CI 178 SC 178.9.2.6 P397 L17 # R2-108

Ran, Adeo Cisco Systems, Inc.

Comment Type TR Comment Status D (B) (E)

"measured with the transmitter equalization set to NO EQUALIZATION"

NO EQUALIZATION is an enumerated value for the coefficient request (178B.7.4.6). But in this case it is not a single coefficient - its a preset value, so should be PRESET 1 (no equalization), as in 179.9.4.2.2.

## SuggestedRemedy

Change to

"measured with the transmitter equalization set to PRESET 1 (no equalization)".

Proposed Response Response Status W

PROPOSED ACCEPT.

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

CI **180** SC **180.5.2** P**469** L**8** # **R2-109**

Ran, Adeo

Cisco Systems, Inc.

Comment Type **E** Comment Status **D** editorial-primitive (B) (OI)

"When operating in DATA mode, the PMD transmit function shall convert the n symbol streams requested by the PMD service interface PMD:IS\_UNITDATA\_0.request primitive to PMD:IS\_UNITDATA\_n-1.request primitive into n separate optical signals"

The first "primitive" is grammatically out of place, creating a sentence that is difficult to parse

There are 24 instances of "PMD service interface messages PMD:IS\_UNITDATA" in 802.3-2022, and I found only 2 instances of IS\_UNITDATA with "primitive" - so this change deviates from precedence and shouldn't have been made. There are still instances of "message" in this amendment too.

But if it is made, there is a clean way to do that, based on precedent clauses (e.g. 92.7.2, 138.5.2, 150.5.2, and 167.5.2) and even the phrasing used in 180.3, which use "i" as an index.

There are similar-form sentences in 180.5.3, and in corresponding subclauses in 181, 182, and 183.

## SuggestedRemedy

In 180.5.2, change the quoted sentence to  
"When operating in DATA mode, the PMD transmit function shall convert the n symbol streams requested by the PMD service interface primitives PMD:IS\_UNITDATA\_i.request (i=0 to n-1) into n separate optical signals".

In 180.5.3, change from "for delivery to the PMD service interface using the PMD:IS\_UNITDATA\_0.indication primitive to PMD:IS\_UNITDATA\_n-1.indication primitive" to

"for delivery to the PMD service interface primitives PMD:IS\_UNITDATA\_i.indication (i=0 to n-1)".

Consider changing "primitives" to "messages" to be consistent with precedent clauses and with other places in this amendment.

Make the corresponding changes in 180.5.3, 181.5.2, 181.5.3, 182.5.2, 182.5.3, 183.5.2, and 183.5.3.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the following with editorial license:

P469, L7~9:

When operating in DATA mode, the PMD transmit function shall convert the n symbol streams requested by the PMD service interface primitives PMD:IS\_UNITDATA\_i.request (i=0 to n-1) into n separate optical signals.

P469, L29:

for delivery to the PMD service interface primitives PMD:IS\_UNITDATA\_i.indication (i=0 to n-1)

Also the same changes in CL 181~183.

CI **184** SC **184.5.6** P**603** L**25** # **R2-111**

Ran, Adeo

Cisco Systems, Inc.

Comment Type **E** Comment Status **D** (B) (L)

"BCH FEC codeword" (twice in this subclause) is inconsistent with the rest of the clause, which uses "BCH codeword".

There is no other instance of "BCH FEC".

## SuggestedRemedy

Change "BCH FEC codeword" to "BCH codeword", twice.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft.

Implement the suggested remedy.

CI **185** SC **185.8.1** P**634** L**20** # **R2-112**

Ran, Adeo

Cisco Systems, Inc.

Comment Type **E** Comment Status **D** Test patterns (B) (OC)

For pattern 8 (PRBS31 pattern encoded by 800GBASE-LR1 Inner FEC), the reference to 184.5.3 ("Permutation") is incorrect. The test pattern generator is defined in 184.7.

## SuggestedRemedy

Change the reference to 184.7.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft.

Implement the suggested remedy with editorial license.

# Ξ P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comme

CI 175 SC 175.1.5 P292 L50 # R2-113

WANG, Xuebo

Huawei Technologies Co., Ltd

Comment Type TR Comment Status D (B) (L)

The current version says that "inst" can be PMA or FEC. However, for now, there are no defined FEC sublayers that are directly connected to 1.6TBASE-R PCS. Figure 175-7 on Page 302 has the same issue.

## SuggestedRemedy

Delete "or FEC", or remove the note "inst: PMA or FEC" and change "inst" to "PMA". Make the same change to Figure 175-7.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out that the only sublayer currently allowed below the 1.6T PCS is a PMA, and a small change would be an improvement to the draft.

The option of changing all occurrences of "inst" to "PMA" would be a large and undesirable change to several subclauses within this clause. It is anticipated that future 802.3 amendments may likely add options for an Inner FEC sublayer below the 1.6T PCS as has been added to the 800G PCS in 802.3dj. Using the more generic "inst" for the interface definition below the PCS makes the 1.6T PCS clause more amenable to future amendments.

In Figures 175-2 and 175-7, change the legend at the bottom of the figures from:

"inst: PMA or FEC"

to:

"inst: PMA"

In 175.1.4, change the second sentence,

from:

"The lower interface of the PCS connects to a PMA or Inner FEC through the service interface below the PCS as necessary to support a PMD."

to:

"The lower interface of the PCS connects to a PMA through the service interface below the PCS to support a PMD."

In 175.2.1, change the 2nd paragraph,

from:

"When communicating with the 1.6TMII, the PCS uses an eight octet-wide, synchronous data path, with packet delineation being provided by transmit control signals (TXC<n> = 1) and receive control signals (RXC<n> = 1). When communicating with the PMA or Inner FEC sublayer, the 1.6TBASE-R PCS uses 16 encoded bit streams also known as PCS lanes. Per direction (receive or transmit), the PCS lanes originate from a common clock but may vary in phase and skew dynamically. The PMA and Inner FEC operate independently of packet

boundaries. The PCS provides the functions necessary to map packets between the 1.6TMII format and the service interface below the PCS."

to:

"When communicating with the 1.6TMII, the PCS uses an eight octet-wide, synchronous data path, with packet delineation being provided by transmit control signals (TXC<n> = 1) and receive control signals (RXC<n> = 1). When communicating with the sublayer below the PCS, the 1.6TBASE-R PCS uses 16 encoded bit streams also known as PCS lanes. Per direction (receive or transmit), the PCS lanes originate from a common clock but may vary in phase and skew dynamically. The PCS provides the functions necessary to map packets between the 1.6TMII format and the service interface below the PCS."

CI 183 SC 183.5.7 P570 L33 # R2-115

Issenhuth, Tom

Huawei Technologies Co., Ltd,Issenhuth Consulting, L

Comment Type T Comment Status D TX disable (B) (OI)

183.5.7 is missing a third paragraph that is in 180.5.7, 181.5.7 and 182.5.7.

## SuggestedRemedy

To keep all the IMDD optical clauses aligned, in 183.5.7 add a new third paragraph "If a PMD\_fault is detected, then the PMD may set the Global\_PMD\_transmit\_disable variable to one, turning off the optical transmitter in each lane."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy [with editorial license].

CI 181 SC 181.9.14 P522 L39 # R2-116

Issenhuth, Tom

Huawei Technologies Co., Ltd,Issenhuth Consulting, L

Comment Type T Comment Status D TFT (B) (OI)

The resolution of comment #R1-128 deleted the text ", except that the test fiber is not used". The comment only addressed 180.9.14 and did not request the same change in 181, 182 and 183.

## SuggestedRemedy

In 181.9.14 change "The TECQ of the conformance test signal is measured according to 181.9.7, except that the test fiber is not used." to "The TECQ of the conformance test signal is measured according to 181.9.7."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy with editorial license.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Comment ID

Comment ID 116

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2026-09-02 3:43:33 PM

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

**Cl 182**    **SC 182.9.14**    **P554**    **L7**    # **R2-117**

Issenhuth, Tom    Huawei Technologies Co., Ltd,Issenhuth Consulting, L

**Comment Type**    **T**    **Comment Status**    **D**    **Rx Sensitivity (B) (OI)**

The resolution of comment #R1-128 deleted the text ", except that the test fiber is not used". The comment only addressed 180.9.14 and did not request the same change in 181, 182 and 183.

**SuggestedRemedy**

In 182.9.14 change "The TECQ of the conformance test signal is measured according to 182.9.7, except that the test fiber is not used." to "The TECQ of the conformance test signal is measured according to 182.9.7."

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy [with editorial license].

**Cl 183**    **SC 183.9.14**    **P586**    **L44**    # **R2-118**

Issenhuth, Tom    Huawei Technologies Co., Ltd,Issenhuth Consulting, L

**Comment Type**    **T**    **Comment Status**    **D**    **Rx Sensitivity (B) (OI)**

The resolution of comment #R1-128 deleted the text ", except that the test fiber is not used". The comment only addressed 180.9.14 and did not request the same change in 181, 182 and 183.

**SuggestedRemedy**

In 183.9.14 change "The TECQ of the conformance test signal is measured according to 183.9.7, except that the test fiber is not used." to "The TECQ of the conformance test signal is measured according to 183.9.7."

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy with editorial license.

**Cl 178B**    **SC 178B.11.3**    **P910**    **L12**    # **R2-120**

Ran, Adeel    Cisco Systems, Inc.

**Comment Type**    **E**    **Comment Status**    **D**    **c\_tx\_mode (B) (CA)**

In state TRAINING\_COMPLETE, the assigned value is "NOT\_RTS", but the enumerated values of c\_tx\_mode include "NOT-RTS".

Note that another comment suggests merging NOT-RTS with other values.

**SuggestedRemedy**

If "NOT-RTS" remains a possible value, change the assigned value to NOT-RTS.

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolved using the response to comment R2-132.

**Cl 178B**    **SC 178B.7**    **P879**    **L5**    # **R2-121**

de Koos, Andras    Microchip Technology Inc

**Comment Type**    **ER**    **Comment Status**    **D**    **(B) (CA)**

Typo:

"...all the per-lane ILT functions (see 178B.7.1) "

per-lane ILT functions are defined in 178B.7.2.

**SuggestedRemedy**

Correct the cross-reference

**Proposed Response**    **Response Status**    **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy.

CI 178B SC 178B.5 P878 L23 # R2-122

de Koos, Andras

Microchip Technology Inc

Comment Type E Comment Status D (B) (CA)

In the same way that there is a nice signal diagram between the per-interface ILT and RTS functions (Figure 178B-4), it would be helpful to have a similar diagram showing the signaling between the per-lane ILT functions and the per-interface ILT function. Or add the per-lane ILT to/from per interface ILT signaling to Figure 178B-4 itself. The signaling should not be any more complicated than what already exists between the RTS function and the per-interface ILT function.

#### SuggestedRemedy

Consider adding the signaling between the per-interface ILT function and the per-lane ILT function(s) to Figure 178B-4.

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The diagram is intended only to show the relationship between the ILT function and the RTS function not the details of with either the RTS function or the ILT function. The diagram is sufficient for that purpose in the draft.

Further, the relationship between the ILT per-interface function and the ILT per-lane function is illustrated in Figure 178B-3.

CI 178B SC 178B.8.2.1 P893 L43 # R2-123

de Koos, Andras

Microchip Technology Inc

Comment Type E Comment Status D (B) (CA)

Style question : when there is a NOTE relating to a variable's description, should it not have the same indentation as the variable's description?  
Can find examples of both indented and un-indented NOTES in 802.3-2022, unfortunately (see variables list in Clauses 119 and 82, respectively).

#### SuggestedRemedy

Consider indenting the NOTES to match the indentation of the variables' description.

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The note is formatted according the FrameMaker template and is consistent with all other text notes in this draft.

CI 178B SC 178B.11.2.1 P906 L31 # R2-132

Law, David

Hewlett Packard Enterprise

Comment Type E Comment Status D c\_tx\_mode (B) (CA)

Subclause 178B.11.2.1 defines the transmit not-ready-to-send signal enumeration of the c\_tx\_mode variable as NOT-RTS (NOT dash RTS). Yet, the TRAINING\_COMPLETE state of Figure 178B-15 'RTS without squelch state diagram' assigns c\_tx\_mode to NOT\_RTS (NOT underscore RTS).

#### SuggestedRemedy

Use a consistent spelling of the enumeration. Since we generally use underscores in state diagram names, suggest that:

- [1] The text 'NOT-RTS: transmit the not-ready-to-send signal ...' in subclause 178B.11.2.1 on page 907, line 30 is changed to read 'NOT\_RTS: transmit the not-ready-to-send signal ...'.
- [2] The text 'When c\_tx\_mode = TRAINING, NOT-RTS, RTS, or FILL ...' in subclause 186.2.6 on page 668, line 21 is changed to read 'When c\_tx\_mode = TRAINING, NOT\_RTS, RTS, or FILL ...'.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Implement suggested remedy with editorial license.

CI 178B SC 178B.12 P912 L21 # R2-133

Law, David

Hewlett Packard Enterprise

Comment Type E Comment Status D (B) (CA)

The 'd' in the text '1.1420.8d' in the 'MDIO register/bit number' entry for ic\_sts should be superscripted as it is a footnote.

#### SuggestedRemedy

See comment.

Proposed Response Response Status W

PROPOSED REJECT.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178B SC 178B.12 P912 L32 # R2-134

Law, David

Hewlett Packard Enterprise

Comment Type T Comment Status D MDIO RTS (B) (CA)

Table 178B-4 'Status variables and MDIO mapping for PAM4 interfaces' maps the remote\_rts variable to bit 1.1120.10, the 'Not ready to send' bit in the subclause 45.2.1.161 'BASE-R PAM4 PMD training LP control, lane 0 through lane 7' registers. Subclause 45.2.1.161 says, 'The BASE-R PAM4 PMD training LP control, lane 0 through lane 7 registers reflect the contents of the first 16-bit word of the training frame most recently received for each lane.'

Subclause 178B.8.2.1 'Variables', however, defines the remote\_rts variable as a 'Boolean variable that indicates the value of local\_rts variable in the peer interface. If mr\_training\_enable is true then remote\_rts is set to true when the received training frames on all lanes of the interface have the not ready to send bit (see 178B.7.4.2) set to zero, otherwise it is set to false. If mr\_training\_enable is false then remote\_rts is always true.'. In addition, as noted in subclause 178B.7.1 'Per-interface ILT function', the remote\_rts variable is generated by the per-interface ILT function.

As a result, the remote\_rts variable is an interface variable rather than a lane variable and does not 'reflect the contents of the first 16-bit word of the training frame most recently received' on the respective lane. It therefore seems that the mapping of the remote\_rts variable to bit 1.1120.10 in Table 178B-4 should be removed. The 1.1120.10 'Not ready to send' bit would therefore be derived from the 'Not ready to send' bit in the control field (the first 16-bit word) of the training frame based on the register definition in subclause 45.2.1.161. If there is a desire to reflect the remote\_rts variable in a register, a 'Remote Ready to Send' bit could be added to subclause 45.2.1.169c 'PMA/PMD interface training status (Register 1.1476)'.

#### Suggested Remedy

[1] Remove the mapping of the remote\_rts variable to bit 1.1120.10 in Table 178B-4.

[2] If desired, add a 'Remote Ready to Send' bit to register 1.1476 that is mapped to the remote\_rts variable as follows by changing the bit 1.1476.9 row to read:

Bit(s): 9

Name: Remote Ready to Send

Description: 1 = mr\_training\_enable is true and the not ready to send bit (see 178B.7.4.2) is set to zero for all lanes.

0 = mr\_training\_enable is false or the not ready to send bit is set to one for any lane.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the the change proposed in the suggested remedy is an improvement to the draft.

In Table 178B-4 -- Status variables and MDIO mapping for PAM4 interfaces:

Change the assignment of remote\_rts to MDIO register bit 1.1476.15 and the clause reference to 45.2.1.169c

In 45.2.1.169c:

Change the bit 1.1476.15 row to read:

Bit(s): 15

Name: Remote ready to send

Description:

1 = true

0 = false

Read/Write: "RO"

Implement with editorial license.

[Editor's note: Affects multiple clauses including 178, 45]

CI 178B SC 178B.7 P879 L42 # R2-135

Law, David

Hewlett Packard Enterprise

Comment Type T Comment Status D (B) (CA)

The last paragraph of subclause 178B.7 'ILT function for PAM4 interfaces' says 'Recovery from the ISL\_FAIL state in the training control state diagram (Figure 178B-10b) requires management to assert mr\_restart\_training or reset ...'. Subclause 178B.8.2.1 'Variables', however, defines the 'mr\_restart' variable as a 'Boolean variable used by management to restart the RTS and ILT functions.' which is used by the state diagrams (note mr\_restart\_training vs mr\_restart). Clause 136 uses mr\_restart\_training, as does subclause 45.2.1.95.1, although it appears to reference only mr\_restart\_training in Clause 76.

#### Suggested Remedy

Use only either mr\_restart\_training or mr\_restart.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft.

Change mr\_restart\_training to mr\_restart.

Implement the suggested remedy with editorial license.

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

CI 178B SC 178B.12 P911 L32 # R2-136

Law, David

Hewlett Packard Enterprise

Comment Type T Comment Status D MDIO (B) (CA)

Subclause 45.2.1.161 (register 1.1120) says, 'The BASE-R PAM4 PMD training LP control, lane 0 through lane 7 registers reflect the contents of the first 16-bit word of the training frame most recently received for each lane.'. Table 178B-3 'Control variables and MDIO mapping for PAM4 interfaces', however, maps ic\_req, which is an output of Figure 178B-12 'Coefficient update state diagram', to the Initial condition request bits in register 1.1120 instead.

This doesn't meet the register description of 'reflecting the contents of the first 16-bit word' of the received training frame and would also prevent the use of register 1.1120 to drive the coefficient update state diagram when training is disabled. This is because ic\_sel, not ic\_req, is an input variable to the coefficient update state diagram.

On review of IEEE Std 802.3-2022 subclause 136.8.11.7.1 'Variables', I see that it is ic\_req that is '... derived from the "initial condition request" bits from the control field of the received training frames ...' and there is no ic\_sel variable. It therefore seems that the definition of ic\_req was changed in IEEE P802.3dj, and that ic\_sel was added to replace its function of reflecting the received "initial condition request" bits.

As a result, based on the register description, being able to use the register to drive the coefficient update state diagram when training is disabled, and since it appears that ic\_req was replaced with ic\_sel in the variables and coefficient update state diagram compared to Clause 136, I believe ic\_req should also be replaced with ic\_sel in Table 178B-3 'Control variables and MDIO mapping for PAM4 interfaces'.

## SuggestedRemedy

Change 'ic\_req' to read 'ic\_sel' in the 1.1120.13:11 bits row of Table 178B-3 'Control variables and MDIO mapping for PAM4 interfaces'.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft.

Implement the suggested remedy with editorial license.

CI 172 SC 172.7.4.2 P271 L20 # R2-149

Opsasnick, Eugene

Broadcom Inc.

Comment Type ER Comment Status D (B) (L)

PICS item RF12 was recently changed from !SD:M to O/2. The Support column should also have been updated accordingly. Mandatory items use "Yes or N/A", but Optional items should use "Yes or No"

## SuggestedRemedy

In PICS table in section 172.7.4.2, change Support column of item RF12  
from: "Yes [ ] N/A [ ]"  
to: "Yes [ ] No [ ]"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.

Resolved using the response to comment R2-90.

CI 172 SC 172.7.4.2 P271 L24 # R2-150

Opsasnick, Eugene

Broadcom Inc.

Comment Type ER Comment Status D (B) (L)

PICS item RF13 was recently changed from !SD:M to O/2. The Support column should also have been updated accordingly. Mandatory items use "Yes or N/A", but Optional items should use "Yes or No"

## SuggestedRemedy

In PICS table in section 172.7.4.2, change Support column of item RF13  
from: "Yes [ ] N/A [ ]"  
to: "Yes [ ] No [ ]"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.

Resolved using the response to comment R2-90.

IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

CI 172 SC 172.7.4.2 P271 L27 # R2-151  
Opsasnick, Eugene Broadcom Inc.  
Comment Type ER Comment Status D (B) (L)  
PICS item RF14 is missing an entry in the Support column.  
SuggestedRemedy  
In PICS table in section 172.7.4.2, add the following text in the Support column of item RF14  
"Yes [ ] No [ ]"  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.  
Resolved using the response to comment R2-90.

CI 172 SC 172.7.4.1 P270 L25 # R2-153  
Opsasnick, Eugene Broadcom Inc.  
Comment Type ER Comment Status D (B) (L)  
PICS item TF1 was recently changed from !SE:M to O/1. The Support column should also have been updated accordingly. Conditional Mandatory items use "Yes or N/A", but Optional items should use "Yes or No"  
SuggestedRemedy  
In PICS table in section 172.7.4.1, change Support column of item TF1  
from: "Yes [ ] N/A [ ]"  
to: "Yes [ ] No [ ]"  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.  
Resolved using the response to comment R2-90.

CI 172 SC 172.7.4.1 P270 L29 # R2-154  
Opsasnick, Eugene Broadcom Inc.  
Comment Type ER Comment Status D (B) (L)  
PICS item TF2 was recently changed from SE:M to O/1. The Support column should also have been updated accordingly. Conditional Mandatory items use "Yes or N/A", but Optional items should use "Yes or No"  
SuggestedRemedy  
In PICS table in section 172.7.4.1 change Support column of item TF2  
from: "Yes [ ] N/A [ ]"  
to: "Yes [ ] No [ ]"  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.  
Resolved using the response to comment R2-90.

CI 172 SC 172.7.4.1 P270 L33 # R2-155  
Opsasnick, Eugene Broadcom Inc.  
Comment Type ER Comment Status D (B) (L)  
PICS item TF3 was recently added as an optional item. This item should use "Yes or No" in the Support column, not "Yes or N/A".  
SuggestedRemedy  
In PICS table in section 172.7.4.1 change Support column of item TF3  
from: "Yes [ ] N/A [ ]"  
to: "Yes [ ] No [ ]"  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.  
Resolved using the response to comment R2-90.

**CI 45**    **SC 45.2.1.169c**    **P102**    **L24**    # **R2-159**  
 Slavick, Jeff    Broadcom Inc  
**Comment Type**    **T**    **Comment Status**    **D**    (B) (L)  
 MDIO register 1.1476.8 "isl\_ready" is mapped for both c\_isl\_ready and isl\_ready per Table 178B-4 and Table 178B-6 but the definition in Clause 45 it talks about remote\_rx\_ready but not c\_local\_rx\_ready  
**SuggestedRemedy**  
 Update definition in Table 45-133b for isl\_ready to just be 1 = true and 0 = false  
**Proposed Response**    **Response Status**    **W**  
 PROPOSED ACCEPT.

**CI 178B**    **SC 178B.12**    **P911**    **L40**    # **R2-160**  
 Slavick, Jeff    Broadcom Inc  
**Comment Type**    **T**    **Comment Status**    **D**    MDIO (B) (CA)  
 The following variables have MDIO register bits they can be mapped to but are not in the mapping table:  
 remote\_mc\_mode  
 k  
**SuggestedRemedy**  
 Add the following mappings to Table 178B-3:  
 remote\_mc\_mode | 178B.8.3.1 | 1.1120.9:8 | 45.2.1.161  
  
 Add the following mapping to Table 178B-4:  
 k | 178B.7.5.7 | 1.1420.5:3 | 45.2.1.167  
**Proposed Response**    **Response Status**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.  
 However, proposed changes in the suggested remedy are an improvement to the draft. Implement the suggested remedy with editorial license.

**CI 178B**    **SC 178B.12**    **P911**    **L32**    # **R2-161**  
 Slavick, Jeff    Broadcom Inc  
**Comment Type**    **TR**    **Comment Status**    **D**    MDIO (B) (CA)  
 Per ic\_sel definition this is the variable derived from the incoming training frames, while ic\_req is assigned per the coefficient update state diagram.  
**SuggestedRemedy**  
 Change ic\_req to ic\_sel in Table 178B-3  
**Proposed Response**    **Response Status**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.  
  
 Resolved using the response to comment R2-136

**CI 178B**    **SC 178B.2**    **P874**    **L30**    # **R2-162**  
 Slavick, Jeff    Broadcom Inc  
**Comment Type**    **T**    **Comment Status**    **D**    (B) (CA)  
 We state the RTS function is described in two sub clauses, which is true there are two different RTS functions and later in the overview we talk about PAM4 and coherent, so perhaps it'll be best to denote that 178B.6 is for PAM4 ISLs and 178B.10 is for coherent.  
**SuggestedRemedy**  
 Change "The RTS function is described in 178B.6 and 178B.10."  
 To: "The RTS function is described for PAM4 ISLs in 178B.6 and for coherent ISLs in 178B.10."  
**Proposed Response**    **Response Status**    **W**  
 PROPOSED ACCEPT.

CI 178B SC 178B.8.3.1 P898 L43 # R2-164  
 Slavick, Jeff Broadcom Inc  
 Comment Type TR Comment Status D (B) (CA)  
 The remote\_mc\_mode variable is or is not assigned value, assignment is not optional.  
 SuggestedRemedy  
 Change "may be " to "is"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The assignment of one of the values is mandatory not optional. Appropriate language from the definition of local\_tp\_mode can be used.  
 In the definition of remote\_mc\_mode change:  
 "Enumerated variable that corresponds to the "modulation and precoding status" bits in the status field of received training frames. It may be assigned one of the following values:"  
 To:  
 "Enumerated variable that corresponds to the "modulation and precoding status" bits in the status field of received training frames and is assigned one of the following values:"

CI 178B SC 178B.6 P878 L38 # R2-165  
 Slavick, Jeff Broadcom Inc  
 Comment Type T Comment Status D RTS (B) (CA)  
 This list is dashed which means unordered, but really it's a series of steps, thus should be numbered.  
 SuggestedRemedy  
 Changed the list to be ordered rather than dashed (unordered).  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.  
 Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.  
 This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178B SC 178B.10 P906 L2 # R2-168  
 Slavick, Jeff Broadcom Inc  
 Comment Type T Comment Status D (B) (CA)  
 This list is dashed which means unordered, but really it's a series of steps, thus should be numbered.  
 SuggestedRemedy  
 Changed the list to be ordered rather than dashed (unordered).  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.  
 This change will be passed to the IEEE staff editor for consideration during final editing.

CI 178B SC 178B.11.2 P908 L3 # R2-170  
 Slavick, Jeff Broadcom Inc  
 Comment Type TR Comment Status D (B) (CA)  
 Figure 178B-14 and Figure 178B-15 do not have a PATH\_READY state.  
 SuggestedRemedy  
 In Figure 178B-14 rename the LOCAL\_RTS state to PATH\_READY  
 In Figure 178B-15 rename the BOTH\_DIR\_RTS state to PATH\_READY  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 178B SC 178B.11.3 P909 L0 # R2-171

Slavick, Jeff Broadcom Inc

Comment Type TR Comment Status D State diagrams (B) (CA)

There is no SWITCH\_CLOCK state in Figure 178B-14

**SuggestedRemedy**

Within Figure 178B-14:  
Insert a SWITCH\_CLOCK state with content of C\_USE\_TX\_CLOCK(recovered) and start c\_forward\_clock\_timer. Its entry is from the QUIET state with a criteria of c\_quiet\_timer\_done \* c\_adjacent\_intf\_rx\_ready \* c\_uses\_recovered\_clock. Its exit is to TRAINING with a criteria of c\_forward\_clock\_timer\_done.  
Add to the path from QUIET to TRAINING the criteria of " !c\_uses\_recovered\_clock"  
In the INITIALIZE state add "C\_USE\_TX\_CLOCK(local)"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The comment correctly points out that Figure 178B-14 does not include the SWITCH\_CLOCK and thus the cross-reference in the definition of c\_forward\_clock\_timer should be deleted.

On page 907 line 50, change "RTS state diagram (Figure 178B-14 or Figure 178B-15)" to "RTS without squelch state diagram (Figure 178B-15)"

Implement with editorial license.

CI 176 SC 176.12.3 P353 L41 # R2-172

Nicholl, Gary Cisco Systems, Inc.

Comment Type ER Comment Status D (B) (L)

PICS items \*PMDO and \*PMDE are conditional optional. The support column should be "Yes [ ], No [ ], N/A [ ]"

**SuggestedRemedy**

Change the support column for PICS items \*PMDO and \*PMDE from "Yes [ ], No [ ]" to "Yes [ ], No [ ], N/A [ ]"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error in the PICS items and provides the appropriate remedy.

Implement the suggested remedy with editorial license.

CI 176 SC 176.12.3.1 P354 L9 # R2-173

Nicholl, Gary Cisco Systems, Inc.

Comment Type E Comment Status D (B) (L)

The bottom line of the PICS table in 176.12.3.1 should be thick (same as the top and edge lines of the table). The same issue exists for the PICS table in 176.12.3.2.

**SuggestedRemedy**

Update the format of the PICS tables in 176.12.3.1 and 176.12.3.2 to make the bottom line of the tables the same thickness as the lines at the top and edges of the table.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment does highlight a formatting issue with the PICS tables.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 177 SC 177.11.4.2 P384 L46 # R2-174

Nicholl, Gary Cisco Systems, Inc.

Comment Type ER Comment Status D (B) (L)

The support column for PICS item RF7 is blank. It should be "Yes [ ]".

**SuggestedRemedy**

Add "Yes [ ]" to the support column for PICS item RF7 .

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment identifies an error in the draft that should be corrected.

Implement the suggested remedy.

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

CI 186 SC 186.8.3.2 P696 L38 # R2-175

Nicholl, Gary Cisco Systems, Inc.

Comment Type ER Comment Status D (B) (L)

The entry in the support column for PICS item TF6 is incorrect. This is a conditional mandatory item, so the support column should be "Yes [ ], N/A [ ]" and not "Yes [ ], No [ ]". A similar issue exists with PICS item RF10 in 186.8.3.3.

## SuggestedRemedy

Change the support column for PICS item TF6 in 186.8.3.2 from "Yes [ ], No [ ]" to "Yes [ ], N/A [ ]".

Change the support column for PICS item RF10 in 186.8.3.3 from "Yes [ ], No [ ]" to "Yes [ ], N/A [ ]".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment identifies an error in the draft that should be corrected.

Implement the suggested remedy.

CI 178 SC 178.14.3 P414 L14 # R2-176

Nicholl, Gary Cisco Systems, Inc.

Comment Type ER Comment Status D (B) (E)

PICS items KR1, KR2, KR4, KR8, PHY and \*MD are all conditional optional. The support column should be "Yes [ ], No [ ], N/A [ ]"

## SuggestedRemedy

Change the support column for PICS items KR1, KR2, KR4, KR8, PHY and \*MD in 178.14.3 from "Yes [ ], No [ ]" to "Yes [ ], No [ ], N/A [ ]"

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 186 SC 186.2.6 P668 L17 # R2-177

Huber, Thomas Nokia

Comment Type ER Comment Status D (B) (CA)

The signaling of RTS status is between peer interfaces and is performed by the transmit function. This should be made more clear.

## SuggestedRemedy

Change "The RTS status is signaled via the MNT bits..." to

"In the transmit function, the RTS status is signaled to the peer node via the MNT bits..."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 186 SC 186.2.6 P668 L18 # R2-178

Huber, Thomas Nokia

Comment Type ER Comment Status D (B) (CA)

Setting c\_rts\_status is part of the receive function; this should be more clear.

## SuggestedRemedy

Change "The variable c\_rts\_status is set..." to

"In the receive function, the variable c\_rts\_status is set ..."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 178B SC 178B.12 P912 L18 # R2-183

Osorio, Luz Nokia

Comment Type ER Comment Status D (B) (CA)

Table 178B-4, the variable reference for the management variable "training" is incorrect. It should 178B.8.3.1 (7th row)

## SuggestedRemedy

In table 178B-4, change the variable reference from 178B.8.2.1 to 178B.8.3.1

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy.

# IEEE P802.3dj D3.2 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet 2nd SA recirculation ballot comment

|                                                                                                                                                                                                                                                                                                              |                   |                |      |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------|------|--------------|
| Cl 45                                                                                                                                                                                                                                                                                                        | SC 45.2.1.165     | P99            | L 18 | # R2-184     |
| Osorio, Luz                                                                                                                                                                                                                                                                                                  |                   | Nokia          |      |              |
| Comment Type                                                                                                                                                                                                                                                                                                 | TR                | Comment Status | D    | RTS (B) (CA) |
| local_rts variable it's set to R/W                                                                                                                                                                                                                                                                           |                   |                |      |              |
| SuggestedRemedy                                                                                                                                                                                                                                                                                              |                   |                |      |              |
| Change variable to RO                                                                                                                                                                                                                                                                                        |                   |                |      |              |
| Proposed Response                                                                                                                                                                                                                                                                                            | Response Status W |                |      |              |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                                |                   |                |      |              |
| This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the the change proposed in the suggested remedy is an improvement to the draft. |                   |                |      |              |
| In Table 178B-4 - Status variables and MDIO mapping for PAM4 interfaces:                                                                                                                                                                                                                                     |                   |                |      |              |
| Change the assignment of local_rts to MDIO register bit 1.1476.9 and the clause reference to 45.2.1.169c                                                                                                                                                                                                     |                   |                |      |              |
| In 45.2.1.169c:                                                                                                                                                                                                                                                                                              |                   |                |      |              |
| Change the bit 1.1476.9 row to read:                                                                                                                                                                                                                                                                         |                   |                |      |              |
| Bit(s): 9                                                                                                                                                                                                                                                                                                    |                   |                |      |              |
| Name: Local ready to send                                                                                                                                                                                                                                                                                    |                   |                |      |              |
| Description:                                                                                                                                                                                                                                                                                                 |                   |                |      |              |
| 1 = true                                                                                                                                                                                                                                                                                                     |                   |                |      |              |
| 0 = false                                                                                                                                                                                                                                                                                                    |                   |                |      |              |
| Read/Write: "RO"                                                                                                                                                                                                                                                                                             |                   |                |      |              |
| Implement with editorial license.                                                                                                                                                                                                                                                                            |                   |                |      |              |
| [Editor's note: the resolution affects clauses 45 and 178B]                                                                                                                                                                                                                                                  |                   |                |      |              |

|                                                                                                                                                                                                                                                                    |               |                 |      |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|------|-------------------|
| Cl 45                                                                                                                                                                                                                                                              | SC 45.2.1.161 | P97             | L 16 | # R2-185          |
| Osorio, Luz                                                                                                                                                                                                                                                        |               | Nokia           |      |                   |
| Comment Type                                                                                                                                                                                                                                                       | TR            | Comment Status  | D    | MDIO RTS (B) (CA) |
| remote_rts variable it's set to R/W                                                                                                                                                                                                                                |               |                 |      |                   |
| SuggestedRemedy                                                                                                                                                                                                                                                    |               |                 |      |                   |
| Change variable to RO                                                                                                                                                                                                                                              |               |                 |      |                   |
| Proposed Response                                                                                                                                                                                                                                                  |               | Response Status | W    |                   |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                      |               |                 |      |                   |
| The referenced bit does not represent the management variable remote_rts, rather it reflects the content of the training frame for each lane. Note that comment R2-134 proposes to list remote_rts as a management variable and assign an MDIO bit for remote_rts. |               |                 |      |                   |
| Resolved using the response to comment R2-134.                                                                                                                                                                                                                     |               |                 |      |                   |

|                                                                                                                                                                                                                                                                                                            |            |                   |     |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|-----|----------|
| Cl 178B                                                                                                                                                                                                                                                                                                    | SC 178B.12 | P911              | L41 | # R2-186 |
| Osorio, Luz                                                                                                                                                                                                                                                                                                |            | Nokia             |     |          |
| Comment Type                                                                                                                                                                                                                                                                                               | TR         | Comment Status    | D   | (B) (CA) |
| There is no consistency in the mapping of the following variables between control (R/W) and status (RO). There is benefit in having management access to these variables for debug reasons or specific applications.                                                                                       |            |                   |     |          |
| ic_req (set to R/W)                                                                                                                                                                                                                                                                                        |            |                   |     |          |
| coef_req (set to R/W)                                                                                                                                                                                                                                                                                      |            |                   |     |          |
| coef_sel (set to R/W)                                                                                                                                                                                                                                                                                      |            |                   |     |          |
| local_mc_mode (set to RO)                                                                                                                                                                                                                                                                                  |            |                   |     |          |
| local_tp_mode (set to RO)                                                                                                                                                                                                                                                                                  |            |                   |     |          |
| SuggestedRemedy                                                                                                                                                                                                                                                                                            |            |                   |     |          |
| Set these variables to R/W by pointing to the control register (45.2.1.161)                                                                                                                                                                                                                                |            |                   |     |          |
| local_mc_mode                                                                                                                                                                                                                                                                                              |            |                   |     |          |
| local_tp_mode                                                                                                                                                                                                                                                                                              |            |                   |     |          |
| Proposed Response                                                                                                                                                                                                                                                                                          |            | Response Status W |     |          |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                                                                                                                                              |            |                   |     |          |
| This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the changes proposed in the suggested remedy are an improvement to the draft. |            |                   |     |          |
| Move local_mc_mode and local_tp_mode with their variable and MDIO references to Table 178B-4—Status variables and MDIO mapping for PAM4 interfaces.                                                                                                                                                        |            |                   |     |          |

|                                                                                                                                                                               |            |                                                   |    |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------------------------|----|----------|
| Cl 177                                                                                                                                                                        | SC 177.4.5 | P365                                              | L1 | # R2-187 |
| Swenson, Norman                                                                                                                                                               |            | Nokia Corporation,Norman Swenson Consulting,Point |    |          |
| Comment Type                                                                                                                                                                  | ER         | Comment Status                                    | D  | (B) (L)  |
| In equations 177-4, 177-5, and 177-6, the g in g(0), g(1), ..., should be boldface to be consistent with the notation in equation 177-2; in each case g() is a column vector. |            |                                                   |    |          |
| SuggestedRemedy                                                                                                                                                               |            |                                                   |    |          |
| Make g boldface in the indicated equations wherever g(0), g(1), ..., appears.                                                                                                 |            |                                                   |    |          |
| Proposed Response                                                                                                                                                             |            | Response Status W                                 |    |          |
| PROPOSED ACCEPT IN PRINCIPLE.                                                                                                                                                 |            |                                                   |    |          |
| Use bold font for letter "g" in Equation 177-4, 177-5 and 177-6 to match Equation 177-2.                                                                                      |            |                                                   |    |          |
| [Editor's note: changed page number for 364 to 365]                                                                                                                           |            |                                                   |    |          |

CI 179 SC 179.9.5.2 P440 L33 # R2-207

Djahanshahi, Hormoz

Microchip Technology Inc.

Comment Type E Comment Status D (B) (E)

In Table 179-13, the last entry is "BER", but in all other clauses and annexes this is "BERmax"

**Suggested Remedy**

Change BER to BERmax in Table 179-13

Proposed Response Response Status W

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Although the suggested remedy is an improvement to the draft it is an editorial issue that may be addressed by referral to the IEEE SA Editorial staff.

This change will be passed to the IEEE staff editor for consideration during final editing.

CI 176C SC 176C.6.4.4 P808 L16 # R2-208

Djahanshahi, Hormoz

Microchip Technology Inc.

Comment Type E Comment Status D (B) (E)

In Table 176C-5, there is a typo in the BERadded value, i.e., "2.841x10<sup>-5</sup>" should have been "2.841x10<sup>-4</sup>", as per original submitted proposal in [https://www.ieee802.org/3/dj/public/24\\_09/brown\\_3dj\\_04\\_2409.pdf](https://www.ieee802.org/3/dj/public/24_09/brown_3dj_04_2409.pdf), slide #7. Alternatively, we can recalculate from BERadded=BERtotal-BERmax= 2.921x10<sup>-4</sup> - 8x10<sup>-6</sup> = 2.841x10<sup>-4</sup>. Also, we can see in subclause 176C.2, the correct BERadded is provided as "2.841x10<sup>-4</sup>".

**Suggested Remedy**

Change text to "BERadded=2.841x10<sup>-4</sup>" in Table 176C-5

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

However, the change proposed in the suggested remedy is an improvement to the draft. Implement the suggested remedy.