IEEE P802.3df D1.0 1st Task Force review comments

Comment ID 5  Page 1 of 45

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COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  Z/withdrawn
SORT ORDER: Comment ID

Comment ID 5
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The restriction for the 32:8 multiplexing is intended to improve the FEC performance with correlated errors. The analysis was done with an AB/CD muxing scheme where one UI has bits from codewords A and B (flow 0) and the following UI has bits from C and D (flow 1). This way, combined with the checkerboard scheme, spreads the errors in a burst across the four codewords with equal probabilities.

The restriction as written does not preclude a different muxing, AC/BD, where one UI has bits from A and C and the following UI has bits from B and D. For example, muxing bits from lanes 0 and 16 as MSB+LSB in one UI and bits from lanes 1 and 17 as MSB+LSB in the next UI.

Since the checkerboard pattern swaps codewords A/B on each pair of lanes in flow 0, and swaps codewords C/D on each pair of lanes in flow 1, this would result in always taking the MSB from either codeword A or B, and the LSB from either codeword C or D. Since the BER for the LSB is twice that of the MSB, this would make flow 1 have an increased BER: it would get 2/3 of the errors (33% higher BER than with the AB/CD muxing).

If this muxing is performed, the result would be an increased FLR (by 1-2 orders of magnitude) compared to 400GBASE-R, just due to sub-optimal muxing - regardless of whether errors are correlated or not!

This degradation can be prevented by adding a restriction that two bits from each flow create one PAM4 symbol.

SuggestedRemedy
Change the second item of the first list in 173.4.2.1 from
"The multiplexing function has an additional constraint that each of the 8 output lanes contain two unique PCSLs from PMA client lanes i = 0 to 15 and two unique PCSLs from PMA client lanes i = 16 to 31" to
"The multiplexing function has an additional constraint that each of the 8 output lanes contain two unique PCSLs from PMA client lanes i = 0 to 15 encoded as one PAM4 symbol, and two unique PCSLs from PMA client lanes i = 16 to 31 encoded as the subsequent PAM4 symbol (see 173.4.7)."

Make a similar change in the second item of the second list in 173.4.2.2 (which has "service interface lanes" instead of "PMA client lanes").

Also, change the second item of the list in 173.4.2.3 from
"The 4 PCSLs received on any input lane shall be mapped together to an output lane. The order of PCSLs from an input lane does not have to be maintained on the output lane." to
"The 4 PCSLs received on any input lane shall be mapped together to an output lane, maintaining the bit pairs encoded on each PAM4 symbol. Other than that, the order of PCSLs from an input lane does not have to be maintained on the output lane."
Comment 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  Z/withdrawn
SORT ORDER: Comment ID

IEEE P802.3df D1.0  1st Task Force review comments

CL 172  SC 172.2.4.4  P 164  L 45  #  8
Ran, Adee  Cisco

Comment Type  TR  Comment Status  D  
"Alignment marker encoding values for flow 1 are specified in Table 172–2 and the variable x in 119.2.4.4.2 takes the values of PCS lane number minus 16" 

In 119.2.4.4.2, x is used as part of the variable am_x. We have 32 distinct alignment markers, for lanes 0 through 31, so assigning x to "lane number minus 16" would result in am_0 through am_15 assigned twice, and am_16 through am_31 not assigned at all.

Instead, we should specify that for flow 1, AM are constructed per 119.2.4.4.2 but with x taking values from 16 to 31, and the variable j used in the mapping procedure takes values from 8 to 16 (instead of 0 to 7).

This difference may be listed as another exception, but it seems that it makes it worthwhile to have a new subclause for creating the 32 AMs.

SuggestedRemedy
Replace the reference to 119.2.4.4.2 with a full specification of AM creation and insertion, based on the content (text and equations) of 119.2.4.4.2, but with AMs for lanes 16 to 31 constructed as in the comment.

Proposed Response  Response Status  W  
PROPOSED REJECT. 
Each Flow is a unique "instance" of the 119.4.4.2 so the fact that there are 2 copies of variable "am_#", one in Flow0 and another in Flow1 that have different values is how it's intended to be specified.

CL 172  SC 172.2.4.4  P 164  L 51  #  9
Ran, Adee  Cisco

Comment Type  TR  Comment Status  D  
"The functions above the "64B/66B to 256B/257B transcoder" are excluded'

This is confusing - looks as if these functions are not required, but of course they are.
I had to read it several times to understand that they are excluded from the "transmit function" blocks because they are present above them.

SuggestedRemedy
Change from
The functions above the "64B/66B to 256B/257B transcoder" are excluded
to
The functions above the "64B/66B to 256B/257B transcoder" in Figure 119—11 are not included in the transmit function blocks, and instead are located outside of these blocks, as shown in Figure 172—3.

Proposed Response  Response Status  W  
PROPOSED ACCEPT IN PRINCIPLE.
Resolve using response to comment #185.

CL 172  SC 172.2.5.3  P 167  L 52  #  10
Ran, Adee  Cisco

Comment Type  TR  Comment Status  D  
The FEC degrade variables in clause 172 should be stated as optional, as in their original definition in clause 119.

SuggestedRemedy
Insert "If the optional PCS FEC degraded SER ability is implemented, " at the beginning of the first list item.

Proposed Response  Response Status  W  
PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #90.
IEEE P802.3df D1.0 1st Task Force review comments

Cl 172 SC 172.2.5.4 P 168 L 5 # 12
Ran, Adee Cisco
Comment Type TR Comment Status D (bucket1)
"The post-FEC interleave is identical to that specified in 119.2.5.4."
But 119.2.5.4 talks specifically about two FEC codewords, and we have four.
In similar subclauses for the transmit functions, the text includes "for each flow".
Also applies to 172.2.5.6 and 172.2.5.7.

SuggestedRemedy
Insert "for each flow" after "interleave".

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl 124 SC 124.11.3.1 P 80 L 34 # 14
Dudek, Mike Marvell
Comment Type T Comment Status D (bucket1)
The optical lane assignments are wrong in figure 124-6.

SuggestedRemedy
Change them to match Figure 124-6 in the base document.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Figure was intended to be the same as in in-force figure. Probably formatting problem.
Check and update figure with editorial license.
Dudek, Mike
Marvell

**Comment Type**: T  
**Comment Status**: D

**Proposed Response**: 
PROPOSED ACCEPT IN PRINCIPLE.

change 400GBASE-DR4 description to:
"400GBASE-R PCS/PMA over 4-lane single-mode fiber PMD with reach up to at least 500 m as specified in Clause 124"

change 800GBASE-DR4 description to:
"800GBASE-R PCS/PMA over 8-lane single-mode fiber PMD with reach up to at least 500 m as specified in Clause 124"

change 800GBASE-DR4-2 description to:
"800GBASE-R PCS/PMA over 8-lane single-mode fiber PMD with reach up to at least 2 km as specified in Clause 124"

change 800GBASE-SR8 description to:
"800GBASE-R PCS/PMA over 8-lane multimode fiber PMD with reach up to at least 100 m as specified in Clause 167"

change 800GBASE-VR8 description to:
"800GBASE-R PCS/PMA over 8-lane multimode fiber PMD with reach up to at least 50 m as specified in Clause 167"

Implement with editorial license.

---

Dudek, Mike
Marvell

**Comment Type**: E  
**Comment Status**: D

**Proposed Response**: 
Add the "and" before 800.

**Proposed Response**: 
PROPOSED ACCEPT.

**Comment Type**: T

This is listing register 1.72 but 45.2.1.60b is listing the abilities in Register 1.73

**SuggestedRemedy**: 
Change to register 1.72. Also on line 39

**Proposed Response**: 
PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #44

---

Dudek, Mike
Marvell

**Comment Type**: T  
**Comment Status**: D

**Proposed Response**: 
PROPOSED ACCEPT IN PRINCIPLE.

The mapping of lanes 4-7 is not provided.

**SuggestedRemedy**: 
Add the mapping for those lanes. Also in 45.2.1.163 on line 50, 45.2.1.165 and 45.2.1.167

**Proposed Response**: 
PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #45
IEEE P802.3df D1.0 1st Task Force review comments

Comment: #20

**Cl 162 SC 162.11 P 94 L 51 # 20**

Dudek, Mike
Marvell

**Comment Type E Comment Status D**

There are 4 cable assembly types

**SuggestedRemedy**

Change "three" to "four"

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT.

**Comment: #21**

**Cl 163 SC 163.3 P 100 L 28 # 21**

Dudek, Mike
Marvell

**Comment Type T Comment Status D**

Should be 800GASE-KR8 not KR4

**SuggestedRemedy**

fix it.

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT.

**Comment: #22**

**Cl 163 SC 163.3 P 100 L 29 # 22**

Dudek, Mike
Marvell

**Comment Type T Comment Status D**

should be 800GBASE-CR8 not KR8

**SuggestedRemedy**

Change it.

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT.

**Comment: #23**

**Cl 167 SC 167.2 P 110 L 23 # 23**

Dudek, Mike
Marvell

**Comment Type E Comment Status D**

"have" should be "has" ("or" makes it singular)

**SuggestedRemedy**

change it.

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "PMD have eight" with "PMD has eight".

**Comment: #24**

**Cl 173 SC 173.1.4 P 177 L 28 # 24**

Dudek, Mike
Marvell

**Comment Type E Comment Status D**

(bucket1)

Should be "a physical instantiation"

**SuggestedRemedy**

Change "an" to "a"

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT.

**Comment: #25**

**Cl 173 SC 173.1.4 P 178 L 33 # 25**

Dudek, Mike
Marvell

**Comment Type T Comment Status D**

(bucket1)

There are more than just two addresses (1 and 8) available for the MMD. (more are shown in figure 173-2)

**SuggestedRemedy**

Change "1 and 8" to "1,8,9 and 10".

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Change from:

"Manageable Device (MMD) addresses 1 and 8"

to

"Manageable Device (MMD) addresses 1,8,9,10 and 11"

**Comment: #26**

**Cl 124 SC 124.11.3.1.1 P 80 L 32 # 26**

Bruckman, Leon
Huawei

**Comment Type E Comment Status D**

(bucket1)

In figure 124-6 the labels are all squeezed together

**SuggestedRemedy**

Spread the TX/RX labels to the right position

**Proposed Response**

**Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #14

**Comment ID 26**

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2022-11-29 3:47:24 PM

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 Z/withdrawn
SORT ORDER: Comment ID
Cl 172 SC 172.2.4.9 P 167 L 25 # 27
Bruckman, Leon Huawei

Comment Type T Comment Status D
I assume test pattern shall be applied to both flows together

Suggested Remedy
It may be beneficial to note that the test function when activated affects both flows

Proposed Response Response Status W
PROPOSED REJECT.
The PCS has a single scrambled idle test pattern generator, same as 119.2.4.9. The scrambled idle test pattern is generated by the Encoder prior to 66-bit block distribution.

Cl 172 SC 172.2.6.2.4 P 170 L 15 # 28
Bruckman, Leon Huawei

Comment Type T Comment Status D
From this clause it may be implied that counters are not aggregated, but in the MDIO Table 172-4 shows (and text indicates that) they are aggregated

Suggested Remedy
Add exception indicating that counters are the aggregate of both flows

Proposed Response Response Status W
PROPOSED REJECT. 172.2.6.2.4 is defining the counters used in the state diagrams. The definition of these counters is identical to that in 119.2.6.2.4. Therefore, these counters are not aggregated and are not the same as those defined in Table 172-4.

Cl 173 SC 173.2 P 179 L 10 # 29
Bruckman, Leon Huawei

Comment Type T Comment Status D
"In the case where the sublayer below the PMA is a PHY 800GXS the PMA does not receive a PHY_XS:IS_SIGNAL.indication as an input to the SIL". Figure 173-4 that describes this interface does include the PHY_XS:IS_SIGNAL.indication

Suggested Remedy
Update Figure 173-4 according to text

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. Resolve using the response to comment #196.

Cl 45 SC 45.2.1.165 P 42 L 8 # 30
Huber, Tom Nokia

Comment Type T Comment Status D (bucket1)
While the mapping of bits to registers is obvious, it seems incomplete to explicitly describe the mapping for bits 0-3 and say nothing at all about bits 4-7. A simpler statement of how the mapping works for all bits would be better and easier to maintain.

Suggested Remedy
Change "Lane 0 maps to register 1.1320, lane 1 maps to register 1.1321, lane 2 maps to register 1.1322, and lane 3 maps to register 1.1323." to "Lanes 0-7 map to registers 1.1320 to 1.1327, respectively."

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 45 SC 45.2.1.167 P 42 L 23 # 31
Huber, Tom Nokia

Comment Type T Comment Status D (bucket1)
While the mapping of bits to registers is obvious, it seems incomplete to explicitly describe the mapping for bits 0-3 and say nothing at all about bits 4-7. A simpler statement of how the mapping works for all bits would be better and easier to maintain.

Suggested Remedy
Change "Lane 0 maps to register 1.1420, lane 1 maps to register 1.1421, lane 2 maps to register 1.1422, and lane 3 maps to register 1.1423." to "Lanes 0-7 map to registers 1.1420 to 1.1427, respectively."

Proposed Response Response Status W
PROPOSED ACCEPT.
While the mapping of registers to what they control is obvious, it would be better to spell it out a bit more completely to maintain similar structure to the other clauses that are specifying registers per-lane.

**Suggested Remedy**

Change "Register 1.1450 controls the PMD training pattern for PMD lane 0; register 1.1451 controls the PMD training pattern for PMD lane 1; etc." to

"Registers 1.1450 to 1.1457 control the PMD training pattern for PMD lanes 0-7, respectively."

**Proposed Response**

Proposed Accept.

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The text "and 136.8.11.1.3" is in 802.3-2022, so it should not be identified as a change.

**Suggested Remedy**

Remove the underlining from this text.

**Proposed Response**

Proposed Reject.

The reference to 136.8.11.1.3 is not in the base standard so the underlining should remain.

---

The last 3 sentences would be clearer if the order of the last two sentences is swapped, and the (current) last sentence is written more generically to apply to any situation where a polynomial identifier is being reused.

**Suggested Remedy**

Replace "The polynomial identifier for each lane should be unique; two physically adjacent lanes having the same identifier could impair operation of the PMD control function. The default identifiers are (binary): for lane 0, 00; for lane 1, 01; for lane 2, 10; for lane 3, 11; for lane 4, 00; for lane 5, 01; for lane 6, 10; for lane 7, 11." with

"The polynomial identifier for each lane should be unique; two physically adjacent lanes having the same identifier could impair operation of the PMD control function. If the same polynomial identifier is used for multiple lanes, different initial seeds should be used for each of those lanes. The default identifiers are (binary): for lane 0, 00; for lane 1, 01; for lane 2, 10; for lane 3, 11; for lane 4, 00; for lane 5, 01; for lane 6, 10; for lane 7, 11."

**Proposed Response**

Proposed Accept in Principle.

Resolve using the response to comment #122

---

Subclauses 45.2.3.24-26 all exist in 802.3-2022, so they should not be indicated as changes in the table.

**Suggested Remedy**

Remove the underlining from 45.2.3.24, 45.2.3.25, 45.2.3.26.

**Proposed Response**

Proposed Reject.

Although these clauses are in the base standard, there are no references to them in Table 45-233. Therefore it is appropriate to add them to the table with underlining.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
<th>Suggested Remedy</th>
</tr>
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<tbody>
<tr>
<td>36</td>
<td>50</td>
<td>E</td>
<td>D</td>
<td>W</td>
<td>PROPOSED REJECT.</td>
</tr>
<tr>
<td>Cl 45 SC 45.2.3</td>
<td>P 43</td>
<td>L 50</td>
<td>#36</td>
<td>Huber, Tom Nokia</td>
<td>Subclause 45.2.3.50 exists in 802.3-2022, so it should not be indicated as a change in the table. Remove the underlining from 45.2.3.50.</td>
</tr>
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<tr>
<td>37</td>
<td>59</td>
<td>T</td>
<td>D</td>
<td>W</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>Cl 124 SC 124.1</td>
<td>P 59</td>
<td>L 24</td>
<td>#37</td>
<td>Huber, Tom Nokia</td>
<td>Table 124-1 was modified by 802.3ck-2022. Change the editing instruction to add &quot;(as modified by IEEE 802.3ck-2022)&quot; and insert the rows for Annexes 120F and 120G into the table.</td>
</tr>
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<tr>
<td>38</td>
<td>61</td>
<td>E</td>
<td>D</td>
<td>W</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>Cl 124 SC 124.1</td>
<td>P 61</td>
<td>L 36</td>
<td>#38</td>
<td>Huber, Tom Nokia</td>
<td>Since there are only two items in the list, they should be separated with and rather than a comma. Change &quot;400GBASE-DR4, 400GBASE-DR4-2&quot; to &quot;400GBASE-DR4 and 400GBASE-DR4-2&quot;.</td>
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<td>39</td>
<td>85</td>
<td>E</td>
<td>D</td>
<td>W</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>Cl 162 SC 162.1</td>
<td>P 85</td>
<td>L 8</td>
<td>#39</td>
<td>Huber, Tom Nokia</td>
<td>Elsewhere in the clause (e.g. in 162.4), 800GAUI-n is used, which seems desirable since it will be more future-proof toward the 200G/lane AUI that will be added. Change 800GAUI-8 to 800GAUI-n.</td>
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<tr>
<td>40</td>
<td>127</td>
<td>E</td>
<td>D</td>
<td>W</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>Cl 169 SC 169.1.2</td>
<td>P 127</td>
<td>L 36</td>
<td>#40</td>
<td>Huber, Tom Nokia</td>
<td>The dashed lines between the OSI layers and the Ethernet layers are not in the correct locations. Align the upper two dashed lines with the boundaries of the data link layer in the OSI model.</td>
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<tr>
<td>41</td>
<td>128</td>
<td>E</td>
<td>D</td>
<td>W</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>Cl 169 SC 169.1.2</td>
<td>P 128</td>
<td>L 4</td>
<td>#41</td>
<td>Huber, Tom Nokia</td>
<td>Singular/plural disagreement in item a) Change &quot;when implemented as logical interconnection points&quot; to &quot;when implemented as a logical interconnection point&quot;.</td>
</tr>
</tbody>
</table>
**Comment ID 42**

**Huber, Tom**

**Nokia**

**Comment Type** E

**Comment Status** D (bucket1)

**Comment:** missing "(to)" in the transcoding description in item b)

**Suggested Remedy:**

Change "Transcoding from 66-bit blocks to (from 257-bit blocks (25B/257B))" to "Transcoding from (to) 66-bit blocks to (from 257-bit blocks (25B/257B))"

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Change from "Transcoding from 66-bit blocks to (from) 257-bit blocks (256B/257B)" to "Transcoding from (to) 66-bit blocks to (from) 257-bit blocks (256B/257B)"

---

**Comment ID 43**

**Huber, Tom**

**Nokia**

**Comment Type** E

**Comment Status** D (bucket1)

Since the table includes 400ZR as existing text, the editing instruction should note that the text shown is as modified by 802.3cw.

**Suggested Remedy:**

Add "(as modified by IEEE 802.3cw-202x)" after "Change Table 45-7"

**Proposed Response**

PROPOSED ACCEPT.

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**Comment ID 44**

**Huber, Tom**

**Nokia**

**Comment Type** T

**Comment Status** D (bucket1)

While the mapping of bits to registers is obvious, it seems incomplete to explicitly describe the mapping for bits 0-3 and say nothing at all about bits 4-7. A simpler statement of how the mapping works for all bits would be better and easier to maintain.

**Suggested Remedy:**

Change "Lane 0 maps to register 1.1120, lane 1 maps to register 1.1121, lane 2 maps to register 1.1122, and lane 3 maps to register 1.1123." to "Lanes 0-7 map to registers 1.1120 to 1.1127, respectively."

**Proposed Response**

PROPOSED ACCEPT.

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**Comment ID 45**

**Huber, Tom**

**Nokia**

**Comment Type** T

**Comment Status** D (bucket1)

While the mapping of bits to registers is obvious, it seems incomplete to explicitly describe the mapping for bits 0-3 and say nothing at all about bits 4-7. A simpler statement of how the mapping works for all bits would be better and easier to maintain.

**Suggested Remedy:**

Change "Lane 0 maps to register 1.1220, lane 1 maps to register 1.1221, lane 2 maps to register 1.1222, and lane 3 maps to register 1.1223." to "Lanes 0-7 map to registers 1.1220 to 1.1227, respectively."

**Proposed Response**

PROPOSED ACCEPT.
**Proposed Response**

There is some repetition between the paragraph about the PCS Synchronization process and the paragraph about the PCS Receive process in terms of aligning, reordering, and deskewing. Per the state diagrams, the PCS synchronization process ensures that all the lanes are aligned and deskewed, and the receive process deals with decoding the 66b characters.

**Suggested Remedy**

Add a sentence to the end of the penultimate paragraph: "When all 32 lanes are aligned and deskewed, and reordered, the align_status flag is set to indicate that the PCS has obtained alignment."

Revise the first two sentences of the final paragraph as follows: "The PCS Receive process separates the reordered PCS lanes into two sets of 16 PCs lanes..."

**PROPOSED ACCEPT IN PRINCIPLE.**

Implement the suggested remedy with editorial license.

---

**Comment ID** 51

**Huber, Tom**

**Nokia**

**Comment Type** E

**Comment Status** D

**OTN reference point**

The OTN reference point needs further discussion - it would be preferable if the mapping point was 257b blocks rather than 66b blocks.

**Suggested Remedy**

Supporting presentation to be provided.

**Proposed Response**

**Response Status** W

**PROPOSED REJECT.**

Pending Task Force review of supporting presentation.

---

**Comment ID** 51

**Huber, Tom**

**Nokia**

**Comment Type** E

**Comment Status** D

**rate range**

The inserted text is more complex than is necessary.

**Suggested Remedy**

Change "800GAUI-8 C2C or for 100GAUI-1, 200GAUI-2, or 400GAUI-4 C2C with" to "100GAUI-1, 200GAUI-2, 400GAUI-4, or 800GAUI-8 C2C"

**Proposed Response**

**Response Status** W

**PROPOSED ACCEPT IN PRINCIPLE.**

The text intentionally distinguishes between 800GAUI-8, for which the range is always +/- 50 PPM, and the other interfaces, for which it is conditional.

Therefore, the suggested remedy would not be correct. However, the text can be clarified.

In Table 120F-1 change the first sentence in footnote a to the following:

"For 100GAUI-1, 200GAUI-2, or 400GAUI-4 C2C with a PMA in the same package as the PCS sublayer or for any 800GAUI-8 C2C."

In Table 120G-1 change the first sentence in footnote a to the following:

"For 100GAUI-1, 200GAUI-2, or 400GAUI-4 C2M with a PMA in the same package as the PCS sublayer or for any 800GAUI-8 C2M."

Resolve along with comment #140.

---

**Comment ID** 51

**Huber, Tom**

**Nokia**

**Comment Type** E

**Comment Status** D

**(bucket1)**

The title is missing 'C2M' for 800GAUI-8

**Suggested Remedy**

Add 'C2M' to the end of the title

**Proposed Response**

**Response Status** W

**PROPOSED ACCEPT.**
IEEE P802.3df D1.0  1st Task Force review comments

Cl 173A SC 173A P 226 L 1  # 52
Huber, Tom Nokia

Comment Type  E  Comment Status  D
The text should be referencing figure 173A-3.

SuggestedRemedy
Change 173A-4 to 173A-3.

PROPOSED ACCEPT.

Cl 45 SC 45.2.4.4 P 46 L 54  # 53
Slavick, Jeff Broadcom

Comment Type  T  Comment Status  D
Need to add 800G capability register to PHY XS

SuggestedRemedy
Assign a bit in register 4.4 for 800G capable and create a description the same as the
400G bit replacing 400G with 800G

PROPOSED ACCEPT.

Cl 45 SC 45.2.5.15 P 46 L 54  # 55
Slavick, Jeff Broadcom

Comment Type  T  Comment Status  D
DTE XS AM lock registers need to be updated with 800G references and expanded to 32
AM lanes

SuggestedRemedy
Update (see 119.2.6.2.2) to (see 112.2.6.2.2) in 45.2.4.15.* and 45.2.4.16.*
Add the extra 16 lanes of amps_lock as well as was done for the PCS registers.

PROPOSED ACCEPT.

Cl 45 SC 45.2.5.17 P 46 L 54  # 56
Slavick, Jeff Broadcom

Comment Type  T  Comment Status  D
DTE XS lane mapping registers need to update with 800G references and expanded to 32
lanes

SuggestedRemedy
Bring in and update 45.2.5.17 and 45.2.5.18 adding references to Clause 171 and adding
16 more registers

PROPOSED ACCEPT.

Cl 45 SC 45.2.5.19 P 46 L 54  # 57
Slavick, Jeff Broadcom

Comment Type  T  Comment Status  D
DTE XS symbol error counter registers needs update with 800G references and expanded
to 32 lanes

SuggestedRemedy
Bring in and update 45.2.5.19 and 45.2.5.20 adding references to 172.3.4 and adding 16
more counters

PROPOSED ACCEPT.
IEEE P802.3df D1.0 1st Task Force review comments

Comment ID 63

Cl 169 SC 169.3.2 P 133 L 45 # 58
Slavick, Jeff  Broadcom
Comment Type T  Comment Status D  (bucket1)

800GAUI-n is not listed in the list of acronyms for Figure 169-3

SuggestedRemedy
Add 800GAUI-n to list of acronyms in Figure 169-3

Proposed Response  Response Status W  PROPOSED ACCEPT.

Cl 171 SC 171.4 P 151 L 38 # 59
Slavick, Jeff  Broadcom
Comment Type T  Comment Status D  (bucket1)

There is no am_lock variable in Clause 172

SuggestedRemedy
Change am_lock to amps_lock in Table 171-3 and 171-5

Proposed Response  Response Status W  PROPOSED ACCEPT.

Cl 172 SC 172.2.4.4 P 164 L 49 # 60
Slavick, Jeff  Broadcom
Comment Type T  Comment Status D  AM sync

Missing the relationship of the flow 0 257-bit block to the AM group

SuggestedRemedy
add "following the alignment marker group" before "in flow 0"

Proposed Response  Response Status W  PROPOSED ACCEPT IN PRINCIPLE.
Set aside this comment until after comment #90.

Cl 172 SC 172.3.1 P 172 L 35 # 61
Slavick, Jeff  Broadcom
Comment Type T  Comment Status D  (bucket1)

The variable name is amps_lock not am_lock

SuggestedRemedy
Change am_lock to amps_lock in Table 172-4

Proposed Response  Response Status W  PROPOSED ACCEPT.

Cl 45 SC 45.2.3.26a P 44 L 24 # 62
Slavick, Jeff  Broadcom
Comment Type T  Comment Status D  (bucket1)

Clause 172 (and 119) use a variable named amps_lock[x] for lane alignment lock status. Which was the name used in Cl91 and 161 for the FEC sublayers.

SuggestedRemedy
Bring in 45.2.3.25.* and 45.2.3.26.*
For indexes 16 to 32 change the "(see 82.2.19.2.2)" to be "(see 82.2.19.2.2) or amps_lock[16] (see 172.2.6.2.2)"
For indexes 0 to 15  and change the "(see 82.2.19.2.2)" to be "(see 82.2.19.2.2) or amps_lock[16] (see 119.2.6.2.2 and 172.2.6.2.2)"

Proposed Response  Response Status W  PROPOSED ACCEPT.

Cl 172 SC 172.3.5 P 173 L 32 # 63
Slavick, Jeff  Broadcom
Comment Type T  Comment Status D  fec counters
The CW counter is a RS-FEC sublayer counter in MDIO space, not a PCS counter.

SuggestedRemedy
Copy of the definition of 45.2.1.120a (802.3ck) into a set of PCS registers (45.2.3.###) and replace the Clause 161 references with 172.
Replace the text in 172.2.3.5 with the same text from 161.6.21 updating the MDIO register references to point to the newly created MDIO registers.
Update Table 172-4 to point to the newly created MDIO registers.

Proposed Response  Response Status W  PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.
Resolve along with comment #189.

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  Z/withdrawn
SORT ORDER: Comment ID

Comment ID 63  Page 13 of 45 2022-11-29 3:47:24 PM
The FEC_codeword_error_bin_i is a RS-FEC sublayer set of counters in MDIO space, not PCS counters.

**SuggestedRemedy**

Copy of the definition of 45.2.1.131a (802.3ck) into a set of PCS registers (45.2.3.###) and replace the Clause 161 references with 172.

Replace the text in 172.2.3.6 with the same text from 161.6.17 updating the MDIO register references to point to the newly created MDIO registers.

Update Table 172-4 to point to the newly created MDIO registers.

**Proposed Response**

ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.
Resolve along with comment #189.

Various clause 45 registers need to some Clause 172 references added.

**SuggestedRemedy**

A reference to Clause 172 needs to be added to 45.2.3.49

A reference to 172.2.5.3 needs to be added to:

- 45.2.3.60.1
- 45.2.3.60.2
- 45.2.4.61.4
- 45.2.3.61.6
- 45.2.3.64
- 45.2.3.65
- 45.2.3.66
- 45.2.4.21.1
- 45.2.4.21.2
- 45.2.4.22.2
- 45.2.4.22.3
- 45.2.4.22.4
- 45.2.4.22.5
- 45.2.4.25
- 45.2.4.26
- 45.2.4.27
- 45.2.5.21.1
- 45.2.5.21.2
- 45.2.5.22.2
- 45.2.5.22.3
- 45.2.5.22.4
- 45.2.5.22.5
- 45.2.5.25
- 45.2.5.26
- 45.2.5.27

A reference to 172.2.6.2.2 needs to be added to:

- 45.2.3.61.1
- 45.2.3.61.2
- 45.2.3.61.3
- 45.2.3.61.5
- 45.2.4.22.1
- 45.2.5.22.1

A reference to 172.3.2 needs to be added to 45.2.3.62, 45.2.4.23 and 45.2.5.23

A reference to 172.3.3 needs to be added to 45.2.3.63, 45.2.4.24 and 45.2.5.24
A reference to 172.3.4 needs to be added to 45.2.3.58

Proposed Response: PROPOSED ACCEPT.

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Slavick, Jeff  
Broadcom

**Comment Type:** T  
**Comment Status:** D  
(bucket1)

PHY XS AM lock registers need to be updated with 800G references and expanded to 32 AM lanes

**Suggested Remedy:**
Update (see 119.2.6.2.2) to (see 119.2.6.2.2 and 172.2.6.2.2) in 45.2.4.15 and 45.2.4.16. Add the extra 16 lanes of amps_lock as was done for the PCS registers.

Proposed Response: PROPOSED ACCEPT.

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Slavick, Jeff  
Broadcom

**Comment Type:** T  
**Comment Status:** D  
(bucket1)

PHY XS lane mapping registers need to update with 800G references and expanded to 32 lanes

**Suggested Remedy:**
Bring in and update 45.2.4.17 and 45.2.4.18 adding references to Clause 171 and adding 16 more registers

Proposed Response: PROPOSED ACCEPT.

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Slavick, Jeff  
Broadcom

**Comment Type:** T  
**Comment Status:** D  
(bucket1)

PHY XS symbol error counter registers need update with 800G references and expanded to 32 lanes

**Suggested Remedy:**
Bring in and update 45.2.4.19 and 45.2.4.20 adding references to 172.3.4 and adding 16 more counters

Proposed Response: PROPOSED ACCEPT.
The paragraph provides mapping of registers 1.1320-1.1323 to lanes [0:3] but not the additional lanes of [4:7] used for eight-lane interface types.

Suggested Remedy
change:
"Lane 0 maps to register 1.1320, lane 1 maps to register 1.1321, lane 2 maps to register 1.1322, and lane 3 maps to register 1.1323."
to:
"Lane 0 maps to register 1.1320, lane 1 maps to register 1.1321, lane 2 maps to register 1.1322, lane 3 maps to register 1.1323, lane 4 maps to register 1.1324, lane 5 maps to register 1.1325, lane 6 maps to register 1.1326, and lane maps to register 1.1327."

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #30

The paragraph provides mapping of registers 1.1420-1.1423 to lanes [0:3] but not the additional lanes of [4:7] used for eight-lane interface types.

Suggested Remedy
change:
"Lane 0 maps to register 1.1420, lane 1 maps to register 1.1421, lane 2 maps to register 1.1422, and lane 3 maps to register 1.1423."
to:
"Lane 0 maps to register 1.1420, lane 1 maps to register 1.1421, lane 2 maps to register 1.1422, lane 3 maps to register 1.1423, lane 4 maps to register 1.1424, lane 5 maps to register 1.1425, lane 6 maps to register 1.1426, and lane maps to register 1.1427."

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #30

In Table 162-3a, the rightmost column heading is incorrect as the table refers to 800GBASE-CR8.

Suggested Remedy
Change rightmost column heading to "800GBASE-CR8"

PROPOSED ACCEPT.

With the addition of new sub-note "a", the rest of the sub-notes from the table 162-5 in P802.3ck are re-indexed. (i.e. 'a' becomes 'b', 'b' becomes 'c'). However, the new notes 'b' and 'c' do not have the relevant strikeout text

Suggested Remedy
Correct as necessary

PROPOSED ACCEPT IN PRINCIPLE.
Table footnote are numbered automatically in FrameMaker and cannot be struck out.
Change the editorial instruction from
"Change Table 162–5, Table 162–6, and Table 162–7 as follows:"
to
"Change Table 162–5, Table 162–6, and Table 162–7, including footnotes, as follows:"

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #74.

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #75.
<table>
<thead>
<tr>
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<th>Page 17 of 45</th>
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<tbody>
<tr>
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<td>Row entry for PMA800 has incorrect status value of &quot;CR4:M&quot;. It should be &quot;CR8:M&quot;</td>
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<tr>
<td>Comment ID</td>
<td>Page 17 of 45</td>
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<tr>
<td>77</td>
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<td>In P802.3ck, Clause 162.13 is the environmental specifications and Clause 162.14 is the PICS. The 162.13 sub clause is missing from the draft and creates an issue where the PICs became sub clause 162.13.</td>
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<td>Fix editing instruction on p96, line 1 to reference the heading of 162.14</td>
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<td>Correct the sub clause number for the PICS to 163.14 in the title and the sub clauses.</td>
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<td>In P802.3ck, Clause 163.13 is the environmental specifications and Clause 163.14 is the PICS. The 163.13 sub clause is missing from the draft and creates an issue where the PICs became sub clause 163.13.</td>
<td></td>
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<td>Fix editing instruction on p105, line 1 to reference the heading of 163.14</td>
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<td>Correct the sub clause number for the PICS to 163.14 in the title and the sub clauses.</td>
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<tr>
<td>Figure 169-4 variable &quot;q&quot; should be italics like 'n' and 'p'. Both in middle and bottom of figure</td>
<td></td>
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<tr>
<td>Proposed Response</td>
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</table>

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 Z/withdrawn
SORT ORDER: Comment ID
IEEE P802.3df D1.0 1st Task Force review comments

**Comment ID 81**

Cl 120F SC 120F.1 P 198 L 48 # 81

Lusted, Kent
Intel Corporation

Comment Type: T
Comment Status: D

Paragraph omits the eight-lane 800GAUI-8.

**Suggested Remedy**
Replace the second sentence in the 5th paragraph with "Each 100GAUI-1, 200GAUI-2, 400GAUI-4, or 800GAUI-8 C2C data path contains one, two, four, or eight, respectively, differential lanes, which are AC coupled."

**Proposed Response**
Response Status: W

PROPOSED ACCEPT.

**Comment ID 82**

Cl 120F SC 120F.1 P 198 L 52 # 82

Lusted, Kent
Intel Corporation

Comment Type: TR
Comment Status: D

The mapping of the differential voltage level to the PAM4 symbol is missing in Annex 120F. It is also not present in Annex 120F in IEEE Std. 802.3ck-202x. The mapping of the differential voltage level to the PAM4 symbol level is important for interoperability.

**Suggested Remedy**
Add a new sentence to the 5th paragraph: "The highest differential level corresponds to the symbol three and the lowest level corresponds to the symbol zero."

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

In the sixth paragraph, change "The C2C transmitter and the receiver use PAM4 signaling" To: "The C2C transmitter and receiver use PAM4 signaling. The highest differential level corresponds to the tx_symbol or rx_symbol value three, and the lowest differential level corresponds to the tx_symbol or rx_symbol value zero."

**Comment ID 83**

Cl 162B SC 162B.1 P 215 L 11 # 83

Lusted, Kent
Intel Corporation

Comment Type: E
Comment Status: D

The title of Annex 162B is missing "C2M" after the 800GAUI-8 entry.

**Suggested Remedy**
Add "C2M" after 800GAUI-8

**Proposed Response**
Response Status: W

PROPOSED ACCEPT.

**Comment ID 84**

Cl 162 SC 162.8.1 P 191 L 22 # 84

Opsasnick, Eugene
Broadcom

Comment Type: ER
Comment Status: D

At top-middle of Figure 162-2, the added text reads "800BASE-CR4 8x", but "-CR4" should probably be "-CR8".

**Suggested Remedy**
Replace "800BASE-CR4 8x" with "800BASE-CR8 8x."

**Proposed Response**
Response Status: W

PROPOSED ACCEPT.

**Comment ID 85**

Cl 163 SC 163.3 P 200 L 27 # 85

Opsasnick, Eugene
Broadcom

Comment Type: ER
Comment Status: D

At end of first line of paragraph, 800GBASE-KR4 (wraps to line 28), "-KR4" should probably be "-KR8"

**Suggested Remedy**

**Proposed Response**
Response Status: W

PROPOSED ACCEPT.

**Comment ID 86**

Cl 172 SC 172.2.6.3 P 170 L 19 # 86

Opsasnick, Eugene
Broadcom

Comment Type: TR
Comment Status: D

"State diagrams are identical to those specified in 119.2.6.3 ... "

State diagrams in Figure 119-14 "Transmit state diagam" and Figure 119-15 "Receive state diagram" can cause logic implementation issues at high rate port speeds (i.e. 800GbE) as shown in opsasnick_3df_01a_221005.pdf. A "stateless" encode/decode option to these state diagrams could be allowed since the state diagrams were originally designed for non-FEC interfaces. Interfaces with required FEC should have sufficient protection to allow for the stateless coding. An updated presentation showing the error analysis will be forthcoming.

**Suggested Remedy**
To be shown in an updated presentation for December comment resolution meetings.

**Proposed Response**
Response Status: W

PROPOSED REJECT.

Pending Task Force review of supporting presentation.
Proposed Response

Comment Type: ER
In Table 120G-4, four instances of "800GAUI-4" in last two rows of the table should likely be "800GAUI-8"

Suggested Remedy
Replace "800GAUI-4" with "800GAUI-8"

PROPOSED ACCEPT IN PRINCIPLE.
Change 800GAUI-4 to 800GAUI-8 in the bottom two rows of the table (4 instances).

Comment Type: ER
In second line of paragraph, "800GBASE-DR4" should probably be "...-DR8". Same text appears on line 25 in 124.8.5b, and on page 77, line 29, section 124.8.9.2.

Suggested Remedy
Replace "800GBASE-DR4" with "800GBASE-DR8".

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #13.

Comment Type: ER
Looks like a typo. "16834 bit times" should be "16384 bit times"

Suggested Remedy
Change 16834 to 16384.

PROPOSED ACCEPT.

Comment Type: T
Figure 172–2—Functional block diagram
The block diagram includes two flows for TX and Rx.
Both TX flows are supposed to insert the alignment markers in sync with each other. This does not appear explicitly in the diagram.

Suggested Remedy
Possible improvement #1:
Add arrow with the word synchronization between the "Alignment insertion" blocks.
Possible improvement #2:
Add a footnote that the two "Alignment insertion" should operate in synchronized manner.

PROPOSED ACCEPT IN PRINCIPLE.
The insertion location of the AM pattern in both flows must be done at the same point in the 66-bit block stream prior to the block distribution.
The intent of the third bullet in the exception list in 172.2.4.4 is to enforce the synchronization of the AM insertion between the two flows, without defining a specific implementation.
There will be an editorial presentation proposing an update to the text used in the third bullet in the exception list in 172.2.4.4 to make the intent clearer.

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #90.

Comment Type: T
This sentence implicitly means that the alignment insertion process of the two flows should be synchronized.
To avoid mistakes, it would be preferable to explicitly state that the two alignment insertion are synchronized.

Suggested Remedy
Add the following sentence before "The first 66-bit...” sentence:
"The marker insertion functions of the two flows must insert their markers at the exact same time (block unit), i.e. in a synchronized manner"

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #90.
**Proposed Response**

**Comment ID** 92

**Cl** 30 **SC** 30.5.1.1.2 **P** 33 **L** 1

- **Comment Type**: ER
- **Comment Status**: D
- **Commentor**: Wang, Haojie
- **Company**: China Mobile

**Comment**: There should be "800GBASE-R" other than "400GBASE-R"

**Suggested Remedy**: Change "400GBASE-R" to "800GBASE-R"

**Response Status**: W

**PROPOSED ACCEPT.**

---

**Proposed Response**

**Comment ID** 93

**Cl** 30 **SC** 30.5.1.1.2 **P** 33 **L** 3

- **Comment Type**: ER
- **Comment Status**: D
- **Commentor**: Wang, Haojie
- **Company**: China Mobile

**Comment**: There should be "800GBASE-R" other than "400GBASE-R"

**Suggested Remedy**: Change "400GBASE-R" to "800GBASE-R"

**Response Status**: W

**PROPOSED ACCEPT.**

---

**Proposed Response**

**Comment ID** 94

**Cl** 124 **SC** 124.2 **P** 62 **L** 32

- **Comment Type**: ER
- **Comment Status**: D
- **Commentor**: Nicholl, Gary
- **Company**: Cisco Systems

**Comment**: The positions of "Rx" in figure 124-6 is inconsistent with the text at line 27, which is depicted as the right-most four positions.

**Suggested Remedy**: Plot the four "Rx" at the right-most four positions.

**Response Status**: W

**PROPOSED ACCEPT IN PRINCIPLE.**

Resolve using the response to comment #14.

---

**Proposed Response**

**Comment ID** 95

**Cl** 124 **SC** 124.2 **P** 62 **L** 16

- **Comment Type**: ER
- **Comment Status**: D
- **Commentor**: Nicholl, Gary
- **Company**: Cisco Systems

**Comment**: The space after "these" should be underlined.

**Suggested Remedy**: Underline the space after "these"

**Response Status**: W

**PROPOSED ACCEPT.**

---

**Proposed Response**

**Comment ID** 96

**Cl** 124 **SC** 124.2 **P** 62 **L** 29

- **Comment Type**: ER
- **Comment Status**: D
- **Commentor**: Nicholl, Gary
- **Company**: Cisco Systems

**Comment**: The space after "have" should be underlined

**Suggested Remedy**: Underline the space after "have"

**Response Status**: W

**PROPOSED ACCEPT.**

---

**Proposed Response**

**Comment ID** 97

**Cl** 124 **SC** 124.5.1 **P** 65 **L** 13

- **Comment Type**: ER
- **Comment Status**: D
- **Commentor**: Nicholl, Gary
- **Company**: Cisco Systems

**Comment**: Missing editing instruction to update the title of Figure 124-2 from "Block diagram for 400GBASE-DR4 transmit/receive paths" to "Block diagram for 400GBASE-DR4 or 400GBASE-DR4-2 transmit/receive paths"

**Suggested Remedy**: Change the title of Figure 124-2 from "Block diagram for 400GBASE-DR4 transmit/receive paths" to "Block diagram for 400GBASE-DR4 or 400GBASE-DR4-2 transmit/receive paths"

**Response Status**: W

**PROPOSED ACCEPT.**
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<th>Table/Format</th>
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**IEEE P802.3df D1.0 1st Task Force review comments**

**Proposed Response #104**

**Cl 124 SC 124.7.3 P72 L40 #104**

Nicholl, Gary  
Cisco Systems

**Comment Type ER**  
**Comment Status D** (bucket1)

The comma after "400GBASE-DR4" should be underlined.

**Suggested Remedy**

Underline the comma after "400GBASE-DR4".

**Proposed Response Response Status W**

**PROPOSED ACCEPT.**

---

**Proposed Response #105**

**Cl 124 SC 124.11.1 P79 L20 #105**

Nicholl, Gary  
Cisco Systems

**Comment Type T**  
**Comment Status D** reflections

Table 124.11. Why would the optical return loss be any different between DR4/DR8 and DR4-2/DR8-2? Don’t they both use the same MPO connector. The value of 25dB for DR4-2/DR8-2 appears to have been copied over from 100GBASE-FR1 in 802.3cu, but isn’t FR1 using a different optical connector (LC versus MPO).

**Suggested Remedy**

This is more of a question for clarification.

**Proposed Response Response Status W**

**PROPOSED ACCEPT IN PRINCIPLE.**

Resolve using the response to comment #132.

---

**Proposed Response #106**

**Cl 124 SC 124.11.3.1.1 P80 L38 #106**

Nicholl, Gary  
Cisco Systems

**Comment Type TR**  
**Comment Status D** (bucket1)

Figure 124-6 indicates a different lane assignment for 400GBASE-DR4 than is in Clause 124 of the published version of the 802.3 standard. This would appear to make 400GBASE-DR4 incompatible with the current published standard.

**Suggested Remedy**

Change the lane assignment in Figure 124-6 in 802.3df D1.0 to match the lane assignment in Figure 124-6 of "P802.3_D3p2".

**Proposed Response Response Status W**

**PROPOSED ACCEPT IN PRINCIPLE.**

Resolve using the response to comment #14.

---

**Proposed Response #107**

**Cl 172 SC 172.2.4.1 P164 L28 #107**

Nicholl, Shawn  
AMD

**Comment Type TR**  
**Comment Status D** OTN reference point

The NOTE says "The stream of 66-bit blocks generated by this process". However, there are two streams generated in the above process. It would be clearer if the end of the sub-clause represented the end of the process and aligned with the OTN reference point in the note.

Also, it would be clearer for the text related to tx_coded<65:0> to coincide with the end of the sub-clause (i.e. for that text to follow any discussion related to rate compensation).

Also, where possible it is helpful to re-use text from 802.3-2022 Clause 119.2.4.1 as it enhances readability (i.e. simplifies compare/contrast between Clause 119 and Clause 172).

**Suggested Remedy**

Propose the following text:

172.2.4.1 Encode and rate matching

The transmit PCS generates 66-bit blocks based upon the TXD<63:0> and TXC<7:0> signals received from the 800GMII. One 800GMII data transfer is encoded into one 66-bit block. If the transmit PCS spans multiple clock domains, it may also perform clock rate compensation via the deletion of idle control characters or sequence ordered sets or the insertion of idle control characters.

Idle control characters or sequence ordered sets are removed, if necessary, to accommodate the insertion of the alignment markers. See 119.2.3.5 and 119.2.3.8 for the deletion and insertion rules, and 172.2.4.5 for more details on alignment markers.

The transmit PCS generates blocks as specified in the transmit state diagram as shown in Figure 119-14. The contents of each 66-bit block are contained in a vector tx_coded<65:0>. tx_coded<1:0> contains the sync header and the remainder of the bits contain the payload.

**NOTE:** The stream of tx_coded<65:0> 66-bit blocks generated by this process, together with the FEC_degraded_SER and rx_local_degraded bits should be used as the reference signal for mapping to OTN.

The transmit PCS generates blocks as specified in the transmit state diagram as shown in Figure 119-14. The contents of each 66-bit block are contained in a vector tx_coded<65:0>. tx_coded<1:0> contains the sync header and the remainder of the bits contain the payload.

**172.2.4.1 66B/66B block distribution**

The stream of tx_coded<65:0> 66-bit blocks are distributed to the two flows in a round robin fashion by the block distribution function such that the first 66-bit block is sent to flow 0, the second 66-bit block is sent to flow 1, the third 66-bit block is sent to flow 0, and subsequent 66-bit blocks continue in a round robin distribution procedure across the two flows. This forms two streams, tx_coded_flow0<65:0> and tx_coded_flow1<65:0>.

172.2.4.3 64B/66B to 256B/257B transcoder

Comment ID 107  Page 22 of 45  2022-11-29 3:47:25 PM
The 64B/66B to 256B/257B transcoder in each flow is identical to that specified in 119.2.4.2. The transcoder for flow 0 uses the stream of tx_coded_flow0<65:0> 66-bit blocks. The transcoder for flow 1 uses the stream of tx_coded_flow1<65:0> 66-bit blocks.

172.2.4.4 Scrambler

<This Comment Proposes no Changes to Text inside this Sub-Clause>

172.2.4.5 Alignment marker mapping and insertion

<This Comment Proposes no Changes to Text inside this Sub-Clause>

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

The suggested remedy inserts a subclause for the 66-bit block distribution into 172.2.4 resulting in subclause numbering within 172.2.4 that does not align with the subclause numbers in CL119. This impacts the readability when comparing/constrasting CL172 with CL119. Hence, the 66-bit block distribution was incorporated into 172.2.4.1 keeping the rest of the subclause numbering the same as in CL119. The functions defined by subclauses 172.2.4.2 are identical to those performed by each flow in 800GbE PCS, and hence 172.2.4.1 was intentionally kept unchanged and references back to 119.2.4.2.

The first sentence of the comment points out a potential source of confusion regarding the 66-bit stream that is used for mapping to OTN and the proposed response below address that comment.

Change NOTE from

"NOTE—The stream of 66-bit blocks generated by this process, together with the FEC_degraded_SER and rx_local_degraded bits should be used as the reference signal for mapping to OTN."

to

"NOTE—The stream of 66-bit blocks generated by the encode and rate matching process (see Figure 172-2) prior to 66-bit block distribution, together with the FEC_degraded_SER and rx_local_degraded bits should be used as the reference signal for mapping to OTN."

PROPOSED ACCEPT IN PRINCIPLE.

Let tx_coded_j<65:0> and tx_coded_k<65:0> represent two consecutive blocks in the tx_coded<65:0> stream. Notably, tx_coded_j<65:0> belongs to tx_coded_flow0<65:0> stream. And, tx_coded_k<65:0> belongs to tx_coded_flow1<65:0> stream.

Let tx_coded_j<65:0> represent the first 66-bit block of the 257-bit transcoded block following the alignment marker group in flow 0. It is required that tx_coded_k<65:0> shall be the first 66-bit block of the 257-bit transcoded block following the alignment marker group in flow 1.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

For consistency with 119.2.6.2.2, propose to replace text "with x = 0:31" with text "with x = 0:31 for 800GBASE-R."

**Proposed Response**

PROPOSED REJECT.

The proposed change is not necessary since Clause 172 is only for 800GBASE-R. CL119 specified 200GBASE-R or 400GBASE-R because the same clause includes the PCS for both 200GE and 400GE.
<table>
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<th>P</th>
<th>L</th>
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**Comment Type** E **Comment Status** D

"Amendment:" - there should be an amendment number here. According to pages 13 and 14, this would be number 10. But 9 amendments before a revision is too many so there should be another roll-up and this could be amendment 1 of 802.3-2023.

**Suggested Remedy**

Insert number or placeholder. Also on pages 11 and 27. Add it on page 14. If some amendment numbers including this one are provisional, that can be stated.

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

PROPOSED REJECT.

As the comment alludes, the amendment number that will be assigned to this amendment is not known at this time with any certainty. An amendments number may be inserted once a number is known with better certainty, likely near the end of WG Ballot.

<table>
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**Comment Type** E **Comment Status** D

Media Access Control Parameters for 800 Gb/s and Physical Layers and Management Parameters for 400 Gb/s and 800 Gb/s Operation. Draft D1.0 is prepared for task force preview

**Suggested Remedy**

Media Access Control parameters for 800 Gb/s and Physical Layers and management parameters for 400 Gb/s and 800 Gb/s operation. Draft D1.0 is prepared for Task Force preview

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

PROPOSED ACCEPT IN PRINCIPLE.

The comment appears to be pointing out that capitalization on some words need s to be corrected.

Change: "Media Access Control Parameters for 800 Gb/s and Physical Layers and Management Parameters for 400 Gb/s and 800 Gb/s Operation. Draft D1.0 is prepared for task force preview"

To:

"Media Access Control parameters for 800 Gb/s and Physical Layers and management parameters for 400 Gb/s and 800 Gb/s operation. Draft D1.0 is prepared for Task Force preview"

Implement with editorial license.
Comment Type: E  Comment Status: D

3bj and 3bk!! They were approved in 2013 and 2014. 3cy uses 3cx and 3cz as its examples, 3cz uses 3dd, 3cs, 3db, 3ck, 3de and 3cx.

Suggested Remedy
Instead of or as well as this bad example, list all the exact amendments and drafts that this draft is built against, as P802.3cz does. Also, say which drafts affect this draft and which are believed not to, preferably clause by clause. The editors must have and agree this information; no reason not to share it with the volunteers who do the review work, and the staff editors.

Proposed Response
PROPOSED ACCEPT IN PRINCIPLE.
The example projects listed are indeed obsolete. This example list from the FrameMaker template needs to be updated for each project and may again change as previous amendments are incorporated into a revision. The examples are not really required so these examples should be deleted here and in the template.

Delete "(e.g., IEEE P802.3bj and IEEE P802.3bk)"

Comment Status: D  Response Status: W
# IEEE P802.3df D1.0 1st Task Force review comments

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<tr>
<td>122</td>
<td>TR</td>
<td>D</td>
<td>PRBS seed (bucket1)</td>
<td>Dawe, Piers</td>
<td>Nvidia</td>
<td>This says &quot;The polynomial identifier for each lane should be unique; two physically adjacent lanes having the same identifier could impair operation of the PMD control function.&quot; This is in a section defining the meanings of bits in a memory map. The memory map serves the sublayer, not the other way round. Advice about signal integrity should be in the clause concerned. With only four polynomials and eight lanes, the polynomials themselves can't all be different, but that's OK. Impairment is very unlikely unless adjacent lanes use the same polynomial AND the PRBS13Qs in the training pattern are aligned in time with each other. We have written generations of PMD and AUI clauses that use the same pattern on multiple lanes, but they should be skewed, e.g. 120G.3.2.2: &quot;For the case where PRBS13Q or PRBS31Q are used with a common clock, there is at least 31 UI delay between the patterns on one lane and any other lane, so that the symbols on each lane are not correlated.&quot; The training frame is 98.3% PRBS13Q. In principle, one could incur the risk warned against with a lane carrying &quot;identifier_i&quot; = 0 and an adjacent lane carrying &quot;identifier_i&quot; = 4, with an unlucky timing offset between lanes. As &quot;The PMD shall implement one instance of the PMD control function described in 136.8.11 for each lane&quot;, the state machine for each lane can be started and restarted asynchronous to adjacent lanes, so starting the training pattern with a different seed won't solve the issue. The text &quot;For 8-lane use cases different initial seeds should be used where the same polynomial is being reused&quot; recommends a course of action that, on investigation, doesn't address the issue. We should tell the reader what to avoid, not how to avoid it. Also, the ETC spec has already covered this ground. It uses the same four polynomials and seeds, twice over. No implementation can follow the ETC spec AND this draft (because the default seeds differ) but there is no benefit in the difference.</td>
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<tr>
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<td>Dawe, Piers</td>
<td>Nvidia</td>
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<td>&quot;for PMD lane 1; etc&quot;: a bit terse and informal</td>
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<td>121</td>
<td>E</td>
<td>D</td>
<td>92.7.12 and 136.8.11.1.3</td>
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<td>Nvidia</td>
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<td>Dawe, Piers</td>
<td>Nvidia</td>
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<td>&quot;for PMD lane 1; etc&quot;: a bit terse and informal</td>
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<td>E</td>
<td>D</td>
<td>92.7.12 and 136.8.11.1.3</td>
<td>Dawe, Piers</td>
<td>Nvidia</td>
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</table>
IEEE P802.3df D1.0 1st Task Force review comments

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
Replace "The polynomial identifier for each lane should be unique; two physically adjacent lanes having the same identifier could impair operation of the PMD control function. The default identifiers are (binary): for lane 0, 00; for lane 1, 01; for lane 2, 10; for lane 3, 11; for lane 4, 00; for lane 5, 01; for lane 6, 10; for lane 7, 11. For 8-lane use cases different initial seeds should be used where the same polynomial is being reused." with
"The polynomial identifier for adjacent lanes should be unique to avoid a risk of impairment of the PMD control function. If the same polynomial identifier is used for multiple lanes, different initial seeds should be used for each of those lanes. The default identifiers are (binary): for lane 0, 00; for lane 1, 01; for lane 2, 10; for lane 3, 11; for lane 4, 00; for lane 5, 01; for lane 6, 10; for lane 7, 11."
The adopted baseline clearly states what the default seeds in Table 162-10a should be (see: https://www.ieee802.org/3/df/public/22_09/lusted_3df_01a_2209.pdf). A user would be able to change the default values so that the seeds for lanes 4 to 7 match 0 to 3 by writing appropriate seed values to registers 1.1450 through 1.1457. Therefore it is not appropriate to change Table 162-10a.
See also the response to comment #139

Ci 124 SC 124  P 59  L 36  # 123
Dawe, Piers  Nvidia
Comment Type  T  Comment Status  D
Wondering if we want 200GBASE-DR2 and 200GBASE-DR2-2. Will people connect 200G-class servers with copper or MMF only until 200GBASE-DR1 is cheaper or they move on to 400G-class servers?

Suggested Remedy
If people will want to connect 200G-class servers with SMF, perhaps to a CPO switch, before 200GBASE-DR1 is cheaper, then it will happen. If it will happen, it would be best to include it so that it gets official code points.

Proposed Response  Response Status  W
PROPOSED REJECT.

The comment is proposing the addition of two PMD types for which no objectives have been adopted and thus is out of scope for this draft.

Ci 124 SC 124.1  P 61  L 36  # 124
Dawe, Piers  Nvidia
Comment Type  E  Comment Status  D
400GBASE-DR4, 400GBASE-DR4-2

Suggested Remedy
400GBASE-DR4 and 400GBASE-DR4-2

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #38.

Ci 124 SC 124.2  P 62  L 13  # 125
Dawe, Piers  Nvidia
Comment Type  E  Comment Status  D
six paragraphs 124.2

Suggested Remedy
six paragraphs in 124.2

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
Change the instruction to:
"Change the first six paragraphs in 124.2 as follows:"

Comment ID 125  Page 27 of 45
2022-11-29 3:47:25 PM

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  Z/withdrawn
SORT ORDER: Comment ID
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**IEEE P802.3df D1.0 1st Task Force review comments**

**Comment ID 126**

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<th>P 62</th>
<th>L 40</th>
<th># 126</th>
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Dawe, Piers Nvidia

**Comment Type** TR  **Comment Status** D  **PCSL interleaving (CC)**

The unlikely case of defective transition density is far more significant than the very modest difference between 2-way and 4-way RS-FEC interleaving. If we are going to break precedent and abandon unrestricted bit-multiplexing, transition density is the first thing to get right, always. With 100G AUI lanes, the Tx silicon can ensure the problem doesn't happen, and we are not mandating 50G/lane AUIs for 800G. We have had some years after this problem was discovered before 800G designs, so it should not be happening now. Let's say so.

**SuggestedRemedy**

Change "See NOTE at the end of 120.5.2 concerning the transition density of lanes operating at this nominal signaling rate." to "For 400GBASE-DR4 and 400GBASE-DR4-2, see NOTE at the end of 120.5.2 concerning the transition density of lanes operating at this nominal signaling rate. For 800GBASE-DR8 and 800GBASE-DR8-2, see 173.4.2." Similarly in 124.7.2.

In 173.4.2, say that unlike in 120, it is the transmit side PCS and PMA's responsibility to avoid the defective transition density, and give some recommendations.

See other comments.

**Proposed Response**  **Response Status** W  **PROPOSED REJECT.**

Resolve using the response to comment #166.

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**Comment ID 128**

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<th>P 71</th>
<th>L 30</th>
<th># 128</th>
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</table>

Dawe, Piers Nvidia

**Comment Type** E  **Comment Status** D  **TDECQ**

SECQ (as in 124.8.9.1), three times

**Proposed Response**  **Response Status** W  **PROPOSED ACCEPT IN PRINCIPLE.**

For parameter, Receiver sensitivity (OMAouter), each lane (max), change first occurrence of TDECQ to SECQ and 2 further occurances to TECQ.

**SuggestedRemedy**

In Table 124-9, after 119.2.4.9, add "or 172.2.4.9"

**Proposed Response**  **Response Status** W  **PROPOSED ACCEPT IN PRINCIPLE.**

Implement suggested remedy with editorial license

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**Comment ID 130**

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<th>P 75</th>
<th>L 4</th>
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Dawe, Piers Nvidia

**Comment Type** E  **Comment Status** D  **TECQ**

In 173.4.2, say that unlike in 120, it is the transmit side PCS and PMA's responsibility to avoid the defective transition density, and give some recommendations.

**Proposed Response**  **Response Status** W  **PROPOSED REJECT.**

Resolve using the response to comment #166.

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**Comment ID 132**

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<th>P 76</th>
<th>L 5</th>
<th># 130</th>
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Dawe, Piers Nvidia

**Comment Type** E  **Comment Status** D  **TX test**

This says "The 400GBASE-DR4-2 or 800GBASE-DR8-2 transmitter is tested using an optical channel that meets the requirements for 100GBASE-FR1 in 140.7.5.2" but these PMDs have an optical return loss tolerance of 21.4 while 100GBASE-FR1 uses an optical return loss of 17.1 dB. The cable plant is different (array connectors are angled).

**SuggestedRemedy**

As elsewhere: change "See NOTE at the end of 120.5.2 concerning the transition density of lanes operating at this nominal signaling rate." to "For 400GBASE-DR4 and 400GBASE-DR4-2, see NOTE at the end of 120.5.2 concerning the transition density of lanes operating at this nominal signaling rate. For 800GBASE-DR8 and 800GBASE-DR8-2, see 173.4.2."

In 173.4.2, say that unlike in 120, it is the transmit side PCS and PMA's responsibility to avoid the defective transition density, and give some recommendations.

**Proposed Response**  **Response Status** W  **PROPOSED ACCEPT IN PRINCIPLE.**

Implement suggested remedy with editorial license.
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<th>P 79</th>
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**Comment Type E** Comment Status D reflections

These fiber optic cabling characteristics for 400GBASE-DR4-2 and 800GBASE-DR8-2 are not in the baseline, but are the same as for 100GBASE-FR1. The optical return loss should not follow FR1, as the optical return loss tolerance is significantly different and the table of discrete reflectances is different.

**Suggested Remedy**

Adjust the optical return loss as necessary to be consistent with the adopted optical return loss tolerance and table of discrete reflectances.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #132.

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<th>P 79</th>
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<th># 131</th>
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**Comment Type T** Comment Status D reflections

Part of the baselines is missing. Both baselines have a table of discrete reflectances above 55 dB.

**Suggested Remedy**

Add this (these) as a new column(s) in Table 124-9

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

A presentation will be provided for task force discussion.

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<th># 131</th>
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**Comment Type E** Comment Status D reflections

It seems odd that the table of discrete reflectances above 55 dB for 800GBASE-DR8 in the baseline is not the same as the existing table for 400GBASE-DR4, but it is the same as 400GBASE-DR4-2 and 800GBASE-DR8-2.

**Suggested Remedy**

Reconcile the tables for 400GBASE-DR4 and 800GBASE-DR8

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #132.
**Comment Type** E  **Comment Status** D  **fiber connector (CC)**  
"The transmit optical lanes occupy the leftmost eight positions. The receive optical lanes occupy the rightmost eight positions": as there are only 12 positions, "most" is not really applicable.

**Suggested Remedy**  
Change to "The transmit optical lanes occupy the eight positions on the left. The receive optical lanes occupy the eight positions on the right.

**PROPOSED REJECT.**  
The proposed changes do not improve the accuracy or clarity of the draft. There are 16 positions.

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<td><strong>Comment Type</strong> T  <strong>Comment Status</strong> D</td>
<td>PRBS seed</td>
<td></td>
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</table>
the state of the PRBS generator shall be set to a value in the variable - eh? If the variable is a 13-bit seed, it contains 0s and 1s.

**Suggested Remedy**  
Rewrite for clarity

**Proposed Response**  **Response Status** W  
PROPOSED REJECT.  
The text referred to by the comment is based on existing text in clause 136: "At the start of the training pattern, the state of the PRBS generator shall be set to the value seed_i." This text provides sufficient information for correct implementation the PMD control function. The suggested remedy does not provide sufficient detail to implement.
IEEE P802.3df D1.0 1st Task Force review comments

**Comment Type**: TR
**Comment Status**: D
**PRBS seed**

Default seeds 4 to 7 are different to seeds 0 to 3, contrary to the ETC 800G spec. No implementation can follow the ETC spec AND this draft (because the default seeds differ) but there is no benefit in the difference.

We have written generations of PMD and AUI clauses that use the same pattern on multiple lanes, but they should be skewed, e.g. 120G.3.2.2: “For the case where PRBS13Q or PRBS31Q are used with a common clock, there is at least 31 UI delay between the patterns on one lane and any other lane, so that the symbols on each lane are not correlated.” The training frame is 98.3% PRBS13Q. In principle, one could incur the risk warned against with a lane carrying “identifier_i” = 0 and an adjacent lane carrying “identifier_i” = 4, with an unlucky timing offset between lanes. As “The PMD shall implement one instance of the PMD control function described in 136.8.11 for each lane”, the state machine for each lane can be started and restarted asynchronous to adjacent lanes, so starting the training pattern with a different seed won’t solve the issue.

**Suggested Remedy**

1. Make the default seeds in Table 162-10a the same as in the ETC spec (seeds 4 to 7 are the same as seeds 0 to 3).
2. ETC say “it is recommended to ensure that physically adjacent lanes do not use the same polynomial”. Recommend this.
3. Also, point out that significant correlation between any lanes can be avoided by a combination of seed and timing offset. Leave it to the implementer to choose how to do this.

**Proposed Response**

PROPOSED REJECT.

Aligning an IEEE standard with a previously published document may be preferable where possible, but it is not always done.

The default seed values were explicitly set by the adopted baseline proposal https://www.ieee802.org/3/df/public/22_09/lusted_3df_01a_2209.pdf, which included a detailed description, and was approved by unanimous consent.

The seed values are not normative, and using non-default values is permitted, so there is no compliance concern.

The content of item 2 and 4 of the suggested remedy is covered by text in 45.2.1.168 (“should” is a recommendation).

Resolve with #122.

---

**Comment Type**: E
**Comment Status**: D
**rate range**

“For an 800GBASE-CR8 PMD or for a 100GBASE-CR1, 200GBASE-CR2, or 400GBASE-CR4 PMD in the same package as the PCS sublayer”: it’s very easy to misunderstand this.

**Suggested Remedy**

At least put a comma after “CR8 PMD”. Also in 163.9.2.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

The text intentionally distinguishes between 800GAUI-8, for which the range is always +/- 50 PPM, and the other interfaces, for which it is conditional.

Therefore the suggested remedy would not be correct. However, the text can be clarified.

In Table 162-11 change the first sentence in footnote a to the following:

“For 100GBASE-CR1, 200GBASE-CR2, or 400GBASE-CR4 PMD with a PMA in the same package as the PCS sublayer or for any 800GBASE-CR8 PMD.”

In Table 163-5 change the first sentence in footnote a to the following:

“For 100GBASE-KR1, 200GBASE-KR2, or 400GBASE-KR4 PMD with a PMA in the same package as the PCS sublayer or for any 800GBASE-KR8 PMD.”

Resolve with comment #50.

---

**Comment Type**: E
**Comment Status**: D
**(bucket1)**

This text is an informative NOTE in the standard in force, as below. While I can see the reason to make it normative for the transmitter, for the receiver this information about transmittner behaviour is explanation, not something the receiver does.

**Suggested Remedy**

Change it from a normative table footnote to an informative table note. Similarly for 163.9.3.

**Proposed Response**

PROPOSED ACCEPT.
Proposed Response  

The block diagrams for 100GBASE-VR1 and 100GBASE-SR1 are equivalent to Figure 167-2, but for one lane per direction. The block diagrams for 200GBASE-VR2 and 200GBASE-SR2 are equivalent to Figure 167-2, but for two lanes per direction. The block diagrams for 800GBASE-VR8 and 800GBASE-SR8 are equivalent to Figure 167-2, but for eight lanes per direction.

or

The block diagrams for 100GBASE-VR1 and 100GBASE-SR1, for 200GBASE-VR2 and 200GBASE-SR2, and for 800GBASE-VR8 and 800GBASE-SR8 are equivalent to Figure 167-2, but for one, two and eight lanes per direction respectively.

PROPOSED ACCEPT IN PRINCIPLE.

Change editing instruction to "Replace the first paragraph in 167.5.1 with the following:"

"The PMD block diagram for 400GBASE-VR4 or 400GBASE-SR4 is shown in Figure 167-2. The block diagrams for 100GBASE-VR1 and 100GBASE-SR1 are equivalent to Figure 167-2, but for one lane per direction. The block diagrams for 200GBASE-VR2 and 200GBASE-SR2 are equivalent to Figure 167-2, but for two lanes per direction. The block diagrams for 800GBASE-VR8 and 800GBASE-SR8 are equivalent to Figure 167-2, but for eight lanes per direction."

Proposed Response  

PROPOSED ACCEPT IN PRINCIPLE.

In Table 167-10, Test patterns, need a new reference for scrambled idle. See another comment.

Suggested Remedy

Change "82.2.11 and 91, or 119.2.4.9" to "82.2.11 and 91, or 119.2.4.9, or 172.2.4.9"

Proposed Response  

PROPOSED ACCEPT IN PRINCIPLE.

Implement suggested remedy with editorial license.
<table>
<thead>
<tr>
<th>CI</th>
<th>167</th>
<th>SC 167.10.3</th>
<th>P 122</th>
<th>L 49</th>
<th>#</th>
<th>148</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dawe, Piers</td>
<td>Nvidia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment Type**: TR  
**Comment Status**: D  
**Suggested Remedy**:  
This says "While there has not been an adopted baseline for a 16-lane MDI the language in 167.10.3.4 (below) from 400GBASE-SR8 is a good starting point". This material was explicitly EXCLUDED from the baseline murty_3df_01a_220315.pdf "MDI and lane assignments for eight lane MMF links will be taken up in subsequent meetings." It's not as simple as just copy 400GBASE-SR8 because the industry has chosen angled connectors for 8x100G MMF.  

**Proposed Response**:  
Add the 2-row x12 angled connector. If appropriate, add the x16 angled connector. If appropriate, delete the one or both "flat" (non-angled) connectors. The text might be like this (references need checking):  
The MDI adapter or receptacle shall meet the dimensional specifications for either interface 7-2-3: MPO adapter interface - opposed keyway configuration or interface 7-2-9: MPO active device receptacle, angled interface, as defined in IEC 61754-7-2. The plug terminating the optical fiber cabling shall meet the dimensional specifications of interface 7-2-1: MPO female plug connector, down-angled interface for 2 to 24 fibres, as defined in IEC 61754-7-1. The MDI connection shall meet the interface performance specifications of IEC 63267-1 for performance grade Bm/1m.2  
IEC 63267-1 with performance grade 1m specification is available as a Pre-Release Version (PRV) Final Draft International Standard (FDIS); final published version of this specification is expected to be available in 2023.  

**Response Status**: W  
**Proposed Accept in Principle.**  
Members of the task force have indicated that both 16 and 24 fiber connectors are being used and the 16 fiber connectors are angled and the 24 fiber connectors are flat. The editor's note states that this addition connection information was added by the editorial team for completeness.  
Replace the existing text in 167.10.3.4 with  
"The MDI shall optically mate with the compatible plug on the optical fiber cabling. 800GBASE-VR8 and 800GBASE-SR8 have two optical lane assignment options (see 167.10.3.1a). For option A, the MDI adapter or receptacle shall meet the dimensional specifications for interface 7-2-3: MPO adapter interface - opposed keyway configuration or interface 7-2-9: MPO active device receptacle, angled interface, as defined in IEC 61754-7-2. The plug terminating the optical fiber cabling shall meet the dimensional specifications of interface 7-2-2: MPO female plug connector, flat interface for 16 to 24 fibres, as defined in IEC 61754-7-2. The MPO female plug connector and MDI are structurally similar to those depicted in Figure 167-9, but with two rows of fibers. The MDI connection shall meet the interface performance specifications of IEC 61753-1 and IEC 61753-022-2 for performance grade Bm/2m. For option B, the MDI adapter or receptacle shall meet the dimensional specifications for interface 7-4-7: MPO adapter interface – Opposed keyway configuration or interface 7-4-9: MPO active device receptacle, angled interface for 16 fibers, as defined in IEC 61754-7-4. The plug terminating the optical fiber cabling shall meet the dimensional specifications of interface 7-4-1: MPO female plug, down-angled interface for 16 fibers. The MPO female plug connector and MDI are structurally similar to those depicted in Figure 167-9, but with 16 fibers, an offset keyway, and with different pin diameter and locations. The MDI connection shall meet the interface performance specifications of IEC 63267-1 for performance grade Bm/1m."  

<table>
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<tr>
<th>CI</th>
<th>169</th>
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<th>P 130</th>
<th>L 33</th>
<th>#</th>
<th>147</th>
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<tbody>
<tr>
<td>Dawe, Piers</td>
<td>Nvidia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment Type**: E  
**Comment Status**: D  
**Suggested Remedy**: Wow, this is too mean with the information. Compare 116.2.4: the equivalent of this is missing: "The 200GBASE-R and 400GBASE-R PMAs perform the mapping of transmit and receive data streams between the PCS and PMA via the PMA service interface, and the mapping and multiplexing of transmit and receive data streams between the PMA and PMD via the PMD service interface. In addition, the PMA performs retiming of the received data stream when appropriate, optionally provides data loopback at the PMA or PMD service interface, and optionally provides test pattern generation and checking."  

**Proposed Response**: PROPOSED REJECT.  
The description provided in Clause 116 was overly verbose with repeated details that are listed in the reference PMA clause. The PMA description in Clause 169 provides the general function of a PMA with similar detail provided in the other sublayer descriptions and references the relevant PMA subclauses where the reader may find all of the details relevant to each PMA type.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Page</th>
<th>Line</th>
<th>Proposed Response</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Page</th>
<th>Line</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>148</td>
<td>169</td>
<td>E</td>
<td>D</td>
<td>130</td>
<td>50</td>
<td>Is a &quot;linked device&quot; defined or explained anywhere? The definition and use of &quot;link&quot; is a delicate area.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Delete &quot;linked&quot;. In the next line, change &quot;the link&quot; to &quot;a link&quot;.</td>
</tr>
<tr>
<td>149</td>
<td>170</td>
<td>T</td>
<td>D</td>
<td>132</td>
<td>21</td>
<td>In Figure 116-2, multiple lanes are shown explicitly: PMA:IS_UNITDATA_0.request PMA:IS_UNITDATA_1.request ... PMA:IS_UNITDATA_7.request</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>As a compromise, follow e.g., Figure 120G-2; add the short diagonal lines &quot;n&quot; to show n lanes, not n requests on one lane with a constant ordering. Several figures, including Fig 172-2 where showing the numbers, 16 and 32, will be helpful.</td>
</tr>
</tbody>
</table>
IEEE P802.3df D1.0 1st Task Force review comments

Cl 171 SC 171.4 P 152 L 18 # 153
Dawe, Piers Nvidia
Comment Type E Comment Status D
activate_t
threshold

SuggestedRemedy
Make these tables full width, make the right hand columns wider, also in Clause 172. It may be necessary to set break points in these long "words". In maintenance we might change to shorter names, e.g. FEC_degraded_SER_thresh_on

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Improve appearance of the variable names with editorial license.

Cl 171 SC 171.4 P 153 L 11 # 154
Dawe, Piers Nvidia
Comment Type T Comment Status D
(bucket1)
Under "MDIO status variable" there is an entry "Lane 0 to 31 aligned" but this isn't a variable that indicates if lanes 0 to 31 are aligned. Table 45-350 has "Name"s Lane 0 aligned, Lane 1 aligned, and so on. Is there such a thing as an "MDIO variable" anyway? Clauses such as PCS have variables, MDIO has registers. The way of talking about such multilane things was solved long ago; e.g. "84.7.5 PMD lane-by-lane signal detect function"

SuggestedRemedy
Because a "variable" must be talking about one lane not the pair of registers recording 16 or 32 lanes, change "Lane 0 to 31 aligned" back to how it is in 117: "Lane x aligned" or "Lane i aligned" or better, "Lane aligned"."Lane-by-lane aligned" seems odd, but "DTE XS FEC symbol errors lane 0 to lane 31" below can be "DTE XS FEC symbol errors by lane" Similarly in several tables, also in other clauses such as 172, PCS.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change "Lane 0 to 31 aligned" to "Lane aligned, lane 0 to 31" Change "Lane 0 to 31 mapping" to "Lane mapping, lane 0 to 31"

Cl 172 SC 172.1.1 P 160 L 11 # 155
Dawe, Piers Nvidia
Comment Type T Comment Status D
(bucket1)
The paragraph of introduction in 119.1.1 is missing: "Both 200GBASE-R and 400GBASE-R are based on a 64B/66B code. The 64B/66B code supports transmission of data and control characters. The 64B/66B code is then transcoded to 256B/257B encoding to reduce the overhead and make room for forward error correction (FEC). The 256B/257B encoded data is then FEC encoded before being transmitted. Data distribution is introduced to support multiple lanes in the Physical Layer. Part of the distribution includes the periodic insertion of an alignment marker, which allows the receive PCS to align data from multiple lanes."

SuggestedRemedy
At least refer to 172.1.3 as an introduction.

Proposed Response Response Status W
PROPOSED REJECT.
172.1.1 is the scope and the current text is a sufficient description of the scope of the clause. All of the information noted in the comment is provided in 172.1.3 and there is no need to duplicate it in the scope.

Cl 172 SC 172.1.5 P 162 L 12 # 157
Dawe, Piers Nvidia
Comment Type E Comment Status D
(bucket1)
"66B Block distribution": bits not bytes, rogue capital, style

SuggestedRemedy
66-bit block distribution also 66-bit block collection

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Replace 66B by 66-bit in Fig 172-2 in two places.
Cl 172  SC 172.1.5  P 162  L 12  # 158
Dawe, Piers  Nvidia
Comment Type E  Comment Status D
Transcode
SuggestedRemedy
transcode - 4 times  Also in this figure: Encode, Decode, Interleave, Lane
Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Correct the capitalization with editorial license.

Cl 173  SC 173.3  P 179  L 19  # 161
Dawe, Piers  Nvidia
Comment Type E  Comment Status D
"defined in 169.3" but 173.2 says "defined in 169.3.1"
SuggestedRemedy
Reconcile
Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change from "169.3" to "169.3.1"

Cl 172  SC 172.1.5  P 162  L 23  # 159
Dawe, Piers  Nvidia
Comment Type T  Comment Status D
AM sync
The baseline (shrikhande_3df_01a_221004, see slide 10) shows that the two flows' alignment insertion are connected. 172.2.1 ignores this too, although 172.2.4.4 says what to do, but it should be made obvious in the figure that a linkage is needed.
SuggestedRemedy
Show "Alignment insertion" across both flows as in shrikhande_3df_01a_221004, or make the point some other way such as "Synchronization" (used in the ETC 800G spec) or "alignment".
Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #90.

Cl 173  SC 173.3  P 179  L 17  # 160
Dawe, Piers  Nvidia
Comment Type E  Comment Status D
another PMA or PMD
SuggestedRemedy
a PMD or another PMA
Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change from: "another PMA or PMD" to "another PMA or a PMD"

Cl 173  SC 173.4  P 180  L 20  # 162
Dawe, Piers  Nvidia
Comment Type T  Comment Status D
PMA SI
The interface below the PMA (8 lanes) connects with either a PMD or a physically instantiated interface (800GAUI-8).
SuggestedRemedy
The interface below the PMA (8 lanes) either connects with a PMD or it is a physically instantiated interface (800GAUI-8) connecting to another 800GAUI-8 PMA interface in another PMA. Similarly twice more.
Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #196.

Cl 173  SC 173.4  P 180  L 1  # 163
Dawe, Piers  Nvidia
Comment Type E  Comment Status D
Something strange about the page layout; these sections start to the left of the header
SuggestedRemedy
Reconcile
Proposed Response  Response Status W
PROPOSED ACCEPT.
Comment ID 164

**Comment:** E  
**Comment Status:** D  
**Proposed Response:**  

32:8 PMA Functional Block Diagram  
In the titles for Figure 173-3, 173-4 and 173-5, change from:  
"Functional Block Diagram"  
to  
"functional block diagram"  

**Proposed Response:**  
PROPOSED ACCEPT IN PRINCIPLE.

**Suggested Remedy:**  
32:8 PMA functional block diagram - 3 figures  

---

Comment ID 165

**Comment:** E  
**Comment Status:** D  
**Proposed Response:**  

PROPOSED ACCEPT IN PRINCIPLE.  
In the titles for Figure 173-3, 173-4 and 173-5, change from:  
"Functional Block Diagram"  
to  
"functional block diagram"  

**Proposed Response:**  
PROPOSED ACCEPT IN PRINCIPLE.

**Suggested Remedy:**  
32:8 PMA functional block diagram - 3 figures  

---

Comment ID 166

**Comment:** TR  
**Comment Status:** D  
**Proposed Response:**  

PROPOSED REJECT.  
The constrained PCS multiplexing specified in Clause 173 is consistent with slides 17 and 18 in the adopted PCS/PMA baseline  

There is no evidence that clock content is worse than for four-lane 400GBASE-R PMDs lanes. We are not aware of any harmful issues with four-lane 400GBASE-R PMDs due to clock content.  

Although some analysis has shown the possibility of reduced clock content, no evidence has been provided to justify further constraints.  

---

Dawe, Piers  
Nvidia  

**Proposed Response:**  
PROPOSED ACCEPT IN PRINCIPLE.  
Replace the text in 173.4.1 with the following splitting the text into two paragraphs:  
"If the interface between the PMA client and the PMA is physically instantiated as 800GAUI-8, the PMA shall meet the electrical and timing specifications as specified in Annex 120F or Annex 120G as appropriate at the PMA service interface.  
If the interface between the sublayer below the PMA and the PMA is physically instantiated as 800GAUI-8, the PMA shall meet the electrical and timing specifications as specified in Annex 120F or Annex 120G as appropriate at the service interface below the PMA.”  
[Editor's note: page was changed from 180 to 183.]
IEEE P802.3df D1.0 1st Task Force review comments

**Comment ID** 167

**Comment Type** TR

**Comment Status** D

PCSL interleaving (CC)

This is a PMA. On the receive side, it doesn't know and can't control the PCSLs of the signals it carries.

**SuggestedRemedy**

Replace this with a practical criterion to ensure that the reduced transition density doesn't happen, if any is needed, e.g. that each of the 8 outputs is derived from four contiguous lanes in the set of 32 incoming PMA lanes. There is negligible benefit in the 4-FEC multiplexing on the receive side because there are only PMAs that can make more errors after this, and their maximum error ratios are far lower than the PMD's.

**Proposed Response**  PROPOSED REJECT.

The issue described in the comment is not correct.

Subclause 173.4.2.2 is specifically referring to the 8:32 PMA, which is always co-located with a PHY 800GXS below it (see 173.1.4). In the receive direction, this PMA receives 32 parallel bit streams from the PHY 800GXS. Each one of the 32 bit streams is a specific and known PCSL. The PMA is therefore able to identify the specific PCSLs it is receiving from the PHY 800GXS (from the "PHY_XS:IS_UNITDATA_0:31.indication" service interface primitive) and arrange them appropriately.

This receive direction of the 8:32 PMA is functionally identical to the transmit direction of the 32:8 PMA, where the 32:8 PMA receives 32 parallel bit streams from the 800GBASE-R PCS above it.

The constrained PCSL multiplexing can thus be performed in accordance with slides 17 and 18 in the adopted PCS/PMA baseline (https://www.ieee802.org/3/df/public/22_10/22_1004/shrikhande_3df_01a_221004.pdf).

The clock content mentioned in the suggested remedy are addressed in comments #166, 169, 126, and 127.

**Proposed Response**  PROPOSED REJECT.

The text is consistent with subclauses 120.5.3.5 and 83.5.3.6 in the base standard and is accurate as written. The proposed changes do not improve the accuracy or clarity of the text.

**Proposed Response**  PROPOSED REJECT.

Resolve using the response to comment #166.

**Comment ID** 170

**Comment Type** E

**Comment Status** D

(group of PMAs) puzzled me. PMAs are not used in parallel.

**SuggestedRemedy**

Change group to series, or sequence

**Proposed Response**  PROPOSED REJECT.

As I think 120 doesn't address precoding.

**Proposed Response**  PROPOSED ACCEPT IN PRINCIPLE.

The base standard is ambiguous about whether precoding should be applied to the PAM4 patterns specified in 120.5.11.2. All patterns other than PRBS31Q are used only in transmitter tests and thus should be used without precoding enabled. The PRBS31Q pattern, which is specified for receiver stress testing, may be used with or without precoding based on AUI or PMD type and the receiver preference.

An editorial presentation will be provided showing the proposed changes.

**Proposed Response**  PROPOSED ACCEPT IN PRINCIPLE.

The base standard is ambiguous about whether precoding should be applied to the PAM4 patterns specified in 120.5.11.2. All patterns other than PRBS31Q are used only in transmitter tests and thus should be used without precoding enabled. The PRBS31Q pattern, which is specified for receiver stress testing, may be used with or without precoding based on AUI or PMD type and the receiver preference.

An editorial presentation will be provided showing the proposed changes.

**Proposed Response**  PROPOSED ACCEPT IN PRINCIPLE.

The base standard is ambiguous about whether precoding should be applied to the PAM4 patterns specified in 120.5.11.2. All patterns other than PRBS31Q are used only in transmitter tests and thus should be used without precoding enabled. The PRBS31Q pattern, which is specified for receiver stress testing, may be used with or without precoding based on AUI or PMD type and the receiver preference.

An editorial presentation will be provided showing the proposed changes.

**Proposed Response**  PROPOSED ACCEPT IN PRINCIPLE.

The base standard is ambiguous about whether precoding should be applied to the PAM4 patterns specified in 120.5.11.2. All patterns other than PRBS31Q are used only in transmitter tests and thus should be used without precoding enabled. The PRBS31Q pattern, which is specified for receiver stress testing, may be used with or without precoding based on AUI or PMD type and the receiver preference.

An editorial presentation will be provided showing the proposed changes.
IEEE P802.3df D1.0 1st Task Force review comments

---

**Comment Type** T  **Comment Status** D  (bucket1)

"Mapping of MDIO control variables to PMA control variables is shown in Table 173–2. Mapping of MDIO status variables to PMA status variables is shown in Table 173–3." But status and control go in opposite directions.

**Suggested Remedy**

Mapping of PMA status variables to MDIO status variables is shown in Table 173–3. Similarly in next sentence.

**Proposed Response**

PROPOSED REJECT.

The wording is consistent with similar subclauses in multiple clauses in the base standard and is accurate as written. The proposed changes do not improve the accuracy or clarity of the text.

---

**Comment Type** E  **Comment Status** D  (bucket1)

PRBS Tx pattern testing

**Suggested Remedy**

PRBS Tx pattern testing error counter

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Change "PRBS Tx pattern testing" to "PRBS Tx pattern testing error counter, lane 0 to lane 7".

---

**Comment Type** T  **Comment Status** D  (bucket1)

This project is lengthening this title but a five-line title is too long. If we had 16 x 100G AUIs it would be even worse.

**Suggested Remedy**

Name it the way we name PMD clauses: Chip-to-chip 100 Gb/s/lane Attachment Unit Interfaces type 100GAUI-1 C2C, 200GAUI-2 C2C, 400GAUI-4 C2C, and 800GAUI-8 C2C

Similarly for 120G

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

The titles are indeed long and can be shortened and clarified.

The suggested remedy introduces the word "Type", which has been used for PHY but not for AUIs. Therefore a slight modification is proposed.

The same form used for PMD clause titles can be used.

Change the title of Annex 120F to:

"Chip-to-chip Attachment Unit Interfaces 100GAUI-1 C2C, 200GAUI-2 C2C, 400GAUI-4 C2C, and 800GAUI-8 C2C"

Change the title of Annex 120G to

"Chip-to-module Attachment Unit Interfaces 100GAUI-1 C2M, 200GAUI-2 C2M, 400GAUI-4 C2M, and 800GAUI-8 C2M"

Change the titles of 120F.5, 120F.5.4, 120G.6, 120G.6.4, the text in 120F.5.1 and 120G.6.1, and the tables in 120F.5.2.1 and 120G.6.2.1, accordingly.

Change any text affected by these title changes with editorial license.
<table>
<thead>
<tr>
<th>Ci</th>
<th>120F</th>
<th>SC 120F.1</th>
<th>P 199</th>
<th>L 9</th>
<th># 175</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comment Type E</td>
<td>Comment Status D</td>
<td>120.5.7.2 doesn't address precoding in C2C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggested Remedy</td>
<td></td>
<td>Delete the reference here or change 120.5.7.2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Proposed Response</td>
<td>Response Status W</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>It appears that 120.5.7.2 was not updated to include support for 100GBASE-1, 200GAUI-2, and 400GAUI-4. The subclause needs to be updated to support optional precoding on all inputs and outputs including control registers. An editorial presentation will be provided showing the proposed changes.</td>
<td></td>
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<th>SC 120G.1</th>
<th>P 204</th>
<th>L 44</th>
<th># 176</th>
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<td>Each 100GAUI-1, 200GAUI-2, 400GAUI-4 C2M, <em>and</em> 800GAUI-8 C2M data path contains one, two, four, <em>or</em> eight differential lanes</td>
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<tr>
<td>Suggested Remedy</td>
<td></td>
<td>Change and to or</td>
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<tr>
<td>Proposed Response</td>
<td>Response Status W</td>
<td>PROPOSED ACCEPT.</td>
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<th>P 207</th>
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<td>As dealing with larger numbers of lanes in compliance boards is an engineering issue... And by the way, it might have been helpful to show that these are differential.</td>
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<tr>
<td>Suggested Remedy</td>
<td></td>
<td>It would help to add the short diagonal lines showing n lanes. Also Figure 120G-4</td>
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<tr>
<td>Proposed Response</td>
<td>Response Status W</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. The test points are separate for each lane. However, the clarity of the figure may be improved. Add the label &quot;(one per lane)&quot; below TP1a and TP4a in Figure 120G-3, and below TP1 and TP4 in Figure 120G-4. In the second and third paragraphs of 120G.2, change &quot;the location of compliance points&quot; to &quot;the location of compliance points for each lane&quot;.</td>
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</table>
IEEE P802.3df D1.0 1st Task Force review comments

172.2.4.1) by combining the 66-bit blocks from the two flows in a round robin fashion to form a single stream of 66-bit blocks."
To: "The block collection reverses the block distribution done in the transmitter (see 172.2.4.1) by combining the 66-bit blocks from the two flows in an alternating fashion to form a single stream of 66-bit blocks."

172.2.1 on page 163 line 19...
Change: "The 66-bit blocks are then distributed in a round-robin fashion into two parallel transmit functions, referred to as flow 0 and flow 1."
To: "The 66-bit blocks are then distributed between two parallel transmit functions, referred to as flow 0 and flow 1."

In 172.2.1 on page 163, line 42
Change: "A 66-bit block collection function merges the 66-bit blocks from the two flows in a round-robin fashion into a single stream of blocks that are then 64B/66B decoded."
To: "A 66-bit block collection function merges the 66-bit blocks from the two flows into a single stream of blocks that are then 64B/66B decoded."

In 172.2.4.1 on page 164, line 23...
Change: "The 66-bit blocks are distributed to the two flows in a round robin fashion by the block distribution function such that the first 66-bit block is sent to flow 0, the second 66-bit block is sent to flow 1, the third 66-bit block is sent to flow 0, and subsequent 66-bit blocks continue the round robin distribution procedure across the two flows."
To: "The 66-bit blocks are distributed to the two flows in an alternating fashion by the block distribution function such that the first 66-bit block is sent to flow 0, the second 66-bit block is sent to flow 1, the third 66-bit block is sent to flow 0, and subsequent 66-bit blocks continue the distribution procedure across the two flows."

In 172.2.5.8 on page 168, line 21
Change: "The block collection reverses the block distribution done in the transmitter (see
### IEEE P802.3df D1.0 1st Task Force review comments

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<td>172.2.2</td>
<td>163</td>
<td>46</td>
<td>182</td>
<td>E</td>
<td>D</td>
<td>Proposed Accept in Principle</td>
<td>W</td>
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<td>Use of blocks - ambiguous: there are 257-bit blocks as well as FEC blocks, even if we call those &quot;codewords&quot;. This title dates from 49.2.3 Use of blocks, before 257-bit blocks and FEC.</td>
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<td>Implement the suggested remedy with editorial license</td>
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</table>

#### Proposed Remedy

- Change "blocks" to "66-bit blocks" here and at line 49.

#### Suggested Remedy

- Delete them, or define what they mean, or change to some notation that is defined.

#### Proposed Response

- The curly brackets must be trying to tell the reader something, but I don't know what.

#### Suggested Remedy

- The curly brackets in Tables 172-1 and 172-2 are consistent with what was used in Table 119-2 in Clause 119. Given that we are striving for consistency between this new and previous PCS specifications, retaining a common format is helpful for comparison.

#### Proposed Response

- The format used in Table 172-1 and Table 172-2 is consistent with the format used in Table 119-2 in Clause 119. Given that we are striving for consistency between this new and previous PCS specifications, retaining a common format is helpful for comparison.

#### Suggested Remedy

- Careful, "function" has a precise meaning in PCS clauses. This can be more specific and informative.

#### Proposed Response

- The comment does not provide sufficient justification to make the suggested change nor do the proposed changes improve the accuracy or clarity of the draft.

#### Comment ID 185

- Page 42 of 45
- 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  Z/withdrawn
- SORT ORDER: Comment ID
- 2022-11-29 3:47:25 PM
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Cl  172  SC  172.2.4.9  P  167  L 25  # 186
Dawe, Piers  Nvidia

Comment Type  E  Comment Status  D  test pattern (CC)
"Test-pattern generators are identical to that specified in 119.2.4.9" there is only one test pattern, and although it is generated in an analogous way to 119.2.4.9, it's a different PCS and different bits in the pattern.

SuggestedRemedy
Change to "A scrambled idle test pattern can be generated in the same way in the same way as in 119.2.4.9."

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.

Cl  172  SC  172.2.5.3  P  168  L 1  # 187
Dawe, Piers  Nvidia

Comment Type  E  Comment Status  D  (bucket1)
The relation between hi_ser_0, hi_ser_1 and hi_ser appears later within a state machine variable definition, which is too obscure. More generally, I could not find where the purpose of hi_ser is introduced.

SuggestedRemedy
Add something in regular text (possibly elsewhere) that says that what hi_ser for, and that it is the OR of hi_ser_0 and hi_ser_1.

Proposed Response  Response Status  W
PROPOSED REJECT.
172.2.5.3 notes the exception that each flow has a unique hi_ser generated by its FEC decoder (hi_ser_0 and hi_ser_1). The purpose of hi_ser is defined in 119.2.5.3.

Cl  172  SC  172.2.5.8  P  168  L 33  # 188
Dawe, Piers  Nvidia

Comment Type  E  Comment Status  D  (bucket1)
This says "See 119.2.3.5 and 119.2.3.8 for the deletion and insertion rules" but those subclauses are titled "119.2.3.5 Idle (/I/)" and "119.2.3.8 Ordered set (/O/)" and the content isn't there so the reader doesn't know to look there, or follow the links from there to 83 to find the deletion and insertion rules.

SuggestedRemedy
Improve the titles of those subclauses: "Idle (/I/) and idle insertion and deletion" and "Ordered set (/O/) and ordered set deletion"

Proposed Response  Response Status  W
PROPOSED REJECT.
119.2.3.5 and 119.2.3.8 have links to 82.2.3.6 and 82.2.3.9 respectively, which the reader can follow to access the rules for insertion/deletion. Note that this double-reference is common throughout many subclauses in Clause 172. The proposed changes do not improve the accuracy of the draft.

Cl  172  SC  172.3.5  P  173  L 31  # 189
Dawe, Piers  Nvidia

Comment Type  TR  Comment Status  D  fec counters
I could not find FEC_cw_counter in the base document (802.3-2022 Section B) or the PCS baseline shrikhande_3df_01a_221004, and in 802.3ck it's for RS-FEC-Int (for 100GBASE-P PHY's 100GBASE-KR1 and 100GBASE-CR1) only. It's not applicable to any 200G or 400G, which is what the 800G PCS is based on. The same applies to 172.3.6 FEC_codeword_error_bin_i, I think.

SuggestedRemedy
Have we had the discussion as to whether we want to copy these features from a feature of a one-speed specialist PCS into a regular PCS feature that applies to any 800GBASE-R PHY?

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
FEC bin counter was implemented in Draft 1.0 although it is not in Clause 119 and was not called out in the adopted baseline. Therefore we need to decide whether to keep it and whether it is optional or mandatory.
For task force discussion.
Comment Type: T
Comment Status: D

"A 8:8 PMA is required to support an physical instantiation of the PMA service interface": doesn't make sense, as the PMA service interface is part of the PMA. an vs. a.

Suggested Remedy:

is used to implement a ...

Proposed Response: W
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
Change from:
"An 8:8 PMA is required to support an physical instantiation of the PMA service interface (800GAUI-8)"
to
"An 8:8 PMA is required for a physical instantiation of the PMA service interface (800GAUI-8)"

Comment Type: T
Comment Status: D

"The PMA receives": confusing and incomplete.

Suggested Remedy:

In the transmit direction, the PMA receives 32 parallel bit streams, each at the nominal signaling rate of the PCSL. In the receive direction, it delivers 32 parallel bit streams to its client. Similarly in the next paragraph for an 8-lane interface.

Proposed Response: W
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
Change from
"The PMA receives 32 parallel bit streams, each at the nominal signaling rate of the PCSL."
to
"The PMA receives 32 parallel bit streams from either the 800GBASE-R PCS or the DTE 800GXS, each at the nominal signaling rate of the PCSL."
In the receive direction, the PMA sends 32 parallel bit streams to the PMA client, each at the nominal signaling rate of the PCSL."
Change from
"The PMA receives PAM4 symbols on each of its input lanes at two times the PCSL rate, each symbol formed from two bits."
to
"In the transmit direction, the PMA receives 8 parallel PAM4 symbol streams from the PMA client, each at a nominal signaling rate of 53.125 Gbd. In the receive direction, the PMA sends 8 parallel PAM4 symbol streams to the PMA client, each at a nominal signaling rate of 53.125 Gbd."

Comment Type: E
Comment Status: D

Table 167-7. The order of the PMDs in the 'Signaling rate' row is different from what was done in Clause 124.

Suggested Remedy:

Proposing to reorder the data in this row to put the lower speed and lower lane count PMDs first, i.e.
"Other PMDs"
"800GBASE-VR8, 800GBASE-SR8 PMDs"

Proposed Response: W
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
Change the order and associated parameters as proposed.

Comment Type: E
Comment Status: D

Table 167-8. The order of the PMDs in the 'Signaling rate' row is different from what was done in Clause 124.

Suggested Remedy:

Proposing to reorder the data in this row to put the lower speed and lower lane count PMDs first, i.e.
"Other PMDs"
"800GBASE-VR8, 800GBASE-SR8 PMDs"

Proposed Response: W
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
Change the order and associated parameters as proposed.
**IEEE P802.3df D1.0 1st Task Force review comments**

**Comment 167 SC 167.8.6 P 118 L 6**

Nicholl, Gary  
Cisco Systems

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

Table 167-12. The font for the text in the "PMD Type" column looks incorrect. Also the editing instruction is "change this table", but then no underline or strikethrough. Perhaps the editing instruction should have been "Replace Table 167-12 with the following:"?

**Suggested Remedy**

Change the font in the "PMD Type" column to use the standard table font and update the editing instruction to "Replace Table 167-12 with the following:".

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

PROPOSED ACCEPT IN PRINCIPLE.

**Comment 171 SC 171.2 P 150 L 4**

Nicholl, Gary  
Cisco Systems

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

800GXS should be 400GXS

**Suggested Remedy**

Change "PCS and 800GXS sublayers specified in 118.2" to "PCS and 400GXS sublayers specified in 118.2"

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

PROPOSED ACCEPT.

**Comment 173 SC 173.4 P 182 L 38**

Nicholl, Gary  
Cisco Systems

**Comment Type** T  **Comment Status** D  **PMA SI**

Figure 173-4 (8:32 PMA) there should be no PMA:IS_SIGNAL.indication towards the PMA (AUI is not able to transfer an out of band status signal) and possibly no "SIL" block in the block diagram.

The same comment applies to the 8:8 PMA in Figure 173-5.

**Suggested Remedy**

Remove the PMA:IS_SIGNAL.indication signal and the "SIL" block from Figure 173-4 and Figure 173-5.

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

PROPOSED ACCEPT IN PRINCIPLE.

The editors noted this error during the implementation of D1.0, but discovered it too late to address it properly.

A presentation will be provided for task force discussion.

**Comment 173 SC 173.4 P 181 L 40**

Nicholl, Gary  
Cisco Systems

**Comment Type** E  **Comment Status** D  **PMA SI**

Figure 173-3/4/5. Need to make it clear if the sublayer above or below is another PMA, that the interface is connected over a physically instantiated AUI (800GAUI-8)

**Suggested Remedy**

Update Figure 173-3/4/5 to make it clear if the sublayer above or below is another PMA, that the interface is connected over a physically instantiated AUI (800GAUI-8)

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

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #196.