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<td>The WG ballot group is now known.</td>
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<td>The expansion for PMA is physical medium attachment per 802.3-2022 1.5.</td>
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<td>Change: Physical Media Attachment (PMA) To: Physical Medium Attachment (PMA)</td>
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<td></td>
<td>The description of db doesn't match D3.2 of P802.3db. PHY is not the correct abbreviation as it means &quot;Physical Layer device&quot;. Also, two oxford commas are missing.</td>
</tr>
<tr>
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<td>SuggestedRemedy</td>
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<td></td>
<td>Change: Physical Layer (PHY) specifications and management parameters for 100, 200 and 400 Gb/s over one, two and four pairs of multimode fiber based on 100 Gb/s optical signaling. To: Physical Layer specifications and management parameters for 100, 200, and 400 Gb/s over one, two, and four pairs of multimode fiber based on 100 Gb/s optical signaling.</td>
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### Proposed Responses

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<td>P0</td>
<td>L0</td>
<td>#</td>
</tr>
</tbody>
</table>

**Wienckowski, Natalie**
General Motors

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

The description of cx doesn’t match D3.0 of P802.3cx.

**Suggested Remedy**
- Change: transmit and receive path delays
- To: transmit and receive path data delays

**Proposed Response**  **Response Status** W
- PROPOSED ACCEPT.

---

<table>
<thead>
<tr>
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<td>P0</td>
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</table>

**Carlson, Steve**
HSD, Bosch, Ethernovia

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

Editor’s note is woefully out of date. Example projects are a decade old: (e.g., IEEE P802.3bj and IEEE P802.3bk)

**Suggested Remedy**
- Change to (e.g., IEEE P802.3cx and IEEE P802.3cz)

**Proposed Response**  **Response Status** W
- PROPOSED ACCEPT.

---

<table>
<thead>
<tr>
<th>CI</th>
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<td>P21</td>
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</table>

**Grow, Robert**
RMG Consulting

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

An Ethernet network is not full duplex, though it may include full duplex links. Similarly, an Ethernet network may include multiple data rates in the collective set of its physical layer links. This error is similar to some of the PHY Type definitions that exist in approved P802.3/D3.2, but should not be replicated. 1.4.14 1000BASE-T1 does not include a description of the "network"; but 1.4.82 10GBASE-T1 seems to be the model for this definition (thus replicating an error).

**Suggested Remedy**
- IEEE 802.3 Physical Layer specification for a 25 Gb/s Ethernet link using a single twisted-pair copper cable.

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

**Proposed Response**  **Response Status**
- Change
- IEEE 802.3 Physical Layer specification for a 25 Gb/s Ethernet link using a single twisted-pair copper cable.
- To
- IEEE 802.3 Physical Layer specification for a 25 Gb/s Ethernet link using a single balanced pair of conductors.
- Recent automotive and industrial Ethernet projects have deprecated "twisted-pair copper cable." See comment #475.
<table>
<thead>
<tr>
<th>Cl</th>
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<th>Type</th>
<th>Comment</th>
<th>Status</th>
<th>Proposed Response</th>
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<tbody>
<tr>
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<td>1.4.407</td>
<td>21</td>
<td>11</td>
<td>E</td>
<td>Brown, Matt</td>
<td>Huawei</td>
<td>Editorial instruction is superfluous as changes are evident by the change marking.</td>
<td>PROPOSED ACCEPT.</td>
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<tr>
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<td>1.4.473</td>
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<td>16</td>
<td>E</td>
<td>Marris, Arthur</td>
<td>Cadence Design Systems</td>
<td>No editing instruction for 1.4.473</td>
<td>PROPOSED ACCEPT.</td>
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<td>15</td>
<td>15</td>
<td>ER</td>
<td>Wienckowski, Natalie</td>
<td>General Motors</td>
<td>No editorial instruction.</td>
<td>PROPOSED ACCEPT.</td>
</tr>
</tbody>
</table>

**Suggested Remedy:**
- Change to “Change 1.4.407 as follows:”
- Add “Change 1.4.473 as follows:”
- Add editorial instruction here and in various other locations in this draft including 105.1.1.

**Comment Status:**
- D/dispatched
- A/accepted
- R/rejected

**Response Status:**
- O/open
- W/written
- C/closed
- U/unsatisfied
- Z/withdrawn

**SORT ORDER:** Clause, Subclause, page, line
### Proposed Responses

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<th>#</th>
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<td>30</td>
<td>30.3.2.1.3</td>
<td>15</td>
<td>21</td>
</tr>
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</table>

Wienckowski, Natalie  General Motors

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

The PHY type needs to be moved right and then there should be space before the description.

**Suggested Remedy**

Add spaces in "25GBASE-T1 Clause 165 25 Gb/s PAM4" to match 802.3-2022 spacing.

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

PROPOSED ACCEPT.

| 401 | 30   | 30.5.1.1.2 | 15 | 35 |

Wienckowski, Natalie  General Motors

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

The PHY type needs to be moved right and then there should be space before the description.

**Suggested Remedy**

Add spaces in "25GBASE-T1 Single balanced pair of conductors PHY as specified in Clause 165" to match 802.3-2022 spacing.

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

PROPOSED ACCEPT.

| 402 | 30   | 30.6.1.1.5 | 15 | 49 |

Wienckowski, Natalie  General Motors

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

The PHY type needs to be moved right and then there should be space before the description.

**Suggested Remedy**

Add spaces in "25GBASE-T1 as specified in Clause 165" to match 802.3-2022 spacing.

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

PROPOSED ACCEPT.

| 334 | 45   | 45.3 | 28 | 1  |

Maguire, Valerie  Copperopolis

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

The PICS subclause for clause 45 is 45.5.

**Suggested Remedy**

Replace, "45.3" with "45.5" and re-number subsequent subclauses in this clause accordingly.

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

PROPOSED ACCEPT.

| 335 | 45   | 45.3 | 28 | 2  |

Maguire, Valerie  Copperopolis

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

Interface is capitalized when appearing after "MDIO" (see clause 45 header).

**Suggested Remedy**

Replace, "Input/Output (MDIO) interface" with "Input/Output (MDIO) Interface" (this may need to be a maintenance request).

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

PROPOSED ACCEPT.

| 374 | 45   | 45.2.1 | 23 | 7  |

Grow, Robert  RMG Consulting

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

I find no changes or inserts in the partial content copied from P802.3/D3.2. (Nor an editor's note explaining why the content is in the draft and that it should be removed prior to publication.)

**Suggested Remedy**

Delete lines 7 through 20.

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

PROPOSED ACCEPT.
**Comment Type**  E  **Comment Status**  D  **EZ**
It is not clear why Table 45-3 and the text that introduces it are included here, since there is no change being made.

**Suggested Remedy**
Remove everything between the heading 45.2.1 and the heading 45.2.1.7

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

**Comment Status**  D  **Response Status**  W
**EZ**

**Comment Type**  ER  **Comment Status**  D  **EZ**
Why is Table 45–3 included if there are no changes?

**Suggested Remedy**
Delete Table 45–3

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

**Comment Status**  D  **Response Status**  W
**EZ**

**Comment Type**  E  **Comment Status**  D  **EZ**
There are no edits to Table 45-3 or 45.2.1, and text of the complete section or complete table are not shown. These should not be in the draft, as they do not match the base standard and also contain no edits.

**Suggested Remedy**
delete 45.2.1 text (but not the section header) and Table 45-3 from the draft.

**Proposed Response**  **Response Status**  W
**PROPOSED ACCEPT.**
<table>
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<td>45</td>
<td>45.2.1.214</td>
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<td>The editorial instruction doesn't reference the new row added.</td>
<td>D</td>
<td>Wienckowski, Natalie</td>
<td>General Motors</td>
<td>Change: Change the identified row in Table 45-178 as follows (unchanged rows not shown): To: Change the identified row in Table 45-178 and insert a new row immediately below the changed row as follows (unchanged rows not shown):</td>
</tr>
<tr>
<td>377</td>
<td>45</td>
<td>45.2.1.214.2</td>
<td>TR</td>
<td>When looking to see if the PICS needed to be updated for the changed bit behavior, I couldn't find a PICS item corresponding to this existing shall.</td>
<td>D</td>
<td>Grow, Robert</td>
<td>RMG Consulting</td>
<td>Delete the shall, or add PICS item for the specified behavior.</td>
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<tr>
<td>577</td>
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<td>Table number doesn't match the editor instruction</td>
<td>D</td>
<td>McClellan, Brett</td>
<td>Marvell</td>
<td>&quot;Table 45–179&quot; to &quot;Table 45–206&quot;. Similar issue for Table 45-207 on page 26</td>
</tr>
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<td>Cadence Design Systems</td>
<td>Table number should be 45-206</td>
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<tr>
<td>653</td>
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<td>45.2.1.245</td>
<td>E</td>
<td>Table number doesn't match the editor instruction</td>
<td>D</td>
<td>McClellan, Brett</td>
<td>Marvell</td>
<td>Change &quot;Table 45–179&quot; to &quot;Table 45–206&quot;. Similar issue for Table 45-207 on page 26</td>
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**Type:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general  
**Sort Order:** Clause, Subclause, page, line  
**Comment Status:** D/dispatched  A/accepted  R/rejected  
**Response Status:** O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
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<th>L</th>
<th>#</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
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<td>E</td>
<td>D</td>
<td>Correct table number per comment.</td>
<td>PROPOSED ACCEPT.</td>
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<td>D</td>
<td>&quot;L=2, L=4, and L=8&quot; (retaining underscore and strikethrough).</td>
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</tr>
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</table>

Grow, Robert
RMG Consulting

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 U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line
There is no editorial instruction nor any indication of changes in the text in 45.2.1.246 and its subclauses.

**Suggested Remedy**
Remove 45.2.1.246 through 45.2.1.246.4 from the draft.

**Proposed Response**
**Response Status** W
**PROPOSED ACCEPT.**
Proposed Responses

**Comment Type**: T  **Comment Status**: D  **Response Status**: W  **PROPOSED ACCEPT.**

**Comment**: Unchanged register definitions don't need to be included in the spec.

**Suggested Remedy**: Remove this Subclause and 45.2.1.246.x as no changes have been made from the base standard.

**Proposed Response**: Remove this Subclause and 45.2.1.246.x as no changes have been made from the base standard.

**Comment**: I see no differences between this subclause and the base 802.3-2022

**Suggested Remedy**: remove all of subclause 45.3 if no changes are made to this subclause

**Proposed Response**: Remove all of subclause 45.3

**Comment**: Clause 45 PICs in the 802.3-2022 base standard is 45.5

**Suggested Remedy**: change 45.3 to 45.5 and associated subclauses

**Proposed Response**: Remove all of subclause 45.3, there are no changes made in P802.3cy

**Comment**: Interface is capitalized when appearing after "MDIO" (see clause 45 header).

**Suggested Remedy**: Replace, "MDIO interface" with "MDIO Interface" (this may need to be a maintenance request)

**Proposed Response**: Remove all of subclause 45.3, there are no changes made in P802.3cy
### Proposed Responses

**IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments**

<table>
<thead>
<tr>
<th>Cl 45 SC 45.3.2.2</th>
<th>P 28 L 36</th>
<th># 606</th>
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<td>McClellan, Brett</td>
<td>Marvell</td>
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</table>

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

IEEE Std 802.3-2022 is the new base document

**SuggestedRemedy**
- change multiple references to IEEE Std 802.3-202x to IEEE Std 802.3-2022

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

---

<table>
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<th>P 30 L 8</th>
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<td>Brown, Matt</td>
<td>Huawei</td>
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**Comment Type** E  **Comment Status** D  EZ

Editorial instruction not correct. Row in table is inserted not changed.

**SuggestedRemedy**
- Change "unchanged rows not shown" to "some rows not shown".
- Same for 78.2.

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

**Comment Type** E  **Response Status** W

Leave the instructions as they are, but underline newly inserted rows.

---

<table>
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<th>P 30 L 22</th>
<th># 608</th>
</tr>
</thead>
<tbody>
<tr>
<td>McClellan, Brett</td>
<td>Marvell</td>
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</tr>
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</table>

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

25GBASE-T1 should appear before 25GBASE-T in Table 78-2, per pattern set in the baseline

**SuggestedRemedy**
- change editor instruction to: Insert a row for 25GBASE-T1 before 25GBASE-T in Table 78–2

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

---

<table>
<thead>
<tr>
<th>Cl 78 SC 78.3</th>
<th>P 30 L 43</th>
<th># 579</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmerman, George</td>
<td>CME Consulting/APL Gp, Cisco, CommScope, Marve</td>
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</table>

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

"The EEE capability for 25GBASE-T1 shall be advertised during link training according to 165.4.2.4.10." has two problems. First, the advertisement not described in 165.4.2.4.10 (that is where link training is, but not the advertisement). The advertisement is in 165.4.2.4.5 (you could say 165.4.2.4 because it contains the full infolife function)

The second problem is that this is a duplicate shall with the advertisement shall in clause 165.4.2.4.5: "EEEen and OAMen indicate EEE and 25GBASE-T1 OAM capability enable, respectively. The PHY shall indicate the support of these two optional capabilities by setting the corresponding capability bits."

"It turns out these are also problems with the entries for 2.5G/5G/10GBASE-T1...

**SuggestedRemedy**
- Change "shall be advertised" to "is advertised" on P30 L43, and change 165.4.2.4.10 to 165.4.2.4.

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

---

<table>
<thead>
<tr>
<th>Cl 78 SC 78.3</th>
<th>P 30 L 43</th>
<th># 518</th>
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<td>Ran, Adee</td>
<td>Cisco</td>
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**Comment Type** E  **Comment Status** D  EZ

The editorial instruction here is "insert", so the text should not be underlined.

However, it may be preferable to unclude the whole paragraph and use "change".

**SuggestedRemedy**
- Include the whole paragraph and use the "change" editorial instruction.

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

**Comment Type** E

Change the text format and remove underline.

---

<table>
<thead>
<tr>
<th>Cl 78 SC 78.3</th>
<th>P 30 L 49</th>
<th># 480</th>
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**Comment Type** E  **Comment Status** D  EZ

Missing period at the end of the sentence to be edited.

**SuggestedRemedy**
- Add a period after "Auto-Negotiation"

**Proposed Response**  **Response Status** W  
PROPOSED ACCEPT.
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

CI 78 SC 78.3 P30 L49 # 609
McClellan, Brett Marvell
Comment Type E Comment Status D EZ
missing period
SuggestedRemedy: change to: Auto-Negotiation.
Proposed Response Response Status W
PROPOSED ACCEPT.

CI 78 SC 78.5 P30 L54 # 481
Zimmerman, George CME Consulting/APL Gp, Cisco, CommScope, Marvell
Comment Type E Comment Status D EZ
The change made to this paragraph is already in the base standard 802.3-2022. "Case-3 of the PHY in the MultiGBASE-T1 set is the same as Case-1 when Slow Wake is active. Case-4 of the PHY in the MultiGBASE-T1 set is the same as Case-2 when Slow Wake is active." so the edit is unnecessary.
SuggestedRemedy: Delete editing instruction "Modify the 10th paragraph..." on P30 L54, and the text on P31 L1 through 7 for the edit to the text. Retain header for 78.5 and editing instruction and edit to Table
Proposed Response Response Status W
PROPOSED ACCEPT.

CI 78 SC 78.5 P31 L1 # 519
Ran, Adee Cisco
Comment Type T Comment Status D EZ
The editorial instruction says "Modify the 10th paragraph of 78.5 as follows:"
However, the text in the draft is not the tenth paragraph (which addresses MultiGBASE-T1) but from the seventh paragraph (which addresses MultiGBASE-T).
The tenth paragraph in the 802.3-2022 standard already includes the final two sentences in this amendment (they are defined for 10GBASE-T1); it seems that no change to the text is required.
SuggestedRemedy: Remove the editorial instruction and the change to the text.
Proposed Response Response Status W
PROPOSED ACCEPT.

CI 78 SC 78.5 P31 L2 # 610
McClellan, Brett Marvell
Comment Type E Comment Status D EZ
the 802.3-2022 base document uses 'Link Partner' not 'Link Partner'
SuggestedRemedy: change 'Link Partner' to 'link partner' in every occurrence
Proposed Response Response Status W
PROPOSED ACCEPT.

CI 78 SC 78.5 P31 L5 # 494
Huber, Thomas Nokia
Comment Type E Comment Status D EZ
The changes indicated for the text of the 10th paragraph are already present in 802.3-2022
SuggestedRemedy: Remove the editing instruction to modify the 10th paragraph and associated text of the 10th paragraph.
Proposed Response Response Status W
PROPOSED ACCEPT.

CI 78 SC 78.5 P31 L5 # 611
McClellan, Brett Marvell
Comment Type E Comment Status D EZ
the 802.3-2022 base document uses 'link partner' not 'Link Partner'
SuggestedRemedy: remove the editor instruction and text
Proposed Response Response Status W
PROPOSED REJECT.

Seems like a copy of comment #610 with wrong suggested remedy?
IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

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**Comment Type**: E  **Comment Status**: D  **Suggested Remedy**

"Summary of the LPI timing parameters for supported PHYs or interfaces" is Table 78-4, not Table 78-3.

**Proposed Response**: PROPOSED ACCEPT.

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**Comment Type**: E  **Comment Status**: D  **Suggested Remedy**

Table 78-3 in this draft is 78-4 in 802.3-2022.

**Proposed Response**: PROPOSED ACCEPT.

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**Comment Type**: E  **Comment Status**: D  **Suggested Remedy**

The 802.3-2022 base document shows this as Table 78-4.

**Proposed Response**: PROPOSED ACCEPT.

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**Comment Type**: T  **Comment Status**: D  **Suggested Remedy**

There are no changes to clause 78 PICS in this draft.

**Proposed Response**: PROPOSED ACCEPT.
Proposed Responses

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<tr>
<td>There is no editorial instruction nor any indication of changes in the text in 78.6 (PICS).</td>
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Proposed Response | W |
| PROPOSED ACCEPT. |

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<td>There appear to be no actual changes to this subclause. There are places in 78.6.2.2 and 78.6.3 where clause 78.4 has been incorrectly changed to 78.5; ignoring those, the content is the same as 802.3-2022</td>
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Proposed Response | W |
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<td>multiple reference to 78.5 in this subclause do not match 802.3-2022</td>
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Proposed Response | W |
| PROPOSED ACCEPT IN PRINCIPLE. |

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<tr>
<td>The text is modified and new text is indicated with underline. Therefore, the instruction &quot;Insert&quot; is inappropriate (see page 20).</td>
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Proposed Response | W |
| PROPOSED ACCEPT IN PRINCIPLE. |

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Proposed Response | W |
| PROPOSED ACCEPT IN PRINCIPLE. |

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Proposed Response | W |
| PROPOSED ACCEPT IN PRINCIPLE. |

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Proposed Response | W |
| PROPOSED ACCEPT IN PRINCIPLE. |
### Proposed Responses

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**Comment Type:** ER/editorial required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

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

**SORT ORDER:** Clause, Subclause, page, line

---

**P802.3cz (Amendment 7) currently specifies includes many changes to Clause 105. With this project currently targeted to be Amendment 9, base text should include proposed inserts, replaces and changes in P802.3/D2.2.**

**Suggested Remedy:**

Use base text from P802.3cz/D2.2. Individual comments will be made on items noticed.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

---

**Cl 105 SC 105 P 39 L 1 # 563**

<table>
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<tbody>
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**Comment Type:** E/editorial required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

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

**SORT ORDER:** Clause, Subclause, page, line

---

**Blank page**

**Suggested Remedy:**

Remove blank page.

**Proposed Response**

PROPOSED ACCEPT.

---

**Cl 105 SC 105.1 P 35 L 7 # 384**

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**Comment Type:** E/editorial required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

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

**SORT ORDER:** Clause, Subclause, page, line

---

**Missing editing instructions**

**Suggested Remedy:**

Add editing instructions for 105.1.1 and 105.1.3. Correct editing instruction for 105.7. It is not an editorial note.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #408 for 105.1.1

---

**Cl 105 SC 105.1 P 35 L 7 # 408**

<table>
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**Comment Type:** T/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

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

**SORT ORDER:** Clause, Subclause, page, line

---

**The change made by IEEE Std 802.3cz removed the list of PHYs so no change is needed for IEEE Std 802.3cy.**

**Suggested Remedy:**

Delete 105.1.1.

**Proposed Response**

PROPOSED ACCEPT.

See comment #408 for 105.1.1

---

**Add editing instructions for 105.1.3. Correct editing instruction for 105.7. It is not an editorial note.**
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

Cl 105  SC 105.1.1  P35  L7  # 360
Grow, Robert  RMG Consulting

Comment Type  ER  Comment Status  D  EZ, 105.1.1

P802.3cz (Amendment 7) currently specifies removal of the list in this paragraph.

SuggestedRemedy

Use base text from P802.3cz/D2.2 or work with P802.3cz TF to agree on a common approach to such lists that keep reappearing in Std 802.3.

Proposed Response  Response Status  W  PROPOSED ACCEPT IN PRINCIPLE.

See comment #408

Cl 105  SC 105.1.1  P35  L10  # 496
Huber, Thomas  Nokia

Comment Type  E  Comment Status  D  EZ, 105.1.1

Missing an editing instruction

SuggestedRemedy

Add an editing instruction to modify the first paragraph of 105.1.1 as shown.

Proposed Response  Response Status  W  PROPOSED ACCEPT IN PRINCIPLE.

See comment #408

Cl 105  SC 105.1.1  P35  L12  # 525
Ran, Adee  Cisco

Comment Type  E  Comment Status  D  EZ, 105.1.1

Although it is preceded by "such as" which suggests it only includes examples, the list keeps growing.

The list of PHYs has no merit here. Table 105-1 contains the same information and can be referenced.

SuggestedRemedy

Delete the list of PHYs and refer to Table 105-1 instead.

Proposed Response  Response Status  W  PROPOSED ACCEPT IN PRINCIPLE.

See comment #408 for 105.1.1

Cl 105  SC 105.1.1  P35  L12  # 547
Brown, Matt  Huawei

Comment Type  ER  Comment Status  D  EZ, 105.1.2

Instruction is not consistent with proper form.

SuggestedRemedy

Break into two instructions, one for text and one for figure. Figure instructions should be
"Replace Figure 131-1 (adding stack for 25GBASE-T1 and adding NOTE 2) as follows:
Then either:
"Insert new bullet e as shown:" and remove the underline, or
"Change list as follows:" and include whole list, with new item e underlined

Proposed Response  Response Status  W  PROPOSED ACCEPT IN PRINCIPLE.

Changes relative to suggested remedy in >><<

Break into two instructions, one for text and one for figure. Figure instructions should be
"Replace Figure >>105<<-1 (>>as modified by P802.3cz/D3.2<<, adding stack for
25GBASE-T1 and adding NOTE 2) as follows:
Then >>"Insert new bullet e as shown:" and remove the underline<<

Cl 105  SC 105.1.1  P35  L12  # 526
Ran, Adee  Cisco

Comment Type  E  Comment Status  D  EZ, 105.1.2

The change of the text in 105.1.2 does not include the context and makes the new text obscure for readers without going to the base document.

Also, "Update Figure 131-1" - should be 105-1.

SuggestedRemedy

Separate into two instructions, the first for the figure (and change it to Figure 105-1), the second to the text - either the second paragraph or the list of exceptions.

Include the full list of exceptions or use "insert a new item at the end of the list of exceptions".

Proposed Response  Response Status  W  PROPOSED ACCEPT IN PRINCIPLE.

See comment #347
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

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<td>D</td>
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<td>Editorial instruction should follow the subclause title line. Editorial instruction should be split into two to point at appropriate documents (e.g., P802.3cz) and use correct editing instruction.</td>
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<tr>
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<td>D</td>
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<td>The PCS type should be specified.</td>
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<td>Change to an editorial instruction for Figure 131-1 only and refer to IEEE Std 802.3cz.</td>
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<tr>
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<td>E</td>
<td>D</td>
<td>Wienckowski, Natalie</td>
<td>Add editorial note for the text and put the text before the Figure.</td>
</tr>
</tbody>
</table>

---

Suggested Remedy

- Editorial instruction should follow the subclause title line. Editorial instruction should be split into two to point at appropriate documents (e.g., P802.3cz) and use correct editing instruction.
- Move editorial instruction below subclause title. Instruction at this location should be "Replace Figure 105-1 (as modified by P802.3cz/D3.2) with the below which adds a protocol stack for 25GBASE-T1 and adds NOTE-2.”
- Change editing instructions to read: "Change 105.1.2 adding a new bullet e as shown below. Update Figure 105-1 adding stack for 25GBASE-T1 and adding NOTE 2 as shown below”
- Change 105.1.2 to 105-1
- The editing instruction refers to figure 131-1 instead of 105-1
- The MDI as specified in Clause165 for 25GBASE-T1 uses a single-lane data path._

---

PROPOSED ACCEPT IN PRINCIPLE.

See comment #347

---

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Page 16 of 77
8/15/2022 3:27:56 PM
Comment Type: E  Comment Status: D  EZ, 25GBASE-T1 PCS

- the PCS in the 25GBASE-T1 stack should be identified similar to the pre-existing stacks

SuggestedRemedy
- insert '25GBASE-T1' before PCS

Proposed Response
- Response Status: W
- PROPOSED ACCEPT IN PRINCIPLE.

See comment #452

---

Comment Type: E  Comment Status: D  EZ, 25GBASE-T1 PCS

- (Figure 105-1) For 25GBASE-T1, FEC is part of PCS functions, so it is better not to list FEC as a separate sublayer in this figure. Please refer to 25GBASE-T or 10GBASE-T1 as two examples.

SuggestedRemedy
- Recommend to change the "PCS" box as "25GBASE-T1 PCS" (preferred) or "64B/65B RS-FEC PCS" and remove the FEC box.

Proposed Response
- Response Status: W
- PROPOSED ACCEPT IN PRINCIPLE.

See comment #362 + remove the FEC box

---

Comment Type: TR  Comment Status: D  EZ

As previously commented the stacks in Figs 105-1 and 165-1 do not match, but it is noticed additionally that these diagrams treat FEC differently. In 105-1 FEC is in a sublayer under the PCS, while in 165-1 it is combined with the PCS. Clause 165.3.2.2.2 seem to indicate that FEC is a TX PCS function and there is no such subclause in the Rx PCS function. This is somewhat difficult to figure out.

SuggestedRemedy
- If the commenter is understanding the draft correctly, the title of the 165 column should be 25GBASE-T1 PCS/FEC/PMA. As noted previously, the stack of 25GBASE-T1 in Fig 105-1 should be modified to match the stack in Fig 165-1.

Proposed Response
- Response Status: W
- PROPOSED ACCEPT IN PRINCIPLE.

Looking at the P802.3cz D2.2, they added the very same PCS/PMA/PMD and Figure 105-1 shows only 25GBASE-AU with no mention of PCS/FEC/PMA. The purpose of these additions is somewhat confusing.

---

Comment Type: TR  Comment Status: D  EZ

The stack for 25GBASE-T1 in Fig 105-1 does not match the stack shown in Fig 165-1.

SuggestedRemedy
- Modify the stack of 25GBASE-T1 in Fig 105-1 to match the stack in Fig 165-1.

Proposed Response
- Response Status: W
- PROPOSED ACCEPT IN PRINCIPLE.

Redraw 25GBASE-T1 stack in Figure 105-1 to match Figure 165-1.

---

Comment Type: ER  Comment Status: D  EZ, Figure 105-1

P802.3cz also adds a stack for BASE-AU.

SuggestedRemedy
- Use Figure 105-1 from P802.3cz/D2.2 as base for modification. The 25GBASE-T1 stack could be inserted to the left of the BASE-AU stack. Stack widths will probably have to be narrowed to accommodate 4 different stacks.

Proposed Response
- Response Status: W
- PROPOSED ACCEPT.
**Proposed Responses**

### IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

#### Cl 105 SC 105.1.2

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**Proposed Response**

- PROPOSED ACCEPT.

#### Cl 105 SC 105.1.3

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**Proposed Response**

- PROPOSED ACCEPT IN PRINCIPLE.

#### Cl 105 SC 105.1.3

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**Proposed Response**

- PROPOSED ACCEPT IN PRINCIPLE.

#### Cl 105 SC 105.1.3

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**Proposed Response**

- PROPOSED ACCEPT IN PRINCIPLE.
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**Proposed Responses**

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**Sort Order:** Clause, Subclause, page, line  
**Comment Status:** D (Dispatched), A (Accepted), R (Rejected)  
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**Comment Type**: E/editorial required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
**COMMENT STATUS**: D/dispatched A/accepted R/rejected  RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
**SORT ORDER**: Clause, Subclause, page, line
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

**Comment Type** E  **Comment Status** D  **EZ, Table 105-2**

**Comment:**

Edits in Table 105-2:
- No editing instruction for Table 105-2.
- Missing editing marking on entry in Nomenclature row for "25GBASE-T1"
- Row should be after 25GBASE-T, which is in the middle of the table, but no other rows are shown.

**Suggested Remedy:**
- Add editing instruction, "Change Table 105-2 adding new row for 25GBASE-T1 immediately below row for 25GBASE-T, and adding new column for 25GBASE-T1 PCS/PMA at the right hand side as shown (unchanged rows not shown):"
- Add underline to Nomenclature entry for "25GBASE-T1"
- Add new "... " row following new row for 25GBASE-T1.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #367

---

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

**Comment:**

Table too wide.

**Suggested Remedy:**
- Reduce table with by adjust column widths.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

The Editor will attempt to reduce the size of the table. If that does not work, the Editor will break the table into two, separating fiber and copper media.

---

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

**Comment:**

Table 105-2 appears incomplete - Clause 78 EEE optional support not indicated
- Clause 106 mandatory use of RS and 25GMII not indicated
- Clause 165 is noted as PMD, not PCS / PMA as noted by the title of the agenda

**Suggested Remedy:**
- For 25GBASE-T1 entry in Table 105-2, make the following:
  - Clause 78 EEE - Optional
  - Clause 106 - Mandatory
- Change title of 165 column to "25GBASE-T1 PCS/PMA *

**Proposed Response**

PROPOSED ACCEPT.

See comment #451

---

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

**Comment:**

In Table 105-2:
- The column for clause 165 should be labeled "25GBASE-T1 PCS and PMA"
- EEE should be marked "O", RS and 25GMII should be "M" and "O"
- Several of the clauses are included in this draft and the heading numbers should be made active links.
- The columns can be narrowed to make the table fit within the margins.

**Suggested Remedy:**
- Per comment

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #451

---

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

**Comment:**

As amendment 9, the table from P802.3cz should be used as base.

**Suggested Remedy:**
- Include clause 166 column from P802.3cz/D2.2.

**Proposed Response**

PROPOSED ACCEPT.
### Proposed Responses

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**Lusted, Kent**
Intel Corporation

**Comment Type:** TR

**Comment Status:** D

**Table 105-2**

Table 105-2 entry "25GBASE-T1" has a column for Clause 165 denoted as "25GBASE-T1 PMD". This name is misleading because Clause 165 contains a PCS and a PMA. Note that PMD is not used at all in the title of Clause 165 on page 40. Furthermore, the Table 44-1 in IEEE Std 802.3-2022 (page 1716) provides a column name of "RS-FE PCS and 1-pair PMA" which is inconsistent with the existing text in 3cy D2.0 Table 105-2.

**Suggested Remedy:**
Change the column title from "25GBASE-T1 PMD" to "25GBASE-T1 PCS/PMA"

**Proposed Response**
PROPOSED ACCEPT.

---

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**McClellan, Brett**
Marvell

**Comment Type:** E

**Table 105-2**

25GBASE-T1 has a PCS/PMA not a PMD

**Suggested Remedy:**
change PMD to PCS/PMA in the 165 column

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.

See comment #451

---

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**Zimmerman, George**
CME Consulting/APL Gp, Cisco, CommScope, Marve

**Comment Type:** T

**Comment Status:** D

"25GBASE-T1 PMD" - 25GBASE-T1 is a PCS/PMA not a PMD.

**Suggested Remedy:**
Change "25GBASE-T1 PMD" to "25GBASE-T1 PCS/PMA"

**Proposed Response**
PROPOSED ACCEPT.
**Proposed Responses**

**IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments**

*Cl 105 SC 105.3 P37 L24 # 454*

D'Ambrosia, John  
Futurewei, US Subsidiary of Huawei

**Comment Type** ER  **Comment Status** D EZ

Subclauses 105.3.1 through 105.3.5 are listed with no changes. Is this the intent?

**Suggested Remedy**

Delete subclauses 105.3.1 through 105.3.5.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #625 and #626. Delete 105.3.1 and 105.3.5.

**Cl 105 SC 105.3 P37 L25 # 532**

Ran, Adee  
Cisco

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

Why are all the subclause headings listed?

The new inserted text should not be underlined.

**Suggested Remedy**

Remove the unnecessary ones before 105.3.6

Remove the underline format.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #625 and #626. Delete 105.3.1 and 105.3.5.

**Cl 105 SC 105.3 P37 L26 # 549**

Brown, Matt  
Huawei

**Comment Type** ER  **Comment Status** D EZ

No changes to 105.3.1 through 105.3.5.

**Suggested Remedy**

Delete headings for 105.3.1 through 105.3.5.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #625 and #626. Delete 105.3.1 and 105.3.5.

**Cl 105 SC 105.3 P37 L26 # 488**

Zimmerman, George  
CME Consulting/APL Gp, Cisco, CommScope, Marve

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

Headers for 105.3.1 through 105.3.5 are unnecessary

**Suggested Remedy**

Delete headers 105.3.1 through 105.3.5 and go straight to 105.3.6.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #625 and #626. Delete 105.3.1 and 105.3.5.

**Cl 105 SC 105.3 P37 L26 # 622**

McClellan, Brett  
Marvell

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

It isn’t necessary to show section headers for 105.3.1 through 105.3.5

**Suggested Remedy**

Delete section headers for 105.3.1 through 105.3.5.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #625 and #626. Delete 105.3.1 and 105.3.5.

---

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

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

SORT ORDER: Clause, Subclause, page, line

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IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

Proposed Responses

**Comment Type ER Comment Status D**
- **Cl 105 SC 105.3 P37 L 40 # 623**
  - McClellan, Brett Marvell
  - **this text is unnecessary and redundant**

**Suggested Remedy**
- delete 'Clause 98 Auto-Negotiation may be used by 25GBASE-T1 PHYs. Auto-Negotiation is performed upon link startup through the use of half-duplex differential Manchester encoding.'

**Proposed Response Response Status W**
- PROPOSED REJECT.
- Discussion might be needed as to why it might redundant and unnecessary. The text is technically correct.

**Comment Type E Comment Status D**
- **Cl 105 SC 105.3.2 P37 L 28 # 625**
  - McClellan, Brett Marvell
  - **add a description of the 10GBASE-T1 PCS**

**Suggested Remedy**
- insert "25GBASE-T1 PHYs use the PCS specified in Clause 165. The 25GBASE-T1 PCS performs encoding of data from the 25GMII to 64B/65B RS_FEC code blocks and PAM4 modulation and transfers the symbols to the PMA and performs error correction and decoding of PAM4 symbols from the PMA and transfers the decoded data to the 25GMII." add editor instructions as needed

**Proposed Response Response Status W**
- PROPOSED ACCEPT IN PRINCIPLE.
- Changes per text. Use the following editorial note: "Insert a new paragraph at the end of 105.3.6 as follows:"

**Comment Type E Comment Status D**
- **Cl 105 SC 105.3.4 P37 L 33 # 626**
  - McClellan, Brett Marvell
  - **add a description of the 10GBASE-T1 PMA**

**Suggested Remedy**
- insert "25GBASE-T1 PHYs use the PMA specified in Clause 165. The PMA provides for full duplex communications over a single balanced pair of conductors." add editor instructions as needed

**Proposed Response Response Status W**
- PROPOSED ACCEPT IN PRINCIPLE.
- Changes per text with change of "Tthe" to "The"). Use the following editorial note: "Insert a new paragraph at the end of 105.3.4 as follows:"

Page line was adjusted.

**Comment Type E Comment Status D**
- **Cl 105 SC 105.3.6 P37 L 40 # 350**
  - Brown, Matt Huawei
  - **add a description of the 25GBASE-T1 PCS**

**Suggested Remedy**
- insert "25GBASE-T1 PHYs use the PCS specified in Clause 165. The 25GBASE-T1 PCS performs encoding of data from the 25GMII to 64B/65B RS_FEC code blocks and PAM4 modulation and transfers the symbols to the PMA and performs error correction and decoding of PAM4 symbols from the PMA and transfers the decoded data to the 25GMII." add editor instructions as needed

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

**Comment Type E Comment Status D**
- **Cl 105 SC 105.3.6 P37 L 40 # 489**
  - Zimmerman, George CME Consulting/APL Gp, Cisco, CommScope, Marvell
  - **Style of text about 25GBASE-T1 does not fit the style of the surrounding text in this clause (note that clause 126 where 802.3ch edited had a very different style). Also, the second statement "is optional" is unnecessary, as the text already says "may be used". The text can be rephrased in the same style as the rest of the clause and much simpler.**

**Suggested Remedy**
- Change editing instruction to "Insert new paragraph at the end of 105.3.6 as follows:"
- Remove 2 paragraph edit at P37 L40-43 with:
  - "Clause 98 AN may be used by the 25GBASE-T1 PHY, but is not required."

**Proposed Response Response Status W**
- PROPOSED ACCEPT.
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<td>Grow, Robert</td>
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<td>D</td>
<td>EZ</td>
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<td>W</td>
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</tbody>
</table>

**Proposed Responses**

- **Comment #370**
  - **Proposed Response**: Insert row into Table 105-3 for 25GBASE-T1 after 25GBASE-T.
  - **Response Status**: W

- **Comment #430**
  - **Proposed Response**: Replace "Editorial Note: Change 105.7 as shown below." with "Change Table 105-3 inserting new rows for 25GBASE-T1 after rows for 25GBASE-T1 as shown (unchanged rows not shown):";
  - **Response Status**: W

- **Comment #490**
  - **Proposed Response**: Replace "Editorial Note: Change 105.7 as shown below." with "Change Table 105-3 inserting new rows for 25GBASE-T1 after rows for 25GBASE-T1 as shown (unchanged rows not shown):";
  - **Response Status**: W

**Proposed Acceptance**

- **Comment #370**
  - **Proposed Acceptance**: PROPOSED ACCEPT IN PRINCIPLE. | W | Insert row into Table 105-3 for 25GBASE-T1 after 25GBASE-T.

- **Comment #430**
  - **Proposed Acceptance**: PROPOSED ACCEPT IN PRINCIPLE. | W | Replace "Editorial Note: Change 105.7 as shown below." with "Change Table 105-3 inserting new rows for 25GBASE-T1 after rows for 25GBASE-T1 as shown (unchanged rows not shown):";

- **Comment #490**
  - **Proposed Acceptance**: PROPOSED ACCEPT IN PRINCIPLE. | W | Replace "Editorial Note: Change 105.7 as shown below." with "Change Table 105-3 inserting new rows for 25GBASE-T1 after rows for 25GBASE-T1 as shown (unchanged rows not shown):";
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<td>EZ, Table 105-3</td>
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<tr>
<td>The editorial note seems to be an instruction, and to point to the wrong place.</td>
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<tr>
<td><strong>SuggestedRemedy</strong></td>
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<td>Change &quot;Editorial Note: Change 105.7 as shown below&quot; to &quot;Change Table 105-3 as shown below&quot;.</td>
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<td>Please add the appropriate editing instructions</td>
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<td>Editorial Note is separated from 105.7.</td>
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<td>The &quot;editorial note&quot; should be replaced with an editing instruction to modify Table 105-3</td>
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<td>Add an editing instruction to insert new rows at the end of Table 105-3 as shown.</td>
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</table>

See comment #370
It is unclear what the expressions "L=1" etc. mean in this table.

In the table in the base document, the "Notes" column includes references to the subclause within the PHY clause that specifies this delay. In this case, it should be "See 165.10"

Looking at 165.10, there are different maximum delay specifications depending on the "Interleave" parameter. Interleaving (or "L") is negotiated between the link partners and may be different in either direction, so is unknown in advance for a given device.

The purpose of this table (per the text preceding it: "network planners and administrators conform to constraints regarding the cable topology and concatenation of devices... Table 105–3 contains the values of maximum sublayer delay (sum of transmit and receive delays at one end of the link")

Therefore it seems adequate to list here only the maximum delay of the PHY, which happens with L=8. The text in 165.10 can include further details about how the delay can be lower in some cases.

**Suggested Remedy**

Use only one row for "25GBASE-T1 PHY", with the data for L=8, and point to 165.10 in the "Notes" column, consistent with the other rows.

**Proposed Response**

PROPOSED ACCEPT.

Comment was re-classified as T

---

"L' isn't defined anywhere in Clause 105 and makes the note confusing. Follow the example for 10GBASE-T1 in Clause 44"

**Suggested Remedy**

break the 25GBASE-T box into 4 lines with these labels: '25GBASE-T1 no interleave', '25GBASE-T1 2x interleave', '25GBASE-T1 4x interleave', '25GBASE-T1 8x interleave'.

Replace the 'L=' notes in each row with "See 165.10"

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

---

There is no subclause 105.7 in the base standard, and no edits to it in this draft.

**Suggested Remedy**

Delete subclause 105.7, P38 L19-25

**Proposed Response**

PROPOSED ACCEPT.
<table>
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<td>D</td>
<td>Editorial instruction is missing.</td>
<td>Add an appropriate instruction.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
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<td>105.7</td>
<td>38</td>
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<td>352</td>
<td>E</td>
<td>D</td>
<td>Missing editorial instruction.</td>
<td>Add editorial instruction.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
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<td>149B</td>
<td>149B</td>
<td>148</td>
<td>15</td>
<td>631</td>
<td>E</td>
<td>D</td>
<td>use of 'MultiGBASE-T1' may be too general here if new PHYs are later specified that don't conform to this subclause.</td>
<td>replace 'MultiGBASE-T1' with 'Clause 149 and Clause 165'</td>
<td>PROPOSED ACCEPT.</td>
</tr>
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<tr>
<td>165</td>
<td>165.1</td>
<td>40</td>
<td>10</td>
<td>393</td>
<td>E</td>
<td>D</td>
<td>In the first sentence of the paragraph, we have ‘… as well as the 25GBASE-T1 Physical Medium Attachment (PMA) sublayers’. The ‘sublayers’ should be 'sublayer'. It's a typo.</td>
<td>We should have ‘… as well as the 25GBASE-T1 Physical Medium Attachment (PMA) sublayer’.</td>
<td>PROPOSED ACCEPT.</td>
</tr>
</tbody>
</table>

**Proposed Responses**

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments
### Proposed Responses

#### IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

<table>
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<th>Line</th>
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<th>Comment Status</th>
<th>Issue Addressed</th>
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<tr>
<td>165</td>
<td>165.1</td>
<td>40</td>
<td>14</td>
<td>E</td>
<td>D</td>
<td>EZ, PHYs</td>
<td>The phrase &quot;The 25GBASE-T1 PHYs&quot; seems to be inherited from clause 149 which has &quot;The 2.5GBASE-T1, 5GBASE-T1, and 10GBASE-T1 PHYs&quot;, because that clause specifies three different PHYs. But here only one PHY is specified, and is later referred to in singular, e.g. in the third paragraph &quot;a 25GBASE-T1 PHY&quot;. Similarly in two other instances in this paragraph, and also in the first sentence in 165.1.2 and maybe elsewhere. Other artifacts of this inheritance seem to exist, e.g. in 165.1.3 &quot;The 25GBASE-T1 PHY each operate&quot; should be &quot;The 25GBASE-T1 PHY operates&quot;.</td>
</tr>
<tr>
<td>165</td>
<td>165.1</td>
<td>40</td>
<td>14</td>
<td>E</td>
<td>D</td>
<td>EZ, PHYs</td>
<td>Though similar problems exist in many clauses in 802.3, I think in many cases using plural &quot;PHYs&quot; in this clause is wrong. There is one 25GBASE-T1 PHY specification and most of the time text is addressing the 25GBASE-T1 PHY specification, not multiple instances of a 25GBASE-T1 interface on a networked device, or various 25GBASE-T1 PHY implementations. Grammar problems left after deleting 50 Gb/s and 100 Gb/s highlight this, for example on line 17, &quot;the 25GBASE-T1 PHYs&quot; where &quot;the&quot; and &quot;PHYs&quot; would have been appropriate for a list of multiple rates, but is not for a single rate.</td>
</tr>
</tbody>
</table>

#### Commenter Details

- **Ran, Adee** Cisco
  - **Cl** 165 | **SC** 165.1 | **Page** 40 | **Line** 14 | **#** 536

- **Grow, Robert** RMG Consulting
  - **Cl** 165 | **SC** 165.1 | **Page** 40 | **Line** 14 | **#** 511

- **Wienckowski, Natalie** General Motors
  - **Cl** 165 | **SC** 165.1.1 | **Page** 40 | **Line** 24 | **#** 422

- **Marris, Arthur** Cadence Design Systems
  - **Cl** 165 | **SC** 165.1.1 | **Page** 40 | **Line** 27 | **#** 389
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

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<th>Proposed Response</th>
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<tbody>
<tr>
<td>165</td>
<td>165.1.2</td>
<td>E</td>
<td>D</td>
<td>Insert &quot;Optional&quot; before Auto-Negotiation</td>
<td>PROPOSED ACCEPT.</td>
<td>W</td>
</tr>
<tr>
<td>165</td>
<td>165.1.2</td>
<td>E</td>
<td>D</td>
<td>Change &quot;Clause 98&quot; to an active cross reference and remove external tag.</td>
<td>PROPOSED ACCEPT.</td>
<td>W</td>
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<tr>
<td>165</td>
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<td>Change &quot;Clause 98&quot; to black and make it a hyperlink. Also on P41L42, P41L46, P41L52, P49L46, P96L46, P97L47, P117L40, P117L44, P131L6, P131L39, P141L28, P37L40, P37L43</td>
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<td>165</td>
<td>165.1.3</td>
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<td>D</td>
<td>Make Clause 98 a cross reference. Also page 41 line 42. Also Clause 78 on page 42 line 5. Scrub the document and make Clause 45, Clause 78 and Clause 98 an active cross reference throughout rather than an external.</td>
<td>PROPOSED ACCEPT.</td>
<td>W</td>
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<tr>
<td>165</td>
<td>165.1.3</td>
<td>E</td>
<td>D</td>
<td>A 25GBASE-T1 PHY operates using full-duplex communications over one, shielded balanced pair of conductors with an effective rate of 25 Gb/s in each direction while meeting the requirements…</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td>W</td>
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<tr>
<td>165</td>
<td>165.1.3</td>
<td>E</td>
<td>D</td>
<td>Leftover reference to two and four pairs: &quot;over one, two, or four shielded...&quot;</td>
<td>PROPOSED ACCEPT.</td>
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Marris, Arthur  
Cadence Design Systems

Comment Type | Comment Status | Suggested Remedy | Proposed Response | Response Status |
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<td>E</td>
<td>D</td>
<td>Make Clause 98 a cross reference. Also page 41 line 42. Also Clause 78 on page 42 line 5. Scrub the document and make Clause 45, Clause 78 and Clause 98 an active cross reference throughout rather than an external.</td>
<td>PROPOSED ACCEPT.</td>
<td>W</td>
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<td>D</td>
<td>A 25GBASE-T1 PHY operates using full-duplex communications over one, shielded balanced pair of conductors with an effective rate of 25 Gb/s in each direction while meeting the requirements...</td>
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<td>D</td>
<td>Leftover reference to two and four pairs: &quot;over one, two, or four shielded...&quot;</td>
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Carlson, Steve  
HSD, Bosch, Ethernovia

Comment Type | Comment Status | Suggested Remedy | Proposed Response | Response Status |
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<td>D</td>
<td>Leftover reference to two and four pairs: &quot;over one, two, or four shielded...&quot;</td>
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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general  
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn  
SORT ORDER: Clause, Subclause, page, line

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8/15/2022 3:27:57 PM
The first sentence of the first paragraph states 'The 25GBASE-T1 PHY each operate using full-duplex communications over one, two, or four shielded balanced pair of conductors with an effective rate of 25 Gb/s on each pair ...'. Following the changes in the objectives, should this sentence indicate only one shielded balanced pair? Although I set the category of this comment as editorial, I am not fully sure if this is editorial or technical.

**Suggested Remedy**

We should have "The 25GBASE-T1 PHY each operates using full-duplex communications over one shielded balanced pair of conductors with an effective rate of 25 Gb/s in each direction simultaneously while meeting the requirements (EMC, temperature, etc.) of automotive environments."

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comments #391 and #448

---

"The 25GBASE-T1 PHY each operate...over one, two, or four shielded... on each pair..."

didn't get cleaned up when we deleted the 2 and 4 lane 50GBASE-T2 and 100GBASE-T4

**Suggested Remedy**

change the first sentence of the first paragraph of 165.1.3 to:"The 25GBASE-T1 PHY operates using full-duplex communications over a single shielded balanced pair of conductors with an effective rate of 25 Gb/s in each direction simultaneously while meeting the requirements (EMC, temperature, etc.) of automotive environments."

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comments #391 and #448

---

I thought this is a single pair PHY at 25 Gb/s total?

**Suggested Remedy**

Rewrite as necessary

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comments #391 and #448
Only 1 pair of conductors is used.

Suggested Remedy
Change: The 25GBASE-T1 PHY each operate using full-duplex communications over one, two, or four shielded balanced pair of conductors with an effective rate of 25 Gb/s on each pair in each direction simultaneously ...
To: The 25GBASE-T1 PHY operates using full-duplex communications over one shielded balanced pair of conductors with an effective rate of 25 Gb/s in each direction simultaneously ...

Response
PROPOSED ACCEPT IN PRINCIPLE.
See comments #391 and #448
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

Cl 165 SC 165.1.3 P 41 L 35 # 514
Grow, Robert RMG Consulting

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

There is only one Baud rate listed, "rates" should be singular.

**Suggested Remedy**

"at a 14.0625 GBd rate."

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

PROPOSED ACCEPT.

Cl 165 SC 165.1.3 P 41 L 35 # 513
Grow, Robert RMG Consulting

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

Most multigigabit specifications use GBd for Baud rate (e.g., Clause 30, Clause 48 for 10GBASE-X, Clause 108 for 25GBASE-R, etc.) Also change similar MHz specifications.

**Suggested Remedy**

p. 41, l. 35 - 14.0625 GBd
p. 42, l. 17 - 14.0625 GBd
p. 44, l. 5 - 14.0625 GBd
p. 45, l. 4 - 14.0625 GBd
p. 151, l. 4 - 14.0625 GBd
p. 50, l. 21 - 14.0625 MHz
p. 107, l. 38 - 0.878 906 25 GHz
p. 113, l. 37 - 14.0625 GHz
p. 144, l. 34 - 14.0625 GHz

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

PROPOSED ACCEPT IN PRINCIPLE.

Cl 165 SC 165.1.3 P 41 L 37 # 538
McClellan, Brett Marvell

**Comment Type: TR**  **Comment Status: D**

TX_D, TX_EN and TX_ER are not 25GMII signals. Note that Clause 149 has the same error.

**Suggested Remedy**

change '25GMII TX_D, TX_EN, and TX_ER' to '25GMII TXD and TXC'

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

PROPOSED ACCEPT.

An MR against Clause 149 needs to be filed to address that issue.

Cl 165 SC 165.1.3 P 41 L 37 # 538
Ran, Adee Cisco

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

Since this PHY uses RS-FEC, the concept of BER is inadequate; when a FEC (super)frame is discarded, all bits are replaced with error bits, so the BER can be much higher than the 1e-12 stated here.

The performance of this PHY is defined by the rfer target, which can be stated as equivalent to some BER if RS-FEC was not used. The method used in other PHYs is comparision of MAC frame loss ratio (FLR). The FLR equivalent of BER=1e-12 is 6.2e-10 (see for example 92.1).

The suggested remedy uses FLR. Alternatively, "performance" or other terms can be used instead, but not simply "BER".

**Suggested Remedy**

Change "To maintain a bit error ratio (BER) of less than or equal to 10^-12" to "To maintain a frame loss ratio (FLR) equivalent to a bit error ratio (BER) of less than or equal to 10^-12."

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

PROPOSED ACCEPT.

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

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Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

**Proposed Responses**

**Cl 165 SC 165.1.3 P 42 L 6 # 667**

Zimmerman, George  
CME Consulting/APL Gp, Cisco, CommScope, Marve

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

"The EEE capability is a mechanism by which 25GBASE-T1 PHYs are able to reduce power consumption during periods of low link utilization." this doesn't really describe something we spend a lot of time discussing - namely that EEE does this based on link utilization IN EITHER DIRECTION.

**Suggested Remedy**

add "independently for each direction of the link" to the end of the sentence.

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

PROPOSED ACCEPT.

**Cl 165 SC 165.1.3.1 P 42 L 28 # 539**

Ran, Adee  
Cisco

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

The text in this subclause specifies what happens "In the transmit direction, in normal mode", but does not say anything about the receive direction in normal mode.

Specifically, the number L is used as part of the specification; it is not stated here how L is determined, but in 165.3.2.2 (PCS Transmit function) it is written that "The interleaver settings requested in each direction of transmission may be different... signaled during the PAM2 training mode Infofield exchange". This means L can be different in the receive and transmit directions; this should be noted here (any preferably notation should be used to clarify that there are two simultaneous values of L).

A reference to the definition and content of the infofield (in 165.4.2.4.5) would also be helpful.

**Suggested Remedy**

Rewrite as necessary

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

PROPOSED REJECT.

**Cl 165 SC 165.1.6 P 45 L 32 # 540**

Ran, Adee  
Cisco

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

The conventions listed here are mainly for state diagrams. There is another subclause 165.3.7.1 which also lists state diagram conventions, and is located right before the state diagrams - where it is more helpful to the reader.

**Suggested Remedy**

Move the content of this subclause to 165.3.7.1, merging as necessary.

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

PROPOSED REJECT.

165.3.7.1 covers just state diagram conventions, while 165.1.6 is more generic in nature. No changes needed. The current structure mimics the existing clauses in the approved 802.3-2022

**Cl 165 SC 165.1.3.3 P 44 L 22 # 424**

Wienckowski, Natalie  
General Motors

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

78.3 is in the draft.

**Suggested Remedy**

Change "78.3" to black and make it a hyperlink.

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

PROPOSED ACCEPT.

**Cl 165 SC 165.1.3.1 P 42 L 35 # 540**

Gorshe, Steve  
Microchip Technology

**Comment Type** ER  
**Comment Status** D

The phrase "RS-FEC (936, 846, 2^10)" appears to be the incorrect format. This implies that the FEC symbol size is 2^10 = 1024 bits. It appears that it should be "RS-FEC (936, 846, 10)" using the 10-bit symbol size of KR-4 and KP-4 FEC codes

**Suggested Remedy**

If the comment is correct, this should be changed to RS-FEC (936, 846, 10)

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

PROPOSED ACCEPT.
The value of L and the choice of precoding are requested by the link partner during link training - which is a PMA function. These values have to be passed to the PCS for correct encoding.

Since all information exchange from the PMA to the PCS is defined in terms of service interface primitives, some primitive should indicate the value of L and precoding selection.

The of PMA_CONFIG.indication could be expanded to include these values but I suspect it may not be straightforward, since the existing content (master or slave) is available before training starts, but the values of L and precoding are determined only later.

**Suggested Remedy**
Add a primitive as described in the comment, in the text and figures as necessary.

**Proposed Response**
PROPOSED REJECT.
No specific changes were proposed.

**Cl 165 SC 165.2.2.3.3 P 50 L 3 # 656**

Wu, Peter
Marvell

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

Upon receipt of this primitive the PMA transmits on the MDI the signals corresponding to the indicated symbols processed to conform to 149.5.2. Missing ";"; hard to read

**Suggested Remedy**
Upon receipt of this primitive, the PMA transmits on the MDI the signals corresponding to the indicated symbols processed to conform to 149.5.2.

**Proposed Response**
PROPOSED ACCEPT.

**Cl 165 SC 165.2.2.3.3 P 50 L 4 # 603**

McClellan, Brett
Marvell

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

Incorrect reference. "Upon receipt of this primitive the PMA transmits on the MDI the signals corresponding to the indicated symbols processed to conform to 149.5.2." The reference points to the transmitter electrical specifications for 2.5G/5G/10GBASE-T1 (Clause 149). The electrical specifications for 25GBASE-T1 have different timing and are specified in 165.5.3

**Suggested Remedy**
Change external reference of 149.5.2 to an active cross-reference to 165.5.3

**Proposed Response**
PROPOSED ACCEPT.
The PCS comprises one PCS Reset function and two simultaneous and asynchronous operating functions. The PCS operating functions are: PCS Transmit and PCS Receive." - this has been copied from clause to clause, but isn’t true for clause 165 (or 149 or even 97). The automotive clauses add a 3rd function to the PCS - the PCS OAM. see figure 165-4.

**SuggestedRemedy**

change "The PCS comprises one PCS Reset function and two simultaneous and asynchronous operating functions." to "The PCS comprises one PCS Reset function and two simultaneous and asynchronous operating functions, and the PCS OAM function."

**Proposed Response**

PROPOSED ACCEPT.

---

**Comment:**

alert_detect should also be added to the note

**SuggestedRemedy**

"NOTE—rx_lpi_active and tx_lpi_active are only required for the EEE capability" is changed to "NOTE—alert_detect, rx_lpi_active and tx_lpi_active are only required for the EEE capability"

**Proposed Response**

PROPOSED ACCEPT.

---

The control codes for MultiGBASE-T1 is defined in Table 149-2, not Table 149-1.

**SuggestedRemedy**

Change all references to table of control code from Table 149-1 to Table 149-2, including the list below:

1. Page 58, line 11, Figure 165-6.
2. Page 59, line 10, Figure 165-7.
4. Page 70, line 2.
5. Page 70, line 3.
10. Page 80, line 11.
11. Page 132, line 43.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Changes per text + update PICS as needed.
Proposed Responses

**Comment**

The term L is used in the text here without explanation of what it denotes.

One has to read to the bottom of this subclause to understand what L means and how it is determined.

**Suggested Remedy**

Preferably add text to introduce the concept of interleaving, the definition of L and how it is determined, at the beginning of this subclause, before L is used.

**Proposed Response**

PROPOSED REJECT.

No specific changes were proposed.

---

**Comment**

"The symbol period, T, is 1000 / 14.0625 ps"

This exercise is not very friendly for the reader. The number 14.0625 seems to come out of nowhere (only much later it is found that the signaling rate is 14.0625 Gbd).

The ratio evaluates to 71 + 1/9 ps, and this number can be used instead, since it is expressed as ratio anyway.

Also, this seems to be the nominal period, without the allowed frequency deviation (which is not specified here, but I assume it is per 165.5.3.6).

**Suggested Remedy**

Change to "71 1/9" formatted using equation editor to format the common fraction. Or use "71.111..."

Add "nominal".

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "71 1/9" and add "nominal" to the name of the symbol period.

---

**Comment**

This notation "1000 / 14.0625 ps" can be confusing, even if it is not ambiguous.

**Suggested Remedy**

Change "1000 / 14.0625 ps" to "(1000 / 14.0625) ps"

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #543

---

**Comment**

"the PCS Transmit function shall use a 65B coding technique to generate, at each symbol period, code-groups that represent data or control" - the previous text refers to symbol periods as the period of the PAM4 signalling. A 65B code group does not happen "at each symbol period". The added incorrect phrase does not seem to add any value.

**Suggested Remedy**

delete ", at each symbol period,"

Also, update PICS PCT7 Feature text (P132 L38) deleting the same text

**Proposed Response**

PROPOSED ACCEPT.

---

**Comment**

Here and other places, the term "9360-bit (936, 846) RS-FEC frames" is used. This terminology is incorrect or at least inconsistent with typical terminology. The 9360-bit entity is actually an FEC codeword. An FEC frame consists of multiple FEC codewords.

**Suggested Remedy**

In all instances where the 9360-bit block is referred to as an FEC frame" the term should be changed to FEC "codeword".

**Proposed Response**

PROPOSED ACCEPT.
**Comment Type** E  **Comment Status** D  **Response Status** W

**Wu, Peter**  Marvell

**Comment** What does "RS" mean here? Reconciliation Sublayer or Reed-Solomon Frames

**Suggested Remedy**

After reaching the normal mode of operation, EEE-capable PHYs may enter the LPI transmit mode under the control of the Reconciliation sublayer via the 25GMII.

**Proposed Response** PROPOSED ACCEPT IN PRINCIPLE.

Changed capitalization of "sublayer"

After reaching the normal mode of operation, EEE-capable PHYs may enter the LPI transmit mode under the control of the Reconciliation Sublayer via the 25GMII.

**Comment Status** D  **Response Status** W

**Ran, Adee**  Cisco

**Comment** Both "65-bit" and "65B" used in the text; is there a difference?

**Suggested Remedy**

Use "65-bit" consistently, and remove the "65B" label from the RS-FEC name.

**Proposed Response** PROPOSED ACCEPT.
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

Cl 165 SC 165.3.2.2.4 P59 L44 #673
Zimmerman, George CME Consulting/APL Gp, Cisco, CommScope, Marve

Comment Type E  Comment Status D  165.3.2.2.4 - 165.3.2.2.12

With the exception of deleting a table to reference clause 149, it seems that 165.3.2.2.4 through 165.3.2.2.12 are identical to clause 149. This is as it should be, but is redundant. Suggest referencing clause 149 for the whole thing. In the suggested remedy I have been careful to use 'shall' and 'are' based on whether there is a requirement to reference in the PICS.

Suggested Remedy

Delete 165.3.2.2.4 through 165.3.2.2.12. Replace with:

165.2.2.4 Block structure
The 65-bit block structure specified in 149.3.2.24 is used by 25GBASE-T1, with the block format shown in Figure 149-8. 165.2.2.5 Control codes
The mapping of control characters is used to map the 25GMII and 25GBASE-T1 PCS is as specified for MultiGBASE-T1 PHYs in in 149.3.2.2.5 and shown in Table 149-2. All 25GMII control code values that do not appear in the table shall not be transmitted and shall be treated as an error if received.

165.2.2.6 Ordered sets
The use of Ordered sets is as specified for the MultiGBASE-T1 PHYs in 149.3.2.2.6.

165.2.2.7 Idle (/I)
Idle control characters shall be as specified for MultiGBASE-T1 PHYs in 149.3.2.2.7.

165.2.2.8 LPi (/L)
Low Power Idle control characters shall be as specified for MultiGBASE-T1 PHYs in 149.3.2.2.8.

165.2.2.9 Start (/S)
Start control characters are as specified for MultiGBASE-T1 PHYs in 149.3.2.2.9.

165.2.2.10 Terminate (/T)
Terminate control characters are as specified for MultiGBASE-T1 PHYs in 149.3.2.2.10.

165.2.2.11 Ordered set (/O)
Ordered set control characters shall be as specified for MultiGBASE-T1 PHYs in 149.3.2.2.11.

165.2.2.12 Error (/E)
Error characters are as specified for MultiGBASE-T1 PHYs in 149.3.2.2.12. See R_BLOCK_TYPE and T_BLOCK_TYPE function definitions in 165.3.7.2.4 for further information.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Changes as proposed + update PICS.

Cl 165 SC 165.3.2.2.4 P59 L45 #426
Wienckowski, Natalie General Motors

Comment Type T  Comment Status D  165.3.2.2.4 - 165.3.2.2.12

The Block structure is identical to the MultiGBASE-T1 Block Structure in Clause 49.

Suggested Remedy

Replace the contents of 165.3.2.2.4 with the following:

The block structure used by 25GBASE-T1 is the MultiGBASE-T1 block structure defined in 149.3.2.2.4 with the format as shown in Figure 149-8. The characters in the 65-bit block in Figure 149-8 are either data characters or control characters and, when transferred across the 25GMII interface, the corresponding TXC or RXC bit is set accordingly.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

See comment #673

Cl 165 SC 165.3.2.2.5 P60 L48 #641
McClellan, Brett Marvell

Comment Type E  Comment Status D  EZ
header disconnected from subclause text

Suggested Remedy

insert page break

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 165 SC 165.3.2.2.5 P61 L10 #425
Wienckowski, Natalie General Motors

Comment Type T  Comment Status D  EZ, Table 149-1
The MultiGBASE-T1 Control Codes are in Table 149-2, not Table 149-1.

Suggested Remedy

Change: Table 149-1
To: Table 149-2

Proposed Response Response Status W
PROPOSED ACCEPT.
<table>
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<th>SC 165.3.2.2.5</th>
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<td>incorrect reference to Table 149-1, should be Table 149-2</td>
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**Suggested Remedy**

change Table 149-1 to Table 149-2 on page 61 lines 10 and 19, also change page 58 line 11, also change page 59 line 10, page 70 lines 2 and 3, page 79 lines 25 and 26, page 80 lines 9 and 11. Update associated PICs. If an associated comment to create a new Table 165-2 is accepted, then these references will be to Table 165-2.

**Proposed Response**

PROPOSED ACCEPT.

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<td>using Table 149-2 as a reference has some issues, the column headings are 'XGMII control code', '2.5G/5G/10G BASE-T1 control code', and '2.5G/5G/10G BASE-T1 O code' instead of 25GMII and 25GBASE-T1</td>
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</table>

**Suggested Remedy**

copy Table 149-2 to 165.3.2.2.5 and label as Table 165-2, change the column headers as indicated, and change the reference to Table 165-2.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #673
Similarly, 165.3.2.2.18 through 165.3.2.2.21 are identical to clause 149, and can be referenced. (note I've left EEE capability since this seems to be an area we discuss diverging frequently, and the numbers are different in the wake time table)

**Suggested Remedy**

Replace 165.3.2.2.18 through 165.3.2.2.21 each as follows:
- **165.3.2.2.18 PCS scrambler**
The PCS scrambler operates as specified in 149.3.2.2.18.
- **165.3.2.2.19 Gray mapping for PAM4 encoding**
The PCS transmit process shall map pairs of bits to Gray-coded PAM4 symbols as specified in 149.3.2.2.19.
- **165.3.2.2.20 Selectable precoder**
The PCS transmit process shall precode the Gray-coded PAM4 symbols as specified in 149.3.2.2.20.
- **165.3.2.2.21 PAM4 encoding**
The PCS transmit process shall encode each precoder output symbol as specified in 149.3.2.2.21.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Changes as proposed + update PICS.

**Suggested Remedy**

change "eight RS-FEC frames" to "sixteen RS-FEC frames"

**Proposed Response**

PROPOSED ACCEPT.

See comment #710 for justification.

Comment type changed to non-R due to post-deadline status.

**Suggested Remedy**

change "eight Reed-Solomon frames" to "sixteen Reed-Solomon frames"

**Proposed Response**

PROPOSED ACCEPT.

See comment #710 for justification.

Comment type changed to non-R due to post-deadline status.
It is not stated that the receive function includes undoing the effect of the selected precoding. Precoding is a separate function from PAM4 mapping in Figure 165–6, but it does not appear in Figure 165–7.

The channel description in the precoder options is not sufficient; even if it matches the actual channel, at least a mod4 operation (not trivial) has to be implemented.

**Suggested Remedy**

Add a box "Undo selected precoder" in Figure 165–7.

Add content similar to 165.3.2.2.20 in a subclause under 165.3.2.3 describing the decoding used for each precoder option (e.g., \( G(n)=(P(n)+P(n-1) \mod 4 \) for \( 1+D \)). It can be mentioned that this decoding may be implemented in several ways.

In the second paragraph of 165.3.2.3, change "The received PAM4 symbols are demapped" to "The received PAM4 symbols, after decoding the selected Precoder operation (see <new subclause>), are demapped".

**Proposed Response**

**Response Status:** W

PROPOSED ACCEPT IN PRINCIPLE.

Add a box "Undo selected precoder" in Figure 165–7.

In the second paragraph of 165.3.2.3, change "The received PAM4 symbols are demapped" to "The received PAM4 symbols, after decoding the selected Precoder operation (see <new subclause>), are demapped".

Content similar to 165.3.2.2.20 in a subclause under 165.3.2.3 describing the decoding used for each precoder option (e.g., \( G(n)=(P(n)+P(n-1) \mod 4 \) for \( 1+D \)) was not added, since no specific text was proposed.

There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.

**Suggested Remedy**

Change 16 to 32

**Proposed Response**

**Response Status:** W

PROPOSED ACCEPT.

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

Sleep signal should be composed of 16 RS frames.

**Suggested Remedy**

change "eight RS-FEC frames" to "sixteen RS-FEC frames"

**Proposed Response**

**Response Status:** W

PROPOSED ACCEPT.

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.
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<td>Wake signal should be composed of 16 RS frames</td>
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**SuggestedRemedy**
- change "eight RS-Frames" to "sixteen RS-Frames"

**Proposed Response**
**Response Status** W
- PROPOSED ACCEPT.

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

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<td>Similarly, 165.3.3 through 165.3.4 are identical to clause 149</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**SuggestedRemedy**
- Replace 165.3.3 and 165.3.4 as follows:
  165.3.3 Test-pattern generators
  The test-pattern generator mode shall operate as specified in 149.3.3.
  165.3.4 Side-stream scrambler polynomials
  The PCS Transmit function shall employ side-stream scrambling as specified in 149.3.4.

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

Changes as proposed + update PICS

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<tr>
<td>There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.</td>
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</table>

**SuggestedRemedy**
- Change 16 to 32

**Proposed Response**
**Response Status** W
- PROPOSED ACCEPT.

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

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<tr>
<td>Figure 165-12 is inconsistent with L=8 super frame. There is a general inconsistency in the document due to incorrect definition of 16 partial PHY frames per PHY frame. There should be 32 partial PHY frames per PHY frame, where each PHY frame is 8 RS-FEC frames.</td>
<td></td>
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</table>

**SuggestedRemedy**
- Correct figure 165-12 to use 32 partial PHY frames per PHY frame. Same change needs to be done in every place that assumes 16 partial PHY frames per PHY frame.

**Proposed Response**
**Response Status** W
- PROPOSED ACCEPT.

Comment type changed to non-R due to post-deadline status.
Proposed Responses

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<td>post-deadline, partial frame</td>
<td>There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.</td>
<td>PROPOSED ACCEPT.</td>
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Suggested Remedy
- Change 15 to 31 and 16 to 32nd

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

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Suggested Remedy
- Change 450 to 1170 in line 44 and 45

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

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Suggested Remedy
- Change 17550 to 36270, 17654 to 36365, and 18720 with 37440.

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

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Suggested Remedy
- Change 17550 to 36270, 17654 to 36365, and 18720 with 37440.

See comment #710 for justification

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<tr>
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<tr>
<td>change &quot;eight RS-FEC frames&quot; to &quot;sixteen RS-FEC frames&quot;</td>
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<tr>
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<td>Comment Status: D</td>
<td>post-deadline, EZ</td>
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<td>The description in lines 22-24 is easily misunderstood to imply a sequence of signals, as opposed to two parts of the signal.</td>
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<tr>
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<tr>
<td>Change &quot;The first part of this cycle is known as the quiet period and lasts for a time lpi_quiet_time. The quiet period is defined in 165.3.6.2. The second part of this cycle is known as the refresh period and lasts for a time lpi_refresh_time.&quot; to &quot;The one part of this cycle is known as the quiet period and lasts for a time lpi_quiet_time. The quiet period is defined in 165.3.6.2. The another part of this cycle is known as the refresh period and lasts for a time lpi_refresh_time.&quot;</td>
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<tr>
<td>Minor editorial changes relative to suggested remedy.</td>
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<td>post-deadline, EZ</td>
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<tr>
<td>lpi_offset no longer exists and has been replaced with master and slave specific versions</td>
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<tr>
<td>Suggested Remedy:</td>
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</tr>
<tr>
<td>replace &quot;lpi_offset&quot; with &quot;lpi_master_offset, lpi_slave_offset&quot;</td>
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<td>Proposed Response:</td>
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<td>post-deadline</td>
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<tr>
<td>lpi_offset has been replaced with master and slave version. The values are incorrect, and it is also error prone to restate a value already defined in Table 165-3.</td>
<td></td>
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<tr>
<td>Suggested Remedy:</td>
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</tr>
<tr>
<td>Remove &quot;lpi_offset is a fixed value equal to lpi_cr_time / 2 + 4 (52 RS-FEC frame periods).&quot; OR replace it with &quot;The values for these timing parameters are given in Table 165-3.&quot;</td>
<td></td>
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<tr>
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<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
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<tr>
<td>Remove &quot;lpi_offset is a fixed value equal to lpi_cr_time / 2 + 4 (52 RS-FEC frame periods).&quot;</td>
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<tr>
<td>The location of the slave refresh signal is incorrect or misleading in the Figure 165-13. It should be at location 42, not 43 (see Table 165-3)</td>
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<tr>
<td>Redraw location of slave refresh signal at location 42</td>
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<tr>
<td>PROPOSED ACCEPT.</td>
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</table>
The location of the slave refresh signal is incorrect or misleading in the Figure 165-14. It should be at location 42, not 43 (see Table 165-3).

Suggested Remedy:
Redraw location of slave refresh signal at location 42.

PROPOSED ACCEPT.

There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.

Suggested Remedy:
Change "PHY frame" to "RS-FEC frame" in lines 15 and 16.

PROPOSED ACCEPT.

Comment type changed to non-R due to post-deadline status.

Replace the text of 165.3.7.2.1 Constants with:
"The PCS state diagram constants are as defined in 149.3.7.2.1 with the exception that 25GMII replaces XGMII."

Replace the text of 165.3.7.2.2 Variables with:
"The PCS state diagram variables are as defined in 149.3.7.2.3 with the exception that 25GMII replaces XGMII and the following modifications:
Reference to 149.4.4.1 is replace by 165.4.4.1.*

Replace the text of 165.3.7.2.3 Timers with:
"The PCS timers are as defined in 149.3.7.2.3 with the exception that 25GMII replaces XGMII and the following modified definitions:
rfer_timer
Timer that is triggered every 12.5 μs ±1%. When the timer reaches its terminal count, rfer_timer_done = TRUE.*

Replace the text of 165.3.7.2.4 Functions with:
"The PCS functions are as defined in 149.3.7.2.4 with the exception that 25GMII replaces XGMII and the following modifications:
Reference to 149.3.2.2.2 is replace by 165.3.2.2.2.*

Replace the text of 165.3.7.2.5 Counters with:
"The PCS counters are as defined in 149.3.7.2.5.*
In 165.3.7.3 delete Figure 165–16, Figure 165–17, Figure 165–18 and Figure 165–19 and replace all references these figures with Figure 149–16 Figure 149–17, Figure 149–18 and Figure 149–19.

PROPOSED ACCEPT.
The constant name "RFER_CNT_LIMIT" is longer than the value it holds, and is more obscure. Wherever it is used in the text or in diagrams, it would be easier for the reader to understand if the number 16 was used instead (the number 16 is already used in some places, so the merit of having a constant is questionable).

Similarly for RFRX_CNT_LIMIT (88).

Suggested Remedy
Replace instances of RFER_CNT_LIMIT with 16, and instances of RFRX_CNT_LIMIT with 88, and delete the constant definitions.

PROPOSED REJECT.
Introducing obscure and undefined numbers is less transparent than having constants with definitions.

Is the list on this page supposed to be in strictly alphabetical order? If so, rf_valid should be moved

Suggested Remedy
If strictly alphabetical order is intended on this page and the next page, it should be cleaned up

Proposed Response
PROPOSED ACCEPT IN PRINCIPLE.

Align the order of the variable definitions alphabetically.

Sleep signal should be composed of 16 RS frames

Suggested Remedy
change "eight RS-FEC frame" to "sixteen RS-FEC frame"

Proposed Response
PROPOSED ACCEPT.

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.
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<td>RX_FRAME includes unreliable Wake frames.</td>
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<td>Add to the end of the description: “If the optional EEE is supported, RX_FRAME shall be FALSE during the first 8 WAKE frames.”</td>
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<td>It seems that only few of the status variables defined in 54.2.1 are listed here.</td>
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<td>Among the ones listed, the LPI variables seem unnecessary, since the LPI real-time status in both directions is conveyed over the 29GMII.</td>
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<td>Also, control variables are not listed; management interface should include at least reset, test modes, interleaving and precoding request to the link partner, and loopback mode.</td>
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<td>The presence of a loopback function should be listed as part of the PCS functions, not as part of the PCS management, which typically only lists control variables and register mappings.</td>
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<td>165.3.2.2 (PCS Transmit function) currently does not even mention that the transmit function can be fed by the receive function.</td>
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Type: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
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Sort Order: Clause, Subclause, page, line
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**COMMENT STATUS:** D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

**SORT ORDER:** Clause, Subclause, page, line

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**Comment:** There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.

**SuggestedRemedy:** Change "16th" to "32nd", 17550 to 36270, and 17645 to 36365

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

See comment #710 for justification

Comment type changed to non-R due to post-deadline status.

---

**Comment:** There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.

**SuggestedRemedy:** Change "16th" to "32nd", 17550 to 36270, and 17645 to 36365

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

---

**Comment:** Here "Octet x" (x=1 to 3) but in subsequent subclauses it is "Octx" (x=4 and above).

**SuggestedRemedy:** Change to be consistent, one way or another.

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

---

**Comment:** There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.

**SuggestedRemedy:** Change "16th" to "32nd", 17550 to 36270, and 17645 to 36365

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

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**Comment:** There should be 32 partial PHY frames per PHY frame, where each PHY frame has 8 RS-FEC frames.

**SuggestedRemedy:** Change "16th" to "32nd", 17550 to 36270, and 17645 to 36365

**Proposed Response**  **Response Status W**  **PROPOSED ACCEPT.**
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<td>471</td>
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<td>Tu, Mike</td>
<td>Broadcom</td>
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<tr>
<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Change this sentence to: &quot;When the value of DataSwPFC24 is a multiple of 32 the switch from PAM2 to PAM4 occurs on a PHY frame boundary.&quot;</td>
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<tr>
<td><strong>PROPOSED ACCEPT.</strong></td>
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<tr>
<td>165</td>
<td>165</td>
<td>46</td>
<td>51</td>
<td>721</td>
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<td>Jonsson, Ragnar</td>
<td>Marvell</td>
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<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
<td>D</td>
<td>post-deadline, partial frame</td>
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<tr>
<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Change 16 to 32.</td>
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<td><strong>PROPOSED ACCEPT.</strong></td>
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<tr>
<td>See comment #710 for justification</td>
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<td>Comment type changed to non-R due to post-deadline status.</td>
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### Proposed Responses

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<th>L</th>
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<th>Comment Status</th>
<th>SuggestedRemedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Comment Status</th>
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<tbody>
<tr>
<td>165</td>
<td>165.4.2.4.10</td>
<td>P 96</td>
<td>L 5</td>
<td>T</td>
<td>D</td>
<td>The 40ms for half-duplex is too long.</td>
<td>change 40ms to 30ms</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
</tr>
<tr>
<td>165</td>
<td>165.4.2.4.10</td>
<td>P 96</td>
<td>L 5</td>
<td>T</td>
<td>D</td>
<td>The 40ms mandatory half-duplex transmission is too long.</td>
<td>change 40ms to 30ms</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
</tr>
<tr>
<td>165</td>
<td>165.4.2.4.10</td>
<td>P 96</td>
<td>L 5</td>
<td>T</td>
<td>D</td>
<td>The 40ms for half-duplex is too long.</td>
<td>change 40ms to 30ms</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
</tr>
</tbody>
</table>

**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  O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn

**Response Status**: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
Comment Type: T  Comment Status: D

"The frequency of the SEND_S signal shall be 703.125 MHz"

It is probably the nominal signaling rate, or the nominal frequency of the clock driving the "signal" (which we typically call "pattern").

The frequency can be within the range defined in 165.5.3.6.

Suggested Remedy

Change "The frequency of the SEND_S signal shall be" to "The nominal signaling rate of the SEND_S signal is".

Consider changing "signal" to "pattern".

Proposed Response  Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

Remove PICS as needed.

Comment Type: E  Comment Status: D

98.5.1 is in the draft

Suggested Remedy

Change "98.5.1" to black and make it a hyperlink.
Also P98L24, P98L27

Proposed Response  Response Status: W

PROPOSED ACCEPT.
<table>
<thead>
<tr>
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<th>Comment Status</th>
<th>Proposed Response</th>
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<th>Suggested Remedy</th>
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<tr>
<td>165</td>
<td>165.4.3.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
<td></td>
<td>change 'quietre' to 'quiet'</td>
</tr>
<tr>
<td>165</td>
<td>165.4.3.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
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</tr>
<tr>
<td>165</td>
<td>165.4.3.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
<td></td>
<td>Change &quot;quiet fresh signalling&quot; to &quot;quiet refresh signalling&quot;</td>
</tr>
<tr>
<td>165</td>
<td>165.4.3.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
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</tr>
<tr>
<td>165</td>
<td>165.4.4.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
<td></td>
<td>NOTE—The variables link_control and link_status are designated as link_control_mGigT1 and link_status_mGigT1, respectively, by the Auto-Negotiation Arbitration state diagram (Figure 98–7) if the optional Auto-Negotiation function is implemented. -&gt; NOTE—The variables link_control and link_status are designated as link_control_25GigT1 and link_status_25GigT1, respectively, by the Auto-Negotiation Arbitration state diagram (Figure 98–7) if the optional Auto-Negotiation function is implemented.</td>
</tr>
<tr>
<td>165</td>
<td>165.4.5</td>
<td>E</td>
<td>D</td>
<td>typo</td>
<td></td>
<td>_mGigT1 should be replaced with_25GigT1</td>
</tr>
<tr>
<td>165</td>
<td>165.4.4.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
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<td>PROPOSED REJECT.</td>
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<tr>
<td>165</td>
<td>165.4.4.1</td>
<td>E</td>
<td>D</td>
<td>typo</td>
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<td>165.4.4.1</td>
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<td>D</td>
<td>typo</td>
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<td>165.4.4.1</td>
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<td>D</td>
<td>typo</td>
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<td>165</td>
<td>165.4.5</td>
<td>E</td>
<td>D</td>
<td>typo</td>
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<td>PROPOSED ACCEPT.</td>
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</tbody>
</table>
Proposed Responses

Cl 165  SC 165.5      P 107  L 1  # 556
Ran, Adee Cisco
Comment Type  E  Comment Status  D  PMA definition structure
Shouldn't PMA electrical specifications be under the PMA main subclause (165.4)?

SuggestedRemedy
- Consider moving the hierarchy of 165.5 to become 165.4.6.

Proposed Response  
PROPOSED ACCEPT.

Cl 165  SC 165.5.1  P 107  L 5  # 557
Ran, Adee Cisco
Comment Type  T  Comment Status  D  PMA definition structure
- Test modes are functional specifications, and should be defined under 165.4.2.2 (they override the normal transmit functionality defined there).

SuggestedRemedy
- Move 165.5.1 to become 165.4.2.2.2.
- Add a reference to the test modes to 165.4.2.2 (which currently only has normal operation mode or transmit zero).

Proposed Response  
PROPOSED ACCEPT.

Cl 165  SC 165.5.1  P 107  L 37  # 658
Ran, Adee Cisco
Comment Type  T  Comment Status  D
"... the PHY shall provide access to a frequency reduced version of the transmit symbol clock or TX_TCLK_879"
- "reduced version" and "or" are unclear.
- "TX_TCLK_879 is equal to 878.90625 MHz"
- A clock is not equal to its frequency. And this is and exact value with no tolerance.

SuggestedRemedy
- Change to "the PHY shall provide access to a frequency-divided version of its transmit symbol clock, with divisor 16, referred to as TX_TCLK_879. The nominal frequency of TX_TCLK_879 is 878.90625 MHz".

Proposed Response  
PROPOSED ACCEPT IN PRINCIPLE.
- Changes per comment. Update PICS as needed.

Cl 165  SC 165.5.1  P 107  L 38  # 515
Grow, Robert RMG Consulting
Comment Type  E  Comment Status  D  EZ
IEEE Style Manual 16.3.2 also says to use space separators to the right of the decimal point.

SuggestedRemedy
- If not changed to 0.878 906 25 GHz, should be 878.906 25 MHz.

Proposed Response  
PROPOSED REJECT.
- This is an IEEE 802.3 exception to the IEEE style manual. 
https://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#numbers
- In text, where this improves clarity, follow the IEEE Editorial Style Manual: Use spaces instead of commas between numbers in tens or hundreds of thousands (e.g., 62 000, 100 000, but 4000).
- Digits to the right of the decimal point.
- Do not include any separators in the digits to the right of the decimal point or include any trailing zeros in tables or in text.<<
<table>
<thead>
<tr>
<th>Cl</th>
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<th>Prop</th>
<th>Ran, Adee</th>
<th>Cisco</th>
</tr>
</thead>
<tbody>
<tr>
<td>165</td>
<td>165.5.1</td>
<td>108</td>
<td>8</td>
<td>559</td>
<td>Proposed Response</td>
<td>Test mode 7 is for enabling measurement of the bit error ratio of the link including the RS-FEC encoder/ decoder, transmit and receive analog front ends of the PHY, and a cable connecting two PHYs. The description in the remainder of this paragraph implies that what is actually measured is the RS-FEC block error ratio (rfer), not the BER; each errored block is counted as an error once, not as the number of nonzero bits. Also, when performing such a test, there are typically two PHYs involved, not just one. Although the test mode is defined for a transmitter in one PHY, the rfer can only be measured in a receiver of the other PHY.</td>
<td>Proposed Accept.</td>
</tr>
<tr>
<td>165</td>
<td>165.5.1.1</td>
<td>108</td>
<td>14</td>
<td>560</td>
<td>Proposed Response</td>
<td>The figures seem to show test setups of transmitters or receivers, with external measurement instruments. These are not test fixtures - which are sometimes part of test setups (see for example Figure 97B–2, Figure 97B–3, Figure 93–5). This clause actually has specified test fixtures in 165.5.5. I found the uses of “test fixture” in this context in clause 149, but this error should not be perpetuated.</td>
<td>Proposed Accept.</td>
</tr>
<tr>
<td>165</td>
<td>165.5.1.1</td>
<td>109</td>
<td>3</td>
<td>561</td>
<td>Proposed Response</td>
<td>Why is a balun required for measuring transmitter jitter? The test setup in figure 165-30 seems sufficient, and there is no need to specify a different one; if anyone wants to use a single-ended scope they can do so with a balun - this would arguably be an equivalent setup.</td>
<td>Proposed Reject.</td>
</tr>
</tbody>
</table>
Proposed Responses

Fischer, Peter  
BKS Kabel-Service AG

Comment Type T  Comment Status D
Output of the balun should be specified

Suggested Remedy
- Define output impedance for the balun in relation to the Spectrum analyser

Proposed Response  Response Status W
- PROPOSED REJECT.

No specific value was proposed by the commenter. The test figures in 165.5.1.1 are taken from 149.5.1.1 IEEE Std 802.3-2022.

Wienckowski, Natalie  
General Motors

Comment Type T  Comment Status D
As only 1 pair is used, we don't need a subscript on the lines.

Suggested Remedy
- In Figure 165-34, remove subscript "i" from SL<i>, SL<n>, Signal <i>, Signal<n>, DL<i>, and DL<n>.

Proposed Response  Response Status W
- PROPOSED ACCEPT.

Jonsson, Ragnar  
Marvell

Comment Type T  Comment Status D
Reference to laning is probably obsoleted, given that 802.3cy no longer supports 50Gbps and 100Gbps.

Suggested Remedy
- Remove reference to laning

Proposed Response  Response Status W
- PROPOSED ACCEPT IN PRINCIPLE.

See comment #435
**Proposed Responses**

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<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
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<tr>
<td>165</td>
<td>165.5.3</td>
<td>110</td>
<td></td>
<td># 569</td>
<td>T</td>
<td>D</td>
<td>It seems odd that a transmitter operating above 14 GBd with a channel that can have an insertion loss of almost 30 dB at the Nyquist frequency, has no specification of transition time, and no option or specification for transmitter equalization (pre-emphasis). In high-speed backplane and copper cable PHYs, transition time and Tx equalization are among the important Tx parameters; without specifying them, a slow transmitter over a high-loss channel can create a large precursor ISI at the receiver input. Such ISI is not easily handled by the analog front end, and can impact the linearity of receiver circuits, in addition to placing unnecessary equalization burden on receivers (it is much cheaper in power and area to implement Tx equalization than Rx equalization).</td>
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<td></td>
<td>T</td>
<td>D</td>
<td>Consider adding a specification for transmitter maximum transition time (a possible limit can be 60 ps for 20% to 80%, as in 130.7.1, or maybe lower). Consider adding a precursor equalization function to the transmitter; see 130.7.1.10 for an example of how this can be specified.</td>
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<td>W</td>
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<td>D</td>
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<td></td>
<td>E</td>
<td>Remove this single sentence paragraph OR amend it such that its meaning becomes clear.</td>
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<td>D</td>
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**Comment Status:** D/dispatched  A/accepted  R/rejected  
**Response Status:** O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

Proposed Response

Cl 165 SC 165.5.3.3 P 110 L 25 # 564
Ran, Adee Cisco
Comment Type T Comment Status D EZ
"Time Interval Error" - capitalization is not needed.
Also in 165.5.3.3.1 (line 36).

Suggested Remedy
Change to lower case.

Proposed Response
Response Status W
PROPOSED ACCEPT.

Cl 165 SC 165.5.3.4 P 112 L 25 # 559
John Abbott Corning Incorporated
Comment Type T Comment Status D EZ
In comparing equations 165-12 and 165-13 to clause 149, it seems to me that the lower frequency limit "5" in equation 165-13 should scale as one goes from 2.5 to 5 to 10 to 25Gb/s, since every other limit in clause 165 is the 149 limits x 2.5 (i.e. 25Gb/s = 2.5 * 10Gb/s). However, "5" was used in clause 149 for 2.5,5,10.

Suggested Remedy
scale "5 MHz" in 165-13 if appropriate. Thank you!

Proposed Response
Response Status W
PROPOSED REJECT.

Unclear what the actual issue is. Equation 165-13 is already defined from 5 MHz up.

Cl 165 SC 165.5.3.6 P 110 L 37 # 567
Ran, Adee Cisco
Comment Type T Comment Status D EZ
Is there no specification for the Tx clock frequency of the SLAVE PHY?
At the minimum, the short-term rate of variation of the SLAVE transmitter when the MASTER is in LPI mode should be specified - just as it is specified for the MASTER (and for similar reasons) - likely, the same maximum rate can be used.
It may also be helpful to state that when the master is not in LPI transmit mode, the SLAVE PHY frequency is equal to that of the MASTER due to loop timing.

Suggested Remedy
Per comment

Proposed Response
Response Status W
PROPOSED REJECT.

No changes to text proposed.

Cl 165 SC 165.5.4.1 P 110 L 52 # 568
Ran, Adee Cisco
Comment Type T Comment Status D
BER can't be 1e-12 after RS-FEC decoding (As stated in some other comments), and especially it can't be a "shall" on the receiver's input signals...
Also in 165.5.4.2.

Suggested Remedy
Change BER to RS-FEC frame error rate, with the appropriate value.
Change "shall be received" to "are expected to be decoded".

Proposed Response
Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Change "shall be received" to "are expected to be decoded". Update PICS as needed.
<table>
<thead>
<tr>
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<th>P</th>
<th>L</th>
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<th>Comment Status</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Suggested Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>165</td>
<td>165.5.4.2</td>
<td>114</td>
<td>19</td>
<td>E</td>
<td>D</td>
<td>Add an arrow between Differential directional coupler and Receiver and mark is as &quot;&lt;0.5m&quot;</td>
<td>W</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>Cl 165 SC 165.5.5</td>
<td>P 114 L 35</td>
<td>#</td>
<td>734</td>
<td>EZ</td>
<td>Comment Type</td>
<td>T</td>
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<td>Comment Status</td>
<td>D</td>
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<td>Cl 165 SC 165.5.5.1</td>
<td>P 114 L 50</td>
<td>#</td>
<td>723</td>
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<td>Suggested Remedy</td>
<td>PROPOSED ACCEPT.</td>
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<td>Unless there is specific meaning in multiplying with the exact number 0.3334, it would be better to include this multiplication in the coefficients of the equation, or alternatively use divide by 3.</td>
<td>Change 0.09144 to 0.03048, 0.51054 to 0.17018, and remove &quot;x0.3334&quot; in equation (165-15). Same change should be made to equation (165-16), if it is not removed (see separate comment).</td>
<td>PROPOSED ACCEPT.</td>
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<td>Cl</td>
<td>SC</td>
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<td>Proposed Responses</td>
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<td>3</td>
<td>Wienckowski, Natalie</td>
<td>General Motors</td>
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<td>165</td>
<td>165.5.5.2</td>
<td>115</td>
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<td>Jonsson, Ragnar</td>
<td>Marvell</td>
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<td>165</td>
<td>165.7</td>
<td>118</td>
<td>4</td>
<td>Ran, Adee</td>
<td>Cisco</td>
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</tbody>
</table>

**Comment Type**: E (Editorial)  **Comment Status**: D (Dispatched)  **Response Status**: W (Written)

**Comment**: Change: The reference insertion loss of the TP2 or TP3 test fixtures

**Suggested Remedy**
- Change: The reference insertion loss of the TP2 or TP3 test fixtures
- To: The reference insertion loss at TP2 or TP3 of the HTF
- Proposed Response: Response Status: W (Written)
- PROPOSED ACCEPT.

**Comment Type**: E (Editorial)  **Comment Status**: D (Dispatched)  **Response Status**: W (Written)

**Comment**: Equation (165-16) is identical to (165-15), apart from subscript of "lsthfref" instead of "htfref".

**Suggested Remedy**
- Eliminate equation (165-16) and change "htfref" in equation (165-15) to "tfref"
- Proposed Response: Response Status: W (Written)
- PROPOSED ACCEPT.

**Comment Type**: T (Technical)  **Comment Status**: D (Dispatched)  **Response Status**: W (Written)

**Comment**: The first sentence says "single shielded balanced pair of conductors", the second says "single pair of shielded, balanced conductors".

**Suggested Remedy**
- Either use consistent language, or say it once.
- I assume it is the pair that is shielded (not each conductor), and it is also balanced.
- "Single" goes without saying because it is "pair", not "pairs".
- Also, the term "link segment" appears in the heading but not in the text.
- Proposed Response: Response Status: W (Written)
- PROPOSED ACCEPT.

**Comment Type**: E (Editorial)  **Comment Status**: D (Dispatched)  **Response Status**: W (Written)

**Comment**: The subscript "MHz" is inconsistent with other notations for "f" in this section, and it is inconsistent with line 23 and the first use of "f" in equation (165-23).

**Suggested Remedy**
- Remove the subscript "MHz" from "f" in equation (165-23)
- Proposed Response: Response Status: W (Written)
- PROPOSED ACCEPT.
<table>
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<tr>
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<th>Comment Type</th>
<th>Comment Status</th>
<th>Response Status</th>
<th>Proposed Response</th>
<th>Reason</th>
</tr>
</thead>
</table>
| Cl 165 SC 165.7.1.1 P 118 L 18 | 165 | 118 | 18 | E | D | | | In equation 165-23, f is defined "in MHz", so there is no need to have "MHz" in the equation; f_MHz is undefined.  
**Suggested Remedy**  
Change "f_MHz" to "f" in the equation.  
**PROPOSED ACCEPT.** |
| Cl 165 SC 165.7.1.1 P 118 L 22 | 165 | 118 | 22 | T | D | | | In comparing section 165.7 in clause 165 to section 149.7 in clause 149, clause 149 has a max frequency Fmax = 4000*S (equation 149-17) where S=1 for 10Gb/s and S would = 2.5 for 25Gb/s. Hence clause 149 would lead one to think clause 165 should have Fmax=2.5*4000 = 10,000MHz., rather than 9000MHz in equation 165-23 and elsewhere.  
**Suggested Remedy**  
Change 9000 to 10,000 in section 165.7.1.1 and elsewhere as appropriate (if there is a reason to use 9000 instead of 10,000 -- maybe that number should be even lower ?) Thank you!  
**Proposed Response**  
**PROPOSED ACCEPT.** |
| Cl 165 SC 165.7.1.1 P 118 L Figure | 165 | 118 | Figure | E | D | | | X-Axes Grid is very dense.  
**Suggested Remedy**  
Using a frequency step of 500 MHz for the grid instead of 250 MHz.  
**Proposed Response**  
**PROPOSED ACCEPT.** |
The differential characteristic impedance should apply to the insertion loss specification, so it should appear before 165.7.1.1.

This statement does not need a standalone subclause, it can be added to 165.7.1.

Also, the statement is repeated in 165.7.1.3.1.

**Suggested Remedy**
Move the content of this subclause to 165.7.1 and delete this subclause heading.

Delete the sentence "The reference impedance for the return loss specification is 100 Ω" in 165.7.1.3.1.

**Proposed Response**
PROPOSED ACCEPT.

The term "Return loss" is strictly adequate for the content of 165.7.1.3.1.

The other subclauses under 165.7.1.3 discuss parameters that are dependent on reflections as well as insertion loss between them, so they should not be grouped under "Return loss". This hierarchy should be flattened.

**Suggested Remedy**
Delete the subclause heading of 165.7.1.3.1, merging its content into 165.7.1.3 "Return loss".

Promote subclauses 165.7.1.3.2 through 165.7.1.3.4 in the hierarchy to become 165.7.1.4 through 165.7.1.6.

**Proposed Response**
PROPOSED ACCEPT.
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

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<tr>
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<tr>
<td>165</td>
<td>165.7.1.3.2</td>
<td>E</td>
<td>D</td>
<td>Change &quot;Noise&quot; to &quot;noise&quot;.</td>
<td>W</td>
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<td></td>
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<td>PROPOSED ACCEPT.</td>
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</table>

Comment: the word "Noise" should not be capitalized.

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<tr>
<td>165</td>
<td>165.7.1.3.2</td>
<td>E</td>
<td>D</td>
<td>The table needs a title.</td>
<td>W</td>
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<td>PROPOSED ACCEPT.</td>
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</table>

Comment: The title of Table 165-15 seems like a placeholder.

<table>
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<th>Comment Status</th>
<th>Proposed Response</th>
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<tbody>
<tr>
<td>165</td>
<td>165.7.1.3.2</td>
<td>T</td>
<td>D</td>
<td>What is K in equation 165-27?</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Table 165-15 has N but not K. Should it be N?</td>
<td></td>
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<tr>
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<td></td>
<td>Correct if necessary.</td>
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See comment #439

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<td>165</td>
<td>165.7.1.3.2</td>
<td>T</td>
<td>D</td>
<td>Use an appropriate title.</td>
<td>W</td>
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<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
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See comment #439

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<tbody>
<tr>
<td>165</td>
<td>165.7.1.3.2</td>
<td>E</td>
<td>D</td>
<td>The word &quot;Noise&quot; should not be capitalized.</td>
<td>W</td>
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<td></td>
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<td>PROPOSED ACCEPT.</td>
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</tbody>
</table>

Comment: the word "Noise" should not be capitalized.
Proposed Responses

**Comment Type E Comment Status D**

Equations 165-30, 165-31, 165-33 may need some tidying up - some letters are too small to be seen, others (like the subscript k in 165-31) are too large. The Sigma signs are too small and unaligned with the rest of the equations.

**Suggested Remedy**

Improve if possible

**Proposed Response**

Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

Editor will attempt to increase the equation size. They were already drawn as large equations at this time.

---

**Comment Type E Comment Status D**

Equation variable hn should be formatted as in the equation.

Also for Pr in step 4

**Suggested Remedy**

Apply italic and subscript formats as necessary.

**Proposed Response**

Response Status: W

PROPOSED ACCEPT.

---

**Comment Type E Comment Status D**

Equation variable hn should be subscript.

**Suggested Remedy**

Change "n" in "hn" to subscript

**Proposed Response**

Response Status: W

PROPOSED ACCEPT.
Proposed Responses

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<td>122</td>
<td>21</td>
<td>701</td>
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<tr>
<td>Jonsson, Ragnar</td>
<td>Marvell</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td><strong>Comment Status</strong> D</td>
<td>post-deadline</td>
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<tr>
<td>The &quot;RE_k&quot; value in (165-38) is different from the &quot;RE_k&quot; value defined in (165-32), which is both misleading an confusing. It would be more appropriate to use &quot;PE_k&quot; for partial echo response.</td>
<td></td>
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<td><strong>Suggested Remedy</strong></td>
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</tr>
<tr>
<td>Change &quot;RE_k&quot; in (165-38) to &quot;PE_k&quot;</td>
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<td><strong>Proposed Response</strong></td>
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<td><strong>Response Status</strong> W</td>
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<tr>
<td>PROPOSED ACCEPT.</td>
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Comment type changed to non-R due to post-deadline status.

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<td>122</td>
<td>24</td>
<td>584</td>
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<td>Ran, Adee</td>
<td>Cisco</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comment Type</strong> T</td>
<td><strong>Comment Status</strong> D</td>
<td>EZ</td>
<td></td>
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<tr>
<td>Missing value in the third case of equation 165-38. I assume the value should be 0.</td>
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<tr>
<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Add &quot;0&quot; for the third case.</td>
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<td><strong>Proposed Response</strong></td>
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<tr>
<td><strong>Comment Type</strong> T</td>
<td><strong>Comment Status</strong> D</td>
<td>g_n^m</td>
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<tr>
<td>Step 8 mentions &quot;partial response g_n^m&quot; but I don't see where that is defined.</td>
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<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Add a reference to where g_n^m is defined, or define it if it isn't.</td>
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<td><strong>Proposed Response</strong></td>
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<td>165.7.1.3.3</td>
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<td>29</td>
<td>586</td>
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<td>Cisco</td>
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<td><strong>Comment Type</strong> T</td>
<td><strong>Comment Status</strong> D</td>
<td>EZ</td>
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<tr>
<td>Unnecessary capitalization in &quot;Residual Echo Metric&quot;. Also, the acronym REM has already been introduced in 165.7.1.3.2.</td>
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<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Remove the unnecessary capitalization and delete &quot;(REM)&quot;.</td>
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<td><strong>Proposed Response</strong></td>
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<tr>
<td>PROPOSED ACCEPT.</td>
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</tbody>
</table>
Comment: Unnecessary capitalization in "Echo Tail Metric". Also, the acronym ETM should be defined where it is first used in text, which is in step 8 of 165.7.1.3.2.

Suggested Remedy:
- Remove the unnecessary capitalization and delete "(ETM)".
- In step 8 of 165.7.1.3.2, change "The ETM(m) is this REM" to "The echo tail metric (ETM) of segment m, ETM(m), is this REM".

Proposed Response: PROPOSED ACCEPT.

Comment: The text is about ETM but the equation has REM(N_discard), and no ETM limit is defined.

Suggested Remedy:
- Correct as necessary.

Proposed Response: PROPOSED REJECT.

Comment: "The coupling attenuation is illustrated in Figure 165–42" Figure 165-42 does not illustrate a coupling of any link segment. It illustrates the limit imposed by equation 165-41.

Suggested Remedy:
- Change "the 25GBASE-T1 link segment shall meet the coupling attenuation values determined by using Equation (165–41)" to "the coupling attenuation of a 25GBASE-T1 link segment shall meet the coupling attenuation in Equation (165–41) as illustrated by Figure 165-42".
- In the figure add a label "meets equation constraints" below the curve, and change the title to "Link segment coupling attenuation limit".

Proposed Response: PROPOSED ACCEPT.

Comment: Annex 165A does not define the Coupling and screening attenuation test methodology. As this is the same as it was for Clause 149, Annex 149A should be referenced.

Suggested Remedy:
- Change: Annex 165A
- To: Annex 149A (This should be in green with no hyperlink.)
- Also P124L2

Proposed Response: PROPOSED ACCEPT.
Proposed Responses

**Comment**: X-Axes Grid is very dense.

**Suggested Remedy**
Using a frequency step of 500 MHz for the grid instead of 250 MHz.

**Proposed Response**
PROPOSED ACCEPT.

---

**Comment**: The screening attenuation should be defined up to 9GHz

**Suggested Remedy**
Change "4000" to "9000".

**Proposed Response**
PROPOSED ACCEPT.

---

**Comment**: Many other specifications in subclause 165.7 cover bandwidth up to 9000MHz. That includes for example 165.7.1.4 Coupling attenuation. Is there a reason why the screening attenuation should be specified "only" in range up to 4000 MHz?

**Suggested Remedy**
Consider if screening attenuation could be / should be specified up to 9000MHz.

**Proposed Response**
PROPOSED ACCEPT.

---

**Comment**: The max link delay should be scaled for 11 meters, vs the original 15 meters in 802.3cy

**Suggested Remedy**
change 94ns to 69ns

**Proposed Response**
PROPOSED ACCEPT.

---

**Comment**: Incorrect reference, 165C.5 doesn't exist.

**Suggested Remedy**
Change: 165C.5
To: 165A.5

**Proposed Response**
PROPOSED ACCEPT.
**Proposed Responses**

**IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments**

**Proposal for 165 SC 165.7.2.1 P124 L25 #442**

**Comment Type** T  **Comment Status** D  **Response Status** EZ

**Wienckowski, Natalie**
General Motors

The frequency range used needs to be changed.

**Suggested Remedy**

Change: The power ANEXT loss is derived using Equation (97–25).

To: The PSANEXT loss is derived using Equation (97–25) over the frequency range defined for Equation (165-42).

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

PROPOSED ACCEPT.

**Proposal for 165 SC 165.7.2.1 P124 L35 #474**

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

**Zimmerman, George**
CME Consulting/APL Gp, Cisco, CommScope, Marve

The upper frequency for ANEXT and AFEXT should be at least as high as with the link segment upper frequency.

**Suggested Remedy**

Change 4000 to 9000 on P124 L35 and P126 L6. (equations 165-42 and 165-43)

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

PROPOSED ACCEPT.

**Proposal for 165 SC 165.7.2.2 P125 L1 #589**

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

**Ran, Adee**
Cisco

"PSANEXT is illustrated in Figure 165–43"

Figure 165-43 does not illustrate any PSA. It illustrates the limit imposed by equation 165-42.

Also for PSAACRF in 165.7.2.2.

Also for MDI return loss in 165.8.2.1.

**Suggested Remedy**

"shall meet the values determined using Equation (165–42)"

"shall meet Equation (165–42) as illustrated by Figure 165-43."

In the figure add a label "meets equation constraints" below the curve, and change the title to "PSANEXT limit".

Delete the quoted sentence.

Apply similarly in 165.7.2.2 and in 165.8.2.1, with appropriate adjustments.

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

PROPOSED ACCEPT IN PRINCIPLE.

Changes per comment. Update PICS as needed.

**Proposal for 165 SC 165.7.2.2 P125 L36 #443**

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

**Wienckowski, Natalie**
General Motors

The frequency range used needs to be changed.

**Suggested Remedy**

Change: The power AACRF is derived using Equation (97–27).

To: The PSAACRF is derived using Equation (97–27) over the frequency range defined for Equation (165-43).

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

PROPOSED ACCEPT.
**Proposed Responses**

---

**Comment Type** | **Comment Status** | **Response Status**
--- | --- | ---
T | D | W

**Comment**

"The 25GBASE-T1 return loss is illustrated in Figure 165–41"

**Figure**

Figure 165-41 does not illustrate a return loss of any link segment. It illustrates the limit imposed by equation 165-24.

**Suggested Remedy**

- Change "each 25GBASE-T1 link segment pair shall meet the values determined by using Equation (165–24) at all frequencies from 30 MHz to 9000 MHz" to "the return loss of a 25GBASE-T1 link segment shall meet Equation (165–24) as illustrated in Figure 165-44".
- In the figure add a label "meets equation constraints" below the curve, and change the title to "Link segment return loss limit".
- Delete the quoted sentence.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Changes per comment. Update PICS as needed.

---

**Comment Type** | **Comment Status** | **Response Status**
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E | D | EZ

**Comment**

Unnecessary capitalization in "Echo Tail and Residual Echo Metrics". Also "Noise" in the subclause text.

**Suggested Remedy**

- Remove the unnecessary capitalization.

**Proposed Response**

PROPOSED ACCEPT.

---

**Comment Type** | **Comment Status** | **Response Status**
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T | D | W

**Comment**

"The PSANEXT should be defined up to 9GHz"

**Suggested Remedy**

- Expand Figure 165-43 from 4000MHz to 9000MHz.

**Proposed Response**

PROPOSED ACCEPT.

---

**Comment Type** | **Comment Status** | **Response Status**
--- | --- | ---
T | D | W

**Comment**

"The PSAACRF should be defined up to 9GHz"

**Suggested Remedy**

- Expand Figure 165-44 from 4000MHz to 9000MHz.

**Proposed Response**

PROPOSED ACCEPT.
Proposed Responses

Cl 165 SC 165.8.2.1 P 126 L 7 # 458

Brychta, Michal Analog Devices

Comment Type T Comment Status D 10G

The MDI return loss here is specified up to 10000 MHz. Most of the specifications in subclause 165.7 use frequency range up to 9000MHz. May it be better to unify the relevant frequency range upper end in 165.7 and 165.8 on the same number, or is there a reason why they should be different?

Suggested Remedy

Use for relevant 165.7 and 165.8 specifications frequency range either up to 9000MHz, or up to 10000MHz.

Proposed Response Response Status W

Use 10GHz consistently

Cl 165 SC 165.8.2.1 P 127 L 4 # 465

Tu, Mike Broadcom

Comment Type TR Comment Status D

Equation 165-44 for the MDI return loss is too restrictive for practical PHY designs. Also need to set the maximum frequency to 9GHz instead of 10GHz.

Suggested Remedy

See proposed limits in "vakilian_3cy_01_08_16_2022.pdf"

Proposed Response Response Status W

PROPOSED REJECT.

I am unable to locate the referenced presentation

Cl 165 SC 165.8.2.1 P 127 L Figure # 598

Stephan Schreiner Rosenberger Hochfrequenztechnik

Comment Type E Comment Status D EZ

There is a vertical blue line at the 0 MHz position.

Suggested Remedy

Remove the vertical blue line at the 1 MHz position.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 165 SC 165.10 P 129 L 5 # 590

Ran, Adee Cisco

Comment Type T Comment Status D

Here there are different maximum delay specifications depending on the "Interleave" parameter. Interleaving (or "L") is negotiated between the link partners and may be different in either direction, so is unknown in advance for a given device.

The purpose of this table (per the text preceding it: "network planners and administrators conform to constraints regarding the cable topology and concatenation of devices".

The normative requirement "The sum of the transmit and receive data delays for an implementation of the PHY shall not exceed the limits shown in Table 165–16" is irrelevant with different values of interleave in the transmit and receive directions. The maximum delay happens when both sides choose L=8; if it is known that in a specific link the choices are different, the constraints can be tightened.

Therefore it seems adequate to have a normative requirement only for the maximum delay of the PHY, which happens with L=8.

Text can be added to explain that the actual delay may be lower if either or both partners requests a lower value of L, assuming this information is available to network management.

Suggested Remedy

Delete the first three rows in Table 165-16, leaving only the one with Interleave value of 8, and remove the "Interleave" column.

Add explanatory text as in the comment.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Delete the first three rows in Table 165-16, leaving only the one with Interleave value of 8, and remove the "Interleave" column.
Proposed Responses

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

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<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
</tr>
</thead>
</table>
| 165 | 165.11.2.2 | 130 | 36 | 445 | E | D | Comment Status: typo
| 165 | 165.11.2.2 | 130 | 36 | 591 | E | D | Incorrect amendment name.
Suggested Remedy: Change “ch-2020” to “cy-202x”. Proposed Response: PROPOSED ACCEPT. |
| 165 | 165.11.2.2 | 130 | 44 | 450 | E | D | Incorrect citation
| 165 | 165.11.4.1 | 131 | 39 | 592 | T | D | Item G3 status should be “IAN:M”.
Suggested Remedy: Per comment Proposed Response: PROPOSED ACCEPT. |
| 165 | 165.11.4.2.5 | 135 | 30 | 722 | T | D | Alert happens at the fifth frame after 8 frame boundary.
Suggested Remedy: Change “beginning of” to “fifth frame after”. Proposed Response: PROPOSED ACCEPT. |
| 165 | 165.11.4.2.6 | 136 | 6 | 731 | T | D | Sleep signal should be composed of 16 RS frames
Suggested Remedy: change "eight RS-FEC frame" to "sixteen RS-FEC frame” Proposed Response: PROPOSED ACCEPT. |

See comment #710 for justification
Comment type changed to non-R due to post-deadline status.

Jonsson, Ragnar
Marvell

Comment type changed to non-R due to post-deadline status.

Carlson, Steve
HSD, Bosch, Ethernovia

Comment type changed to non-R due to post-deadline status.

Ran, Adee
Cisco

Comment type changed to non-R due to post-deadline status.
Table 149-1 has nothing to do with the OAM state diagrams.

Suggested Remedy
- Change: Table 149-1
- To: Figure 149-24

PROPOSED ACCEPT.

---

The OAM state diagrams are shown in Figure 149-24 and Figure 149-25.

Suggested Remedy
- Change from "Table 149-1 and Figure 149-25" to "Figure 149-24 and Figure 149-25".

PROPOSED ACCEPT.

---

Interface is capitalized when appearing after "MDIO" (see clause 45 header).

Suggested Remedy
- Replace, "MDIO interface" with "MDIO Interface"

PROPOSED ACCEPT.

---

The objective is 25 Gb/s up to 2 inline connectors for at least 11 m. The drawing is correct, but the text on the link segment in Figure 165A-1 is not.

Suggested Remedy
- Change: four in-line connectors
- To: two in-line connectors

PROPOSED ACCEPT.
Proposed Responses

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

There are only 2 in-line connectors in a clause 165 link segment, the figure says 4. Also, the wording could be improved in the label.

**Suggested Remedy**

Change "SPE P-to-P link segments four in-line connectors up to at least 11m" to "Clause 165 link segment (up to 2 in-line connectors and up to at least 11m length)

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.

---

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

It is not clear where the "PHY ends" in the figure - there is an interface point defined, but not labeled. It doesn't really matter in the figure though or to the content of the annex.

**Suggested Remedy**

Suggest deleting the dotted vertical lines on the very left and right sides of the figure (the unlabeled interface plane)

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

---

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

Font size problem in the frequency span, and missing period. Same problems on lines 25 and 36, and on page 151 line 2.

**Suggested Remedy**

Fix the font size for "9000" and add a period to the end of the sentence. (3 instances)

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.

---

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

"Channel" is ambiguous (there are many different test points and reference losses in the annex), and is referenced differently in the text of 165A.3. Align the figure with the text.

**Suggested Remedy**

Change "Channel" to "TP0 to TP5 Channel"

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.
Proposed Responses  

IEEE P802.3cy D2.0 10G+ Auto Task Force Initial Working Group ballot comments

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

This section does NOT describe any 'Channel' return loss, but rather describes the models used for the Tx/Rx function to MDI return loss (equivalent of 149C.4.1).

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

Change the title of 165A.4 to "Example models for Tx/Rx function to MDI return loss"

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

Delete "illustrated in Figure 149C-2" and delete Figure 165A-3

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

We removed the 'laning' but forgot it here.

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

Change "When multiple 25GBASE-T1 lanes/PHYs are implemented" to "When multiple ports of 25GBASE-T1 are implemented"

---

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

We say 'specified' twice

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

Change "than that specified for power sum alien near-end crosstalk specified in" to "than that specified for power sum alien near-end crosstalk in"

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general  
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn  
SORT ORDER: Clause, Subclause, page, line
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<td>Till when will be Valerie Maguire listed as Working Group Treasurer?</td>
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| 661 |      |    |     |   | 1 | 661 |
| Murty, Ramana | Broadcom |      |   |   |     |
| Comment Type | E | Comment Status | D |   |     |
| It is good to add a heading and provide a bookmark to the page. |
| SuggestedRemedy |
| Add the heading "Contents" and provide a bookmark to the page. |
| Proposed Response | Response Status | W |   |     |
| PROPOSED ACCEPT IN PRINCIPLE. |
| Apply the latest template |

| 662 |      |    |     |   | 10 | 662 |
| Murty, Ramana | Broadcom |      |   |   |     |
| Comment Type | E | Comment Status | D |   |     |
| Add space between subclause number and text. |
| SuggestedRemedy |
| Per comment |
| Proposed Response | Response Status | W |   |     |
| PROPOSED ACCEPT IN PRINCIPLE. |
| Apply the latest template |