Cl **172** *SC* **172.3.2** *P* **226** *L* **13** # R2-1

Rannow, R K — IEEE member / Self Employed

Comment Type **T** *Comment Status* **D** *wording*

Inconsistent use of the term "both". Used as an adverb and predeterminer, and this may create ambiguity.

172.3.2 FEC_corrected_cw_counter FEC_corrected_cw_counter is identical to 119.3.2 with the clarification that the count includes both flows.
172.3.3 FEC_uncorrected_cw_counter FEC_uncorrected_cw_counter is identical to 119.3.3 with the clarification that the count includes both flows.

SuggestedRemedy

Recommend consistency throughout to document as an adverb.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 use of the word "both" is correct in the referenced sentences.
[Editor's note: The page was changed from 230 to 226.]

Cl **124** *SC* **124.7.1** *P* **112** *L* **40** # R2-2

Dudek, Michael — Marvell

Comment Type **E** *Comment Status* **D** *editorial*

In the .pdf version of the draft and also the .pdf version of the compare draft the axis labelling of Figure 124-2a is unreadable. It was correct in draft 3.1.

SuggestedRemedy

Replace this figure with the one from draft 3.1

Proposed Response *Response Status* **W**

PROPOSED REJECT.
No changes were made to the graphs in the referenced figures, however, it appears that FrameMaker incorrectly rendered the graphics file in D3.2.
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.

Cl **124** *SC* **124.7.2** *P* **114** *L* **46** # R2-3

Dawe, Piers J G — NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

For 400GBASE-DR

SuggestedRemedy

For 400GBASE-DR4

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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.

Cl **124** *SC* **124.7.2** *P* **114** *L* **46** # R2-4

Dawe, Piers J G — NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

"For 400GBASE-DR receiver sensitivity (OMAouter), each lane (max) is optional" but the lanes are not optional.

SuggestedRemedy

Insert a comma after DR. For consistency, insert a comma in Table 124-6 footnote c.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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.

Cl **124** *SC* **124.7** *P* **110** *L* **22** # R2-5

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

Table title is strangely offset to the right. This might be related to the formatting in the base document for multiple tables in Clause 124.

SuggestedRemedy

The text box for the figure titles should be full width. Same issue on next page.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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.

Cl **171** *SC* **171.6.1** *P* **200** *L* **35** # R2-6

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

"where ... are defined in 172.2.6.2.2 and + ..." could be improved. If this were a formal equation, each "where" item would go on a separate line.

SuggestedRemedy

Insert a comma after 172.2.6.2.2. Also in 172.2.4.6.

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.

Cl **124** *SC* **124.7.1** *P* **111** *L* **49** # R2-7

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

Bottom border of a table to be continued

SuggestedRemedy

should be thin.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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.

Cl **172A** *SC* **172A** *P* **288** *L* **19** # R2-8

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

tx_scrambled

SuggestedRemedy

Should be tx_scrambled_am as in the column header. Fig 119-11 shows that these are different things. Also for Table 172A-2.
Annex 119A is the same, by the way, and should be fixed sometime.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 is requesting that in the title of Figure 172A-1 and Figure 172A-2 to change tx_scrambled to tx_scrambled_am.
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.

Cl **172A** *SC* **172A** *P* **287** *L* **22** # R2-9

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *bit ordering*

Another reference would make this easier to use, so the reader can find what "am_mapped" and "tx_scrambled_am" at lines 29, 30 are (am_mapped does not appear in this amendment anywhere else, and while values for tx_scrambled_am are given in the tables, there is no indication of what it is).

SuggestedRemedy

Please insert (see 172.2.4.6) after alignment marker.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 suggested change is redundant since the opening paragraph points to the subclause that defines the entire transmit function (172.2.4).
There is no consensus to make the proposed change.

Cl **124** *SC* **124.7.2** *P* **115** *L* **9** # R2-10

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

Font or character problem, axes values and labels

SuggestedRemedy

Fix. Also Figure 124-2c and 2d.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
No changes were made to the graphs in the referenced figures, however, it appears that FrameMaker incorrectly rendered the graphics file in D3.2.
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.

Cl **172A** *SC* **172A** *P* **292** *L* **28** # R2-11

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *bit ordering*

Unsatisfied D3.1 comment 39: need examples to show some of the output from the PCS, particularly as the numbering/ordering in the PCS generally and in the FEC (which is different) is confusing, as was recognised in 3bs.

SuggestedRemedy

Add a table here for the start of Flow 0 tx_out (16 lanes x 80 hex characters would be more than enough). Upload a plain text file to go with the others, and reference it with a NOTE here.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment is a restatement of comment R1-39. The resolution to comment R1-39 is recorded in the following file:
https://www.ieee802.org/3/df/comments/D3p1/8023df_D3p1_comments_final_id.pdf
The response to R1-39 is:

"REJECT.
The example patterns are provided to help the implementer confirm correct interpretation of the encoding funcitonality which is complex.
Figure 119-11 provides sufficient guidance to correctly implement "Mux and 10-bit symbol distribution". Therefore adding the suggested additional patterns is not necessary.
There is no consensus to make the proposed changes."

No new evidence has been provided to support the proposed changes.There is no consensus to make the proposed changes.

Cl **172A** *SC* **172A** *P* **287** *L* **52** # R2-12

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *bit ordering*

Unsatisfied D3.1 comment 39: need examples to show some of the output from the PCS. This says that 10 bits of cx_A (in reverse order) is one symbol of c_A. It is not clear whether the reverse order is telling the reader to reverse the order, or it is just weird notation. Also the order of the bits in a symbol of C_A is not given.

SuggestedRemedy

Explain the bit and symbol ordering using words.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 mapping is defined by the algorithm on page 287 lines 49 to 54. If this algorithm is misinterpreted by the implementer, the error would be evident by comparing the outcome to the examples provided in Annex 172A.

Cl **172** *SC* **172.2.4.8** *P* **218** *L* **50** # R2-13

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *bit ordering*

Unsatisfied D3.1 comment 39: need examples to show some of the output from the PCS. It turns out that the order of the bits in each 10-bit FEC symbol going into the FEC and coming out of it is not specified in 119. The examples in 172A show what is given to the FEC and what two FEC-coded codeword within the FEC are, but not what is just after the FEC - and it's only informative.
For example, here is what Clause 91 says:
The message symbols are composed of the bits of the transcoded blocks tx_scrambled (including a mapped group of alignment markers when appropriate) such that bit 0 of the first transcoded block in the message (or am_txmapped<0>) is bit 0 of m_k–1 and bit 256 of the last transcoded block in the message is bit 9 of m_0.

SuggestedRemedy

Define the order the bits in each 10-bit FEC symbol going into the FEC and coming out of it.
Provide an example of the output of the FEC after 10-bit interleaving "tx_out", which is after translation from the ordering/numbering that the FEC uses to what most of the PCS uses.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
Note that comment R2-24 relates to a similar concern.
The distribution and mapping of bits from tx_scrambled_am to the codeword message symbols is defined explicitly in 119.2.4.5.
If this algorithm is misinterpreted the error would be evident by comparing the outcome to the examples provided in Annex 172A.

Cl **172** *SC* **172.2.4.1** *P* **219** *L* **35** # R2-14

Dawe, Piers J G NVIDIA

Comment Type **T** *Comment Status* **D** *bit ordering*

Unlike Figure 119-10, there is nothing about bit ordering in Figure 172-4. It's all by reference to Figure 119-10.

SuggestedRemedy

Move the arrow beside "66-bit blocks" to show which end of a 66-bit block goes first, or change the figure title from "800GBASE-R PCS transmit bit ordering and distribution" to "800GBASE-R PCS transmit distribution"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
Figure 172-4 represents the top half of Figure 119-11, with the lower half of Figure 119-11 included in the boxes called “Flow 0 transmit function” and “Flow 1 transmit function”, as described in the associated text. In this respect Figure 172-4 is identical to the equivalent part of Figure 119-11 , with the exception of the additional “block distribution” function that distributes 66-bit blocks between the “Flow 0 transmit function” and “Flow 1 transmit function” as described in 172.2.4.3.”
Subclause 119.2.4.2 defines explicitly how the bits in tx_coded are processed to form a 256B/257B block.
Further details in the figure are not necessary.

Cl **45** *SC* **45.2.5.15** *P* **79** *L* **4** # R2-15

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *editorial*

Putting "bit" on a new line looks odd

SuggestedRemedy

The text box for the figure title should be full width. Same issue on next page.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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.

Cl **173** *SC* **173.5.2.1** *P* **241** *L* **28** # R2-16

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *bit ordering*

Unsatisfied D3.1 comment 39: show some of the 8-lane output of an 32:8 bit mux.

SuggestedRemedy

In a NOTE, show some of the 8-lane output of a 32:8 bit mux for the beginning of the example in Annex 172A. 8 lanes x 80 hex characters should be more than enough. Cross-reference to 172A. In 172A, cross-reference to here.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
Subclause 173.5.2.1 provides sufficient guidance to correctly implement the intended functionality.
There is no consensus to make the proposed changes.

Cl **169** *SC* **169.1.2** *P* **176** *L* **36** # R2-17

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *figure*

We show the sublayer stack in the first figure of each "Introduction to <MAC rate>" clause and the first figure of each sublayer clause in its overview. Usually we include all relevant sublayers, which this gives the reader a familiar map to give the clause context. See figures 69-1, 80-1, 81-1, 82-1, 83-1, 91-1, for example. Also 105 106 107 108 109 for 25G, 131 132 133 134 135 for 50G.
This consistency should be maintained unless changed through the maintenance process. There are few exceptions: when 116, 117, 118, 119 and 120 for 200 Gb/s and 400 Gb/s were written, the first wave of PHYs had no AN, and 3ck did not add them to these diagrams, although AN is included in Figure 161-1 (RS-FEC-Int).

SuggestedRemedy

Add the missing AN sublayer to Figure 169-1 (introduction to 800 Gb/s), like 80, 105, 131. It may be advisable to revert "800GBASE" to "800GBASE-R" for consistency; any future project with a non-BASE-R 800G PHY may choose its own layer stack.
Add the missing AN sublayer to Figure 170-1 (RS and 800GMII), like 81, 106, 132.
Add the missing AN sublayer to figures 171-1 and 3 (800GMII Extender and 800GXS) for consistency.
Add the missing AN sublayer to Figure 172-1 (PCS), like 82, 107, 133.
Add the missing AN sublayer to Figure 173-1 (PMA), like 83, 109, 134.
Either now or via maintenance, (maybe to be implemented in 3dj), insert the missing AN in figures 1 of 116, 117, 118, 119 and 120.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3df 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 this Figure was modified in Draft 3.2, the only modication was changing the label "800GBASE-R" to "800BASE" per comment R1-1 in the following:
https://www.ieee802.org/3/df/comments/D3p1/8023df_D3p1_comments_final_id.pdf
The concerns expressed in this comment (R2-17) are not related to this change in label.

The reference to the figure states "relationships among 800 Gigabit Ethernet, the IEEE 802.3 MAC, and the ISO Open System Interconnection (OSI) reference model are shown in Figure 169–1." The figure is not intended to provide all of the details within all 800 Gb/s PHYs that might be defined.

There are many sublayers and structures that are not included in addition to the AN including the 800GMII Extender, 800GXS, 800GAUI-n, and additional sublayers might be added in the future. Its not practical or necessary to include all of these additional sublayers.

There is no consensus to make the proposed changes.

Cl **172** *SC* **172.2.4.1** *P* **219** *L* **10** # R2-18

Dawe, Piers J G NVIDIA

Comment Type **T** *Comment Status* **D** *bit ordering*

In Figure 119-11 400GBASE-R Transmit bit ordering and distribution, c_A29 = m_A0

SuggestedRemedy

This should say c_A30 = m_A0, as in Figure 119-10 200GBASE-R Transmit bit ordering and distribution.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 correctly points out an error in Figure 119-11 that may be addressed though the maintenance process.
There is no consensus to make the proposed changes.

Cl **172** *SC* **172.2.4.1** *P* **219** *L* **10** # R2-19

Dawe, Piers J G NVIDIA

Comment Type **T** *Comment Status* **D** *bit ordering*

Figure 119-11, 400GBASE-R Transmit bit ordering and distribution

SuggestedRemedy

should show am_mapped as another box under tx_scrambled, with an arrow indicating input to "AM Insertion" (indicating the order).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
Figure 119-11 is accurate as currently written.
There is no consensus to make the proposed change.

Cl **172** *SC* **172.2.4.6** *P* **215** *L* **28** # R2-20

Dawe, Piers J G NVIDIA

Comment Type **E** *Comment Status* **D** *wording*

Figure 119-7, 400GBASE-R alignment marker mapping to PCS lanes, shows "A = from FEC codeword A B = from FEC codeword B". But this is AM creation, part of the Transmit function. AMs are not from the FEC codewords here, they go into them.

SuggestedRemedy

"from" should be "to", twice.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 use of the word "from" is correct as the figure is showing how data from the codewords are mapped to each PCS lane.

Cl **172** *SC* **172.2.4.9** *P* **219** *L* **3** # R2-21

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *bit ordering*

Unsatisfied D3.1 comment 39: need examples to show some of the output from the PCS. Confusion between tx_out the 1088 x 10 array in 119.2.4.7 and tx_out<0:16> the contents of the 16 PCS lanes in Figure 119-11.

SuggestedRemedy

As these seem to be different things, they should have different names.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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 tx_out defined in 119.2.4.7 is the same as tx_out portrayed in Figure 119-11 so it is not necessary to use a different name as proposed.

Cl **172** *SC* **172.2.4.1** *P* **219** *L* **10** # R2-22

Dawe, Piers J G NVIDIA

Comment Type **T** *Comment Status* **D** *bit ordering*

Figure 119-11, 400GBASE-R Transmit bit ordering and distribution, is not consistent.

SuggestedRemedy

There should be a box with tx_scrambled_am in it as there is for tx_xcoded and tx_scrambled, with the two ends numbered and an arrow coming out of one end to "10-bit round robin distribution" so that the order is clear.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
In regard to this comment, Figure 119-11 is accurate as currently written.
There is no consensus to make the proposed change.

Cl **172** *SC* **172.2.4.1** *P* **219** *L* **10** # R2-23

Dawe, Piers J G NVIDIA

Comment Type **T** *Comment Status* **D** *bit ordering*

As this Figure 119-11 is called "Transmit bit ordering..."

SuggestedRemedy

The arrows from "10-bit round robin distribution" should not go to the middles of the FEC messages but to the appropriate end to show which way the FEC messages are filled.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
In regard to this comment, Figure 119-11 is accurate as currently written.
There is no consensus to make the proposed change.

Cl **172** *SC* **172.2.4.1** *P* **219** *L* **10** # R2-24

Dawe, Piers J G NVIDIA

Comment Type **TR** *Comment Status* **D** *bit ordering*

Unsatisfied D3.1 comment 39: need examples to show some of the output from the PCS. Figure 119-11 implies that bit 0 (rather than 9) of a 10-bit symbol in a FEC codeword goes to the PMA first but there is no indication of what that means, and whether it corresponds to a bit 0 or a bit 9 of tx_scrambled_am.

SuggestedRemedy

Define the bit ordering.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
Note that comment R2-13 relates to a similar concern.
The distribution and mapping of bits from tx_scrambled_am to the codeword message symbols is defined explicitly in 119.2.4.5.
If this algorithm is misinterpreted the error would be evident by comparing the outcome to the examples provided in Annex 172A.

Cl **172** *SC* **172.2.4.10** *P* **219** *L* **22** # R2-25

Ran, Adee Cisco Systems, Inc.

Comment Type **E** *Comment Status* **D** *editorial*

The label "tx_coded<0>" on the left overlaps the block.

SuggestedRemedy

Move the label leftward so that it does not overlap.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comment does not apply to the substantive changes between IEEE P802.3df 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.