Comment Type: E  Comment Status: D

It seems as one of points 5) and 6) is incorrect (if same fiber, SMF, then either 40 km or 10 km, not both). Also, renumber this points from 1 (new list, not continuation from bullet g)

Suggested Remedy

Proposed Response  Response Status: O

Comment Type: T  Comment Status: D

Comment: The XLAUI/CAUI jitter tolerance setup does not employ de-emphasis and includes significant PCB loss. This allows the receiver to take advantage of its equalization capabilities. An actual compliant channel can have very little loss. An actual compliant transmitter can have up to 7dB of de-emphasis. This will result in over equalization of the channel and there will be no residual equalizable jitter at the receiver input. Therefore the jitter tolerance setup as specified is not stressful enough and a receiver that passes the test will fail in an actual application. This has been verified by simulating applications that use a short channel.

Suggested Remedy

Change: "The low pass filter stress is added until the 0.25 UI peak-to-peak deterministic jitter is achieved."
To: "The low pass filter stress is added until the 0.37 UI peak-to-peak deterministic jitter is achieved."

Proposed Response  Response Status: O

Comment Type: E  Comment Status: D

Figure 82-3 is out of order.

Suggested Remedy

Put the figure in order.

Proposed Response  Response Status: O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>CL</th>
<th>Page</th>
<th>Line</th>
<th>Type</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Comment ID</th>
<th>SC</th>
<th>CL</th>
<th>Page</th>
<th>Line</th>
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<tr>
<td>01</td>
<td>1.3</td>
<td>01</td>
<td>25</td>
<td>26</td>
<td>TR</td>
<td>Add reference to TIA Standard specifying OM3 performance</td>
<td>Change &quot;Type A1a.2 (OM3) specified in IEC 60793-2-10. See 86.10.2.1&quot; to &quot;Type A1a.2 (OM3) specified in IEC 60793-2-10 and ANSI/TIA-568.C.3. See 86.10.2.1&quot;</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>30</td>
<td>30</td>
<td>34</td>
<td>39</td>
<td>TR</td>
<td>PCS lanes - this concept has not been defined in Clause 30 or before for that matter. Provide reference to where such concept is defined / used for the first time for readers who do not read standards from the back.</td>
<td>Per comment</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td></td>
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<tr>
<td>12</td>
<td>45</td>
<td>45</td>
<td>37</td>
<td>10</td>
<td>TR</td>
<td>What is a 'Separated PMA'? I am sure that 802.3ba participants are intimately aware of that but a casual reader not participating in 802.3ba proceedings is at a loss in here. Similar comment to table 45-2, where reference to 'package' is made. What is a package and where is it defined?</td>
<td>Provide a reference to where these concepts are defined</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13
Cl 45 SC 45.2.1.8.2a P 46 L 28 
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
(1) Add "," before "respectively"(2) Add "bit" before "1.9.10"Similar comment against section 45.2.1.9.2a, page 47, line 28
SuggestedRemedy
Per comment

Proposed Response Response Status O

14
Cl 45 SC 45.2.1.85 P 57 L 3
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
In this section, there are two ways to refer to FEC i.e. FEC sublayer and BASE-R FEC. Some comments (1) reference name should be identical i.e. FEC sublayer and BASE-R FEC should refer to the same, correct? If so, use only one reference to avoid introducing terms which are not needed (2) What is BASE-R FEC? There is no definition of what it really is anywhere. Perhaps you could add a definition to section 1.4 for clarity
SuggestedRemedy
Per comment.

Proposed Response Response Status O

15
Cl 45 SC 45.2.3.4.4 P 67 L 10
Hajduczenia, Marek ZTE Corp.

Comment Type TR Comment Status D
Incorrect register number. Is "1.4.3," should be "3.4.3" in line 10 and 11.
SuggestedRemedy
Please correct accordingly.

Proposed Response Response Status O

16
Cl 45 SC 45.2.3.12.3 P 71 L 1
Hajduczenia, Marek ZTE Corp.

Comment Type E Comment Status D
Space missing in "BER(3.33.13:8)"
SuggestedRemedy
Add space between BER and the opening brace

Proposed Response Response Status O

17
Cl 45 SC 45.2.3.15 P 71 L 27
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
(1) It says "or may function as defined" - as defined where? Provide reference or add "above" it that is the case. (2) " and 82.2.10" should be underlined (AFAIK) since this is added text
SuggestedRemedy
Per comment

Proposed Response Response Status O

18
Cl 45 SC 45.2.3.16 P 72 L 1
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
In Table 45-95, items 3.42.6, 3.42.5 and 3.42.4 should have their Description corrected to read as follows: 1 = Enable 10GBASE-R PRBS9 test-pattern mode on the transmit path 0 = Disable 10GBASE-R PRBS9 test-pattern mode on the transmit path 1 = Enable 10GBASE-R PRBS31 test-pattern mode on the receive path 0 = Disable 10GBASE-R PRBS31 test-pattern mode on the receive path 1 = Enable 10GBASE-R PRBS31 test-pattern mode on the receive path 0 = Disable 10GBASE-R PRBS31 test-pattern mode on the transmit path if you already make a case to add the "10GBASE-R " in the Name of the register.
SuggestedRemedy
Per comment

Proposed Response Response Status O
Cl 45  SC 45.2.3.37  P 82  L 5  # 19
Hajduczenia, Marek  ZTE Corp.

Comment Type  E  Comment Status  D
Table 45-111a cust the text into two parts. Please place the table anchor in the correct location.
SuggestedRemedy
Per comment.
Proposed Response

Cl 69  SC 69.1.2  P 95  L 24  # 22
Hajduczenia, Marek  ZTE Corp.

Comment Type  E  Comment Status  D
Bullet item iii - should read "a single-lane 10 Gb/s PHY"
SuggestedRemedy
Per comment
Proposed Response

Cl 69  SC 69.2.5  P 97  L 49  # 23
Hajduczenia, Marek  ZTE Corp.

Comment Type  T  Comment Status  D
The word "existing" was removed, though I suggest to reinstate it. It makes sense in this context to emphasize the fact that minimum effort is needed to modify the existing network management solutions into the new system.
SuggestedRemedy
Per comment
Proposed Response

Cl 74  SC 74.1  P 107  L 15  # 24
Hajduczenia, Marek  ZTE Corp.

Comment Type  T  Comment Status  D
The text says "provides additional margin to account for" but it is not clear what "margin" is meant. P802.3ba could do service to humanity and clarify what margin is meant.
SuggestedRemedy
Per comment
Proposed Response

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Comment ID
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<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
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<tr>
<td>25</td>
<td>74</td>
<td>74.2</td>
<td>107</td>
<td>34</td>
<td>T</td>
<td>D</td>
<td>The target BER in point f) is really the post-FEC BER. Why not call it out this way i.e. change point f) to read &quot;To support a post-FEC BER objective of 10-12 or better.&quot;</td>
<td>Per comment</td>
<td>O</td>
</tr>
<tr>
<td>26</td>
<td>74</td>
<td>74.4</td>
<td>108</td>
<td>46</td>
<td>T</td>
<td>D</td>
<td>(1) Editorial change: add &quot;,&quot; after &quot;For 40GBASE-R and 100GBASE-R&quot;(2) Technical change: strike out &quot;which is &quot;(3) General editorial comment: some of the links to 802.3ba clauses are not live e.g. in this text block, neither 80.3 nor 83.2 are live even though they are added by P802.3ba.</td>
<td>Scrub the draft and make internal project links live.</td>
<td>Per comment</td>
</tr>
<tr>
<td>27</td>
<td>74</td>
<td>74.4.3</td>
<td>110</td>
<td>44</td>
<td>T</td>
<td>D</td>
<td>In Figure 74-2b, instead of showing FEC encoder instances 0,1,2,3,.... show instances 0,1,2,....19, which will show that the number is bounded to 20 rather than open. I do not have access to frame sources to make necessary changes and produce an editable FM file.</td>
<td></td>
<td>Per comment</td>
</tr>
<tr>
<td>28</td>
<td>74</td>
<td>74.5</td>
<td>111</td>
<td>1</td>
<td>TR</td>
<td>D</td>
<td>It is not clear what changes to section 74.5 are made in P802.3ba and how the original text is affected. Why there is no differential version available? Why do you need to replace the whole existing section instead of adding only 74.5.2, which is new and specific to 40G and 100G? The current description impedes readability a lot.</td>
<td></td>
<td>Per comment</td>
</tr>
<tr>
<td>29</td>
<td>74</td>
<td>74.5</td>
<td>111</td>
<td>12</td>
<td>E</td>
<td>D</td>
<td>The text says &quot;The service primitives are defined slightly differently for ...&quot; - how much is SLIGHTLY? Less than much and more than little? Avoid such meaningless adjectives. The definitions are different. Full stop.</td>
<td></td>
<td>Per comment</td>
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<tr>
<td>30</td>
<td>74</td>
<td>74.5.2</td>
<td>113</td>
<td>14</td>
<td>TR</td>
<td>D</td>
<td>The text from line 14 onwards should be divided into customary blocks describing the service primitives i.e. - Name-Semantics of the service primitive-When generated-Effect of receiptThe existing description is confusing and unnecessarily obfuscated.</td>
<td>Follow the existing standard descriptions and not invent a new style.</td>
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</tbody>
</table>
Based on Figure 74-2a and 74-2b, I fail to see how the signal FEC:IS_SIGNAL.indication can be sent to PMA. It is sent to PCS only (arrow points up, not down). PMA can send PMA:IS_SIGNAL.indication towards the FEC sublayer. Clarify whether Figures are ok or the textual description in section 74.5.2 is ok. Based on the description, it makes little sense to have such signal sent to PMA, since PMA is under FEC and not over it.

Suggested Remedy
Per comment

Proposed Response

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Comment Type T  Comment Status D
Add a reference to clause in 802.3-2008 describing the 64B/66B encoding instead of writing this from start.

Suggested Remedy
Per comment

Proposed Response

---

Comment Type T  Comment Status D
Change text added in lines 6 and 7 to read as follows: "... for the 10BASE-KR PHY. For the 40BASE-R and 100BASE-R PHYs, sync bits in all thirty-two 64B/66B decoded 64B/66B blocks take a value of \( \{S_{H.0},S_{H.1}\} = 11 \)."

Suggested Remedy
Per comment. Text is unclear otherwise.

Proposed Response

---

Comment Type T  Comment Status D
(1.172, 1.173) and 45.2.1.89 (1.176 to 1.215). or "(1.172, 1.173) or 45.2.1.89 (1.176 to 1.215)." I do not believe they are available simultaneously but rather on the exclusive or basis. Same in line 9, page 123, section 74.8.4.2

Suggested Remedy
Per comment

Proposed Response

---

Comment Type T  Comment Status D
Do you really use CSMA/CD MAC or full duplex MAC? Compare 44. Introduction to 10 Gb/s baseband network, which mentions 802.3 MAC and not CSMA/CD MAC.

Suggested Remedy
Clarify whether CSMA/CD MAC is used in 40G/100G Ethernet and if not, remove such references altogether.

Proposed Response

---

Comment Type T  Comment Status D
Change text "The FEC sublayers for 40BASE-R and 100BASE-R mark all thirty-two 64B/66B blocks' sync bits to 11 to indicate error to the PCS." to read "The FEC sublayers for 40BASE-R and 100BASE-R set sync bits in all thirty-two 64B/66B blocks to 11 to indicate error to the PCS."

Suggested Remedy
Such a description is clearer IMHO.

Proposed Response
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>T</td>
<td>D</td>
<td>Please provide definition, reference to where it might be defined or remove/replace with some other term which is already defined.</td>
</tr>
<tr>
<td>38</td>
<td>T</td>
<td>D</td>
<td>Decide whether it is a requirement (then put shall) or not (then replace &quot;must meet&quot; with &quot;meets&quot;)</td>
</tr>
<tr>
<td>39</td>
<td>T</td>
<td>D</td>
<td>In Table 80-2, note a) says that &quot;Annex 83B is optional for PMD types listed in Table 80-2 except for KR and CR PMD types.&quot;, yet KR and CR types are also marked as Optional for Annex 83A/B support. Why is that so?</td>
</tr>
<tr>
<td>40</td>
<td>T</td>
<td>D</td>
<td>What is a 'stripe' of data?</td>
</tr>
<tr>
<td>41</td>
<td>T</td>
<td>D</td>
<td>Missing comma after 'In addition'</td>
</tr>
<tr>
<td>42</td>
<td>E</td>
<td>D</td>
<td>Please clarify or use some more descriptive identification of what is a data stripe...</td>
</tr>
</tbody>
</table>
It is not clear what layer N and N-1 really is. Are these just examples? Suggest then to insert a sentence before line 21 with the following statement. "In the following description, layer N represents an upper layer while layer N-1 represents a lower layer, connected via a service interface with a set of specific service primitives."

Suggested Remedy: Per comment

In Figure 80-2, there is a strict number of lanes in PCS and below (4). Why in Figure 80-3 the number of PCS lanes is defined as "n"? I think knowing the existing 100G types, it is possible to enumerate the value of "n" in the note in line 47.

Suggested Remedy: Please replace "n= NUMBER OF PARALLEL STREAMS OF DATA UNITS" with "n= NUMBER OF PARALLEL STREAMS OF DATA UNITS i.e. X for Y PHY, Z for A PHY" etc.

The text reads "the lanes must be kept within limits so that the information on the lanes can be reassembled by the PCS." (1) What "limits" are referred to? Can you provide a link / reference to them? (2) Change "information on the lanes" to "information transmitted on the lanes" (3) Change "reassembled by the PCS" to "reassembled by the receiving PCS"

Suggested Remedy: Per comment

Change "the change in skew between any PCS lane and any other PCS lane " to "the change in skew between any two PCS lanes"

Suggested Remedy: Per comment

To ensure that a given PCS lane always traverses the same physical lane while the link remains in operation. - what does that mean in reality? PCS lanes are very much physical so the text is confusing at least, if not unclear.

Suggested Remedy: Per explain what is meant in here and remodel the text for clarity.
Draft 3.0 Comments  
IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments  
Sponsor ballot

Cl 80  SC 80.5  P 136  L 50  # 49  
Hajduczenia, Marek  
ZTE Corp.  
Comment Type  T  
Comment Status  D  

Lines 50 - 52 need a rewrite as follows:"In the transmit direction, the skew points are defined in the following locations (see Figure 80-4 and Figure 80-5): (1) SP1 on the XLAUI/CAUI interface, at the input of the PMA; (2) SP2 on the PMD service interface at the input of the PMD; (3) SP3 at the output of the PMD at the MDI." List should be bulleted for clarity.  

Suggested Remedy  
Per comment  

Proposed Response  
Response Status  O  

Cl 80  SC 80.5  P 137  L 1  # 50  
Hajduczenia, Marek  
ZTE Corp.  
Comment Type  T  
Comment Status  D  

Lines 1 - 3 need a rewrite as follows:"In the receive direction, the skew points are defined in the following locations (see Figure 80-4 and Figure 80-5): (1) SP4 at the MDI at the input of the PMD; (2) SP5 on the PMD service interface at the output of the PMD; (3) SP6 on the XLAUI/CAUI interface at the output of the PMA." List should be bulleted for clarity.  

Suggested Remedy  
Per comment  

Proposed Response  
Response Status  O  

Cl 80  SC 80.5  P 137  L 5  # 51  
Hajduczenia, Marek  
ZTE Corp.  
Comment Type  E  
Comment Status  D  

Change two occurrences of "shown" to "given"  

Suggested Remedy  
Per comment  

Proposed Response  
Response Status  O

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

Comment ID #  53  
12/29/2009  7:38:10 PM
Cl 80 SC 80.6 P 139 L 1 # 54
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
Not entirely sure why this section is needed at all, given that there are no state diagrams in this clause and no state diagrams are referenced as well. Remove it altogether.

Suggested Remedy
Per comment

Proposed Response Response Status O

Cl 81 SC 81 P 141 L 1 # 55
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
(1) "81. Reconciliation Sublayer (RS) and Media Independent Interface for 40Gb/s and 100Gb/s operation" should be changed to "81. Reconciliation Sublayer (RS) and Media Independent Interface (MII) for 40Gb/s and 100Gb/s operation".(2) Add a new acronym to "1.5 Abbreviations" "MII Media Independent Interface"

Suggested Remedy
Per comment. MII should be finally used as a acronym

Proposed Response Response Status O

Cl 81 SC 81.1 P 141 L 7 # 59
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
Several comments against paragraph 1 in 81.1(1) "face between CSMA/CD media access controllers" - do we still use CSMA/CD MAC in P2P links? I always thought that full duplex MAC was used(2) insert (MII) after " and the Media Independent Interface" in line 7(3) in line 9, "and Media Independent Interface to" change to "and MII to"(4) in line 10, "of the Media Independent Interface in this clause," change to "of the MII in this clause,"

Suggested Remedy
per comment

Proposed Response Response Status O

Cl 81 SC 81.1 P 142 L 6 # 58
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
(1) Change "It provides independent 64-bit-wide transmit and receive data paths." to "It provides independent 64-bit wide transmit and receive data paths."(2) "It provides for full duplex operation only." to "It supports full duplex operation only."

Suggested Remedy
Per comment

Proposed Response Response Status O

Cl 81 SC 81.1.1 P 142 L 14 # 59
Hajduczenia, Marek ZTE Corp.

Comment Type T Comment Status D
(1) "as they all define an interface allowing independent development of MAC and PHY logic." should read "as they all specify a generic interface allowing for independent development of MAC and PHY."(2) "The RS maps the signal set provided at the XGMLI/CGMII to the PLS service primitives provided at the MAC." should read "The RS maps the signal set of the XGMLI/CGMII to the PLS service primitives of the MAC."(3) "Each direction of data transfer is independent and serviced by data, control, and clock signals." should read "Each direction of data transfer is independent and carries data, control, and clock signals."(4) **link faults to the DTE on the remote end of the connecting link** should read **link faults to the DTE on the remote end of the link**

Suggested Remedy
Per comment

Proposed Response Response Status O
<table>
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<th>SC</th>
<th>Comment ID</th>
<th>Page</th>
<th>Line</th>
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<td>81.1.2</td>
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<td>identical media access controller may be used with all PHY types. - &quot;all PHY types&quot; seems very generic. Change to &quot;identical media access controller may be used with supported PHY types.&quot;</td>
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<td>SuggestedRemedy: Per comment</td>
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<td>The XLGMII has been specified to support 40Gb/s and the CGMII is specified to support 100Gb/s. change to &quot;The XLGMII is specified to support 40Gb/s operation and the CGMII is specified to support 100Gb/s operation.&quot;</td>
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<td>SuggestedRemedy: Per comment</td>
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<td>Nowhere in this clause is the number of transfers per second mentioned. In clause 46, there is&quot; 46.1.3 Rate of operation&quot;, which at least defines what data rate the MII operates at. Here, in Clause 81, such section does not exist. Why?</td>
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<td>SuggestedRemedy: Please add a corresponding section defining data rate of MII operation in clause 81.</td>
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<td>Proposed Response: Response Status: O</td>
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<td>81.1.5</td>
<td>143</td>
<td>3</td>
<td>53</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
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<td>Comment Type: T Comment Status: D</td>
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<td>The allocation of functions at the XLGMII/CGMII balances the need for media independence with the need for a simple interface. The XLGMII and CGMII maximize media independence by cleanly separating the Data Link and Physical Layers of the OSI seven-layer reference model. Change to &quot;The allocation of functions at the XLGMII/CGMII balances the need for media independence with interface simplicity. The XLGMII and CGMII maximize media independence by separating the Data Link and Physical Layers of the OSI seven-layer reference model.&quot;</td>
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<td>SuggestedRemedy: Per comment</td>
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<td>Proposed Response: Response Status: O</td>
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<tr>
<td>81</td>
<td>81.1.6</td>
<td>143</td>
<td>11</td>
<td>54</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
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<td></td>
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<td></td>
<td>a schematic view of the RS inputs and outputs change to &quot;a schematic view of the RS input and output signals&quot;</td>
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<td>SuggestedRemedy: Per comment</td>
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<td>Hajduczenia, Marek ZTE Corp.</td>
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<tr>
<td></td>
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<td></td>
<td>The 64 TXD and eight TXC signals shall --&gt; &quot;The sixty-four TXD and eight TXC signals shall as shall the 64 RXD and &quot; as shall the sixty-four RXD and&quot;Line 31: &quot;and RX_CLK for receive&quot; as shall the sixty-four RXD and&quot;Line 36: &quot;indicated by assertion of TXC and RXC, respectively&quot; as shall the sixty-four RXD and&quot;Line 31: &quot;and RX_CLK for receive&quot; as shall the sixty-four RXD and&quot;Line 36: &quot;indicated by assertion of TXC and RXC, respectively&quot;</td>
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<td></td>
<td>Proposed Response: Response Status: O</td>
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</tbody>
</table>
therefore, PLS service primitives supporting CSMA/CD operation are not mapped through the RS to the XLGMII/CGMII. It is the reason why we should not even mention support for CSMA/CD MAC, since these functions are not hooked to anything so the MAC operates on reduced function set anyway.

**Proposed Response**

No changes to the draft, just an observation regarding type of supported MAC.

---

Comment Type: T  Comment Status: D

It represents a single data bit. > "The value - one or zero - represents a single data bit."

**Proposed Response**

Per comment.

---

Comment Type: T  Comment Status: D

by the RS for each 64 bit-times of the MAC sublayer > "by the RS every 64 bit-times of the MAC sublayer"

**Proposed Response**

Per comment.
<table>
<thead>
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<th>L</th>
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<td></td>
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<td>74</td>
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<td>81</td>
<td>157</td>
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<td>76</td>
<td>81</td>
<td>159</td>
<td>45</td>
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</table>

**Comment 72**

Hajduczenia, Marek  
ZTE Corp.

**Comment Type**: T  
**Comment Status**: D  
**Proposed Response**: Per comment

*Change "DATA_NOT_VALID. (See 81.1.7.5.2 and 30.3.2.1.5)" to read "DATA_NOT_VALID - see 81.1.7.5.2 and 30.3.2.1.5."*

**Suggested Remedy**: Per comment

**Response Status**: O

**Comment 73**

Hajduczenia, Marek  
ZTE Corp.

**Comment Type**: E  
**Comment Status**: D  
**Proposed Response**: Per comment

*In Figure 81-5, line 14, the "I" symbol should be centered in the associated block*

**Suggested Remedy**: Per comment

**Response Status**: O

**Comment 74**

Hajduczenia, Marek  
ZTE Corp.

**Comment Type**: E  
**Comment Status**: D  
**Proposed Response**: Per comment

*Missing comma after "Upon recognition of a fault condition "*

**Suggested Remedy**: Per comment

**Response Status**: O

**Comment 75**

Hajduczenia, Marek  
ZTE Corp.

**Comment Type**: T  
**Comment Status**: D  
**Proposed Response**: Per comment

*Since Figure 46-9 is referenced and it is a single figure only, I suggest you reproduce it here to make the section self-standing. Otherwise, a reader needs to use also base standard, which will be in a completely different part altogether.*

**Suggested Remedy**: Per comment

**Response Status**: O

**Comment 76**

Hajduczenia, Marek  
ZTE Corp.

**Comment Type**: T  
**Comment Status**: D  
**Proposed Response**: Per comment

*IEEE Std 802.3-2007 - such standard does not exist. Should read "IEEE Std 802.3-2008"*

**Suggested Remedy**: Per comment

**Response Status**: O

**Comment 77**

Hajduczenia, Marek  
ZTE Corp.

**Comment Type**: TR  
**Comment Status**: D  
**Proposed Response**: Per comment

*Items PHY* and RS* should be separated for XLGMII and CGMII to clearly identify whether the given PICS refers to 40G or 100G system. After all, they are different. Once it is done, the rest of the PICS will also need proper reference / separation whenever two options (40G or 100G) are possible.*

**Suggested Remedy**: Per comment

**Response Status**: O
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<td>82.1.1</td>
<td>165</td>
<td>15</td>
<td>T</td>
<td>D</td>
<td>“Both 40GBASE-R and 100GBASE-R use a 64B/66B code. The 64B/66B code supports transmission of data” change to read “Both 40GBASE-R and 100GBASE-R use a 64B/66B code.” change to read “Both 40GBASE-R and 100GBASE-R are based on a 64B/66B code.”</td>
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<tr>
<td>82</td>
<td>82.1.1</td>
<td>165</td>
<td>16</td>
<td>T</td>
<td>D</td>
<td>“data striping” change to read “data striping”</td>
</tr>
<tr>
<td>82</td>
<td>82.1.1</td>
<td>165</td>
<td>18</td>
<td>T</td>
<td>D</td>
<td>“allows the receiving PCS to align data across multiple lanes.” change to read “allows the receiving PCS to align data from multiple lanes.”</td>
</tr>
<tr>
<td>82</td>
<td>82.1.2</td>
<td>165</td>
<td>26</td>
<td>T</td>
<td>D</td>
<td>In addition to 64B/66B encoding is a methodology to add alignment markers and distribute data to multiple lanes. This sentence reads plain old strange. Can you clarify it, separating into two independent sentences, which will be much clearer.</td>
</tr>
<tr>
<td>82</td>
<td>82.1.3</td>
<td>166</td>
<td>3</td>
<td>TR</td>
<td>D</td>
<td>It is not clear how you change from 10.3125 Gtransfers/s for per PCS lane to 40G transmission capacity. Likewise, it is not clear how you change from 5.15625 Gtransfers/s per PCS lane to 100G transmission capacity. Some text needs to be added, which clarifies how many PCS lanes are aggregated to provide the overall transmission capacity.</td>
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</table>

**Proposed Response**

Per comment

**Comment Status**

D/dispatched

**Response Status**

O/open
<table>
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<td>#84</td>
<td>Cl 82 SC 82.2.1 P 168 L 1</td>
<td>T</td>
<td>D</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td>In Figure 82-2, “inst:IS_UNITDATA_i.request: is repeated twice, so is “inst:IS_UNITDATA_i.indication”. Remove the second occurrence of these interface descriptions - they are not needed</td>
<td>Per comment</td>
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<tr>
<td>#85</td>
<td>Cl 80 SC 80.1.1 P 125 L 9</td>
<td>E</td>
<td>D</td>
<td>Gustlin, Mark Cisco Systems, Inc.</td>
<td>“Physical Layer entities such as those specified in Table 80-2” Should refer to Table 80-1 instead of 80-2.</td>
<td>Per comment</td>
<td>Change to 80-1</td>
<td></td>
<td></td>
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<tr>
<td>#86</td>
<td>Cl 80 SC 80.2.4 P 129 L 20</td>
<td>E</td>
<td>D</td>
<td>Gustlin, Mark Cisco Systems, Inc.</td>
<td>In this sentence: “The 40GBASE-R and 100GBASE-R PMAs perform the mapping of transmit and receive data streams between the PCS and PMA via the PMA service interface, and the mapping and multiplexing of transmit and receive bit streams between the PMA and PMD via the PMD service interface” It is not consistent in terminology: first is says data streams then it says bit streams, make it consistent.</td>
<td>Per comment</td>
<td>as above</td>
<td></td>
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<tr>
<td>#87</td>
<td>Cl 80 SC 80.3.2 P 131 L 26</td>
<td>E</td>
<td>D</td>
<td>Gustlin, Mark Cisco Systems, Inc.</td>
<td>In Figure 80-2, there is a definition for XLAUI, but no mention of XLAUI in the diagram, it might make sense to label the interface between the 2 pmas as an optional XLAUI. Either that or remove the definition of XLAUI. Same comment in Figure 80-3 for CAUI.</td>
<td>Per comment</td>
<td>as above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>
Gustlin, Mark  
Cisco Systems, Inc.

Comment Type: E  Comment Status: D

Change:
- due to bit error for example to:
- due to a bit error for example

Suggested Remedy:
as above

Proposed Response  Response Status: O

---

Szczepanek, Andre  
HSZ Consulting Ltd

Comment Type: T  Comment Status: D

Although the text in clause 45 for the transmit and receive fault bits has been updated, the text for the global PMA/PMD fault bit (1.1.7) has not been updated to cover 40/100Gbps operation.

45.2.1.2.1 currently says:
Fault is a global PMA/PMD variable. When read as a one, bit 1.1.7 indicates that either (or both) the PMA or the PMD has detected a fault condition on either the transmit or receive paths. When read as a zero, bit 1.1.7 indicates that neither the PMA nor the PMD has detected a fault condition. For 10 Gb/s operation, bit 1.1.7 is set to a one when either of the fault bits (1.8.11, 1.8.10) located in register 1.8 are set to a one. For 10PASS-TS or 2BASE-TL operations, when read as a one, a fault has been detected and more detailed information is conveyed in 45.2.1.16, 45.2.1.39, 45.2.1.40, and 45.2.1.55.

Suggested Remedy:
Add change instructions to make 45.2.1.2.1 say:
Fault is a global PMA/PMD variable. When read as a one, bit 1.1.7 indicates that either (or both) the PMA or the PMD has detected a fault condition on either the transmit or receive paths. When read as a zero, bit 1.1.7 indicates that neither the PMA nor the PMD has detected a fault condition. For 40/100 Gb/s operation, bit 1.1.7 is set to a one when either of the fault bits (1.8.11, 1.8.10) located in register 1.8 are set to a one. For 10PASS-TS or 2BASE-TL operations, when read as a one, a fault has been detected and more detailed information is conveyed in 45.2.1.16, 45.2.1.39, 45.2.1.40, and 45.2.1.55.

Proposed Response  Response Status: O

---

Szczepanek, Andre  
HSZ Consulting Ltd

Comment Type: E  Comment Status: D

The Register names of registers 1.308 and 1.309 in this table are swapped. The clause references are correct.

Suggested Remedy:
change name of 1.308 to "Square wave testing control"
change name of 1.309 to "PRBS pattern testing control"

Proposed Response  Response Status: O

---

Szczepanek, Andre  
HSZ Consulting Ltd

Comment Type: E  Comment Status: D

The definition of the "PRBS9 ability" bit requires that PRBS9 generation capability be provided in both transmit and receive directions even though the PRBS9 pattern is strictly an optical test pattern. (See line 48)

Suggested Remedy:
- Change the name of 1.307.5 to "Tx PRBS9 ability" and change the description field to:
  1 = Transmit direction PRBS9 pattern generation supported
  0 = Transmit direction PRBS9 pattern generation not supported

- Change the paragraph starting on line 47 to:
  When read as a one, register 1.307, bit 6 indicates that the device supports PRBS31 generation or checking, and register 1.307. In this case, it shall support that test for all of the generator and checker types that are indicated by the assertion of bits 3:0.
  When read as a one, register 1.307, bit 5 indicates that the device supports PRBS9 generation in the transmit direction.

Proposed Response  Response Status: O

---

Comment ID: # 90  Page 16 of 159  12/29/2009  7:38:10 PM
The name of this register and its bits is ambiguous as to the direction of the "square wave testing" that is being controlled. This sub-clause could be interpreted as indicating a requirement to support square wave testing in both the receive and transmit directions.

Suggested Remedy
Indicate explicitly that square wave testing is a transmit direction pattern ability only. Change name of register to "Tx Square wave testing control" here, the accompanying paragraph, and in Table 45-3. In the Description column of Table 45-65b change all instances of "square wave" to "transmit direction square wave".

Proposed Response

There is a numbering mismatch. The value of 4.3 in the second lane of the 4 Lane PMA Output does not correspond with the related 10 Lane PMA Input value.

Suggested Remedy
Change the value from 4.1 to 4.3.

Proposed Response

There is a numbering mismatch. The value of 4.2 in the second lane of the 4 Lane PMA Output does not correspond with the related 10 Lane PMA Input value.

Suggested Remedy
Change the value from 4.3 to 4.5.

Proposed Response

There is a numbering mismatch. The value of 4.1 in the second lane of the 4 Lane PMA Output does not correspond with the related 10 Lane PMA Input value.

Suggested Remedy
Change the value from 4.3 to 4.5.

Proposed Response

There is a typo: "Onput"

Suggested Remedy
Change to "Output".

Proposed Response

"5.5GHz in the following sentence should be 5.15625 GHz. "Figure 83B-5 and Figure 83B-7 include the loss associated with the HCB and MCB at 5.5 GHz."

Suggested Remedy
"Change sentence to:""Figure 83B-5 and Figure 83B-7 include the loss associated with the HCB and MCB at 5.15625 GHz."

Proposed Response
<table>
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<tr>
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<th>Type</th>
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<th>Comment Status</th>
<th>Suggested Remedy</th>
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<tr>
<td>100</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>Single ended output voltage range is no longer in 83B.2.1 since it is an AC coupled interface</td>
<td>Remove MC1</td>
</tr>
<tr>
<td>101</td>
<td>G</td>
<td>G</td>
<td>D</td>
<td>&quot;De-emphasis shall be off during jitter testing&quot; should have a PICs statement</td>
<td>Add MC14 De-emphasis off during jitter testing</td>
</tr>
<tr>
<td>102</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>&quot;AC coupling for both TX and RX paths shall be located in the module.&quot; needs a PICs statement</td>
<td>Add MC15 AC coupling for both Tx and Rx</td>
</tr>
</tbody>
</table>

**Comment ID # 103**

Latchman, Ryan

Comment Type | E
---|---
Comment Status | D
Suggested Remedy | Remove HC12 since this is covered in MC15
Proposed Response | Remove HC12

**Comment ID # 104**

Marris, Arthur Cadence Design Systems

Comment Type | T
---|---
Comment Status | D
Suggested Remedy | am_invl_cnt <= 0
Proposed Response | am_invl_cnt <= 0

**Comment ID # 105**

Marris, Arthur Cadence Design Systems

Comment Type | E
---|---
Comment Status | D
Suggested Remedy | Make the 3 in BIP3 a subscript.
Proposed Response | Make the 3 in BIP3 a subscript.
Cl 82  SC  82.2.18.2.4  P 185  L 25  # 106
Marris, Arthur  Cadence Design Syste

Comment Type  T  Comment Status  D  This says ber_count is 20 bits but Clause 45 in 45.2.3.16a on page 75 line 5 says the counter is 22 bits.

SuggestedRemedy  
Please check whether this counter is 20 or 22 bits and reconcile with Clause 45. If it is 22 bits also need to change 3.44.13:0 to 3.44.15:0 Also regardless of counter size add 3.44.??:0 to BER entry in Table 82-7.

Proposed Response  
Response Status  O

Cl 45  SC  45.2.3.16a  P 73  L 5  # 107
Marris, Arthur  Cadence Design Syste

Comment Type  T  Comment Status  D  Is the BER counter 22 or 20 bits? 82.2.18.2.4 says ber_count is 20 bits. Also if it is 22 bits then the description on line 53 on page 72 should be "Bits 21:6 of BER counter".

SuggestedRemedy  
Reconcile with Clause 82 and assuming it is 22 bits change: Bits 19:6 of BER counter to Bits 21:6 of BER counter

Proposed Response  
Response Status  O

Cl 45  SC  45.2.3.3.16a Table 45-3  P 39  L 16  # 108
Marris, Arthur  Cadence Design Syste

Comment Type  T  Comment Status  D  The 802.3ba PCS has been designed to support speeds higher than 100G. Higher speeds are likely to require more virtual and physical lanes but the register map does not allow any room for expansion.

SuggestedRemedy  
Please renumber the registers leaving a reserved space after each set of registers for virtual and physical lanes to allow room for future expansion.

Proposed Response  
Response Status  O
<table>
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<td>117</td>
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<td>Per comment</td>
<td>O</td>
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</table>

**Comment 112**

Comment Type: T
Comment Status: D

```
Cl 83A  SC 83A.7.3  P9  L 392  #112
Hajduczenia, Marek  ZTE Corp.

(1) Item RATE has inconsistent Feature and Value/Comment description. What has the
fact that "Leverages 64B/66B coding" got to do with the data rate? (2) Why there is "N/A" in
Support column for items RATE and IO if they are mandatory? How can they be
inapplicable?

Suggested Remedy
Per comment

Proposed Response  Response Status  O
```

**Comment 113**

Comment Type: T
Comment Status: D

```
Cl 83A  SC 83A.7.5  P7  L 393  #113
Hajduczenia, Marek  ZTE Corp.

In item RC2, the BER should read "10-12" and not "1E-12"

Suggested Remedy
Per comment

Proposed Response  Response Status  O
```

**Comment 114**

Comment Type: T
Comment Status: D

```
Cl 83B  SC 83B.1  P49  L 396  #114
Hajduczenia, Marek  ZTE Corp.

Figure 83B-3 should have a caption that reads "Chip-to-module connection loss budget".
This term is also used throughout the clause, even though before it was used consistently
as "chip-to-module". Use one designation consistently, please.

Suggested Remedy
Per comment

Proposed Response  Response Status  O
```

**Comment 115**

Comment Type: TR
Comment Status: D

```
Cl 83B  SC 83B.2  P18  L 397  #115
Hajduczenia, Marek  ZTE Corp.

It is said in the text that Figure 83B-5 and Figure 83B-7 include definition of compliance
points. I do not see any on these figures.

Suggested Remedy
Clarify where the said compliance points are located on these figures, adding them clearly
on the figures.

Proposed Response  Response Status  O
```

**Comment 116**

Comment Type: E
Comment Status: D

```
Cl 83C  SC 83C  P1  L 409  #116
Hajduczenia, Marek  ZTE Corp.

Figures in these Annex contain caption with the word "Example" which seems redundant.
Eliminate it or change to read "Example of"?

Suggested Remedy
Per comment

Proposed Response  Response Status  O
```

**Comment 117**

Comment Type: E
Comment Status: D

```
Cl 83C  SC 83C  P1  L 409  #117
Hajduczenia, Marek  ZTE Corp.

Figures in this section are sparsely distributed. Try fitting two figures per page.

Suggested Remedy
Per comment

Proposed Response  Response Status  O
```
Proposed Response

Cl 86A SC 86A.8.2.2 P 47 L 440 # 118
Hajduczenia, Marek ZTE Corp.

Comment Type T  Comment Status D
IEEE Std 802.3ba-20xx.) should read "IEEE Std 802.3-2008.)"

Suggested Remedy
Per comment

Proposed Response  Response Status O

Cl 88 SC 88.6 P 47 L 343 # 121
Hajduczenia, Marek ZTE Corp.

Comment Type T  Comment Status D

Suggested Remedy
Per comment

Proposed Response  Response Status O

Cl 87 SC 87.6 P 38 L 313 # 122
Hajduczenia, Marek ZTE Corp.

Comment Type T  Comment Status D

Suggested Remedy
Per comment

Proposed Response  Response Status O

Cl 88 SC 88.5.8 P 43 L 342 # 123
Hajduczenia, Marek ZTE Corp.

Comment Type T  Comment Status D
(1) Change the title of subclause 88.5.8 to read "PMD lane-by-lane transmit disable function (optional)." Comment applicable to 342/42, 228/15, 242/7, 285/32, 312/37, 342/43(2) Unify the call to "lane-by-lane)." Some clauses use "lane by lane", some "lane-by-lane)." Suggest to use "lane-by-lane)" consistently. Scrub the draft as needed.

Suggested Remedy
Per comment

Proposed Response  Response Status O
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**Comment Type**

- **E** - Editorial required
- **TR** - Technical required
- **G** - General required

**Comment Status**

- **D** - Dispatched
- **A** - Accepted
- **R** - Rejected

**Response Status**

- **O** - Open
- **W** - Written
- **C** - Closed
- **U** - Unsatisfied

**Proposed Response**

- **Per comment**
- **No need to hide example in braces.**
- **Clarify what the "4 or 10" refers to on Figure 86-5**
Comment Type | T | Comment Status | D
OMA is as defined in 52.9.5 for measurement with a square wave (8 ones, 8 zeros) test pattern. Change to read "OMA is as defined in 52.9.5 for measurement with a square wave (see Table 86-12) test pattern.”

Suggested Remedy
No need to repeat information included already in Table 86-12

Proposed Response
Response Status | O

Comment Type | T | Comment Status | D
Such a table (as 86-10) should be also included in the copper PHY clauses, which for now contain only textual description of what the test points are and where they are located.

Suggested Remedy
Per comment

Proposed Response
Response Status | O

Comment Type | T | Comment Status | D
The fiber contained within the 40GBASE-SR4 or 100GBASE-SR10 fiber optic cabling change to read "The fiber used for the 40GBASE-SR4 or 100GBASE-SR10 fiber optic cabling.

Suggested Remedy
Per comment

Proposed Response
Response Status | O

Comment Type | T | Comment Status | D
For 40GBASE-SR4, the highest-numbered six of the ten lane-by-lane transmit disables do not apply. Change to read "For 40GBASE-SR4, the highest six lane-by-lane transimt disable signals from the pool of ten lane-by-lane transimt disable signals are not used."

Suggested Remedy
Per comment

Proposed Response
Response Status | O

Comment Type | T | Comment Status | D
For 40GBASE-SR4, the highest-numbered six of the ten lane-by-lane signal detects do not apply. Change to read "For 40GBASE-SR4, the highest six lane-by-lane signal detect signals from the pool of ten lane-by-lane signal detect signals are not used."

Suggested Remedy
Per comment

Proposed Response
Response Status | O
<table>
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**Comment 136**

**Comment Type:** T  
**Comment Status:** D  
Some of the references to 40GBASE-SR4 / 100GBASE-SR4 contain 'and' between types and some 'or'. Why is 'or' used in case of definition of parameters which are common for both types? Even title in Table 86-8 suggests the use of 'and'.

**Suggested Remedy**
Per comment

**Proposed Response**

**Response Status:** O

**Comment 137**

**Comment Type:** T  
**Comment Status:** D  
The draft says "variable is set to one" or "variable is set to zero". It is more common to use the terms the "variable is set" and "variable is reset", which means that it is set to one or zero, respectively. Use consistently in the draft. There are multiple locations where there is inconsonist use of these terms.

**Suggested Remedy**
Per comment

**Proposed Response**

**Response Status:** O

**Comment 138**

**Comment Type:** T  
**Comment Status:** D  
40GBASE-SR4 uses four identical lanes, while 100GBASE-SR10 uses ten of the same lanes. In this clause, where there are four or ten items are these PCS lanes or PMD lanes? This needs to be spelled out clearly.

**Suggested Remedy**
Per comment

**Proposed Response**

**Response Status:** O

**Comment 139**

**Comment Type:** T  
**Comment Status:** D  
These two PMDs are very similar. - strike this one out. They are different after all, since there are different definitions of PMDs.

**Suggested Remedy**
Per comment

**Proposed Response**

**Response Status:** O

**Comment 140**

**Comment Type:** T  
**Comment Status:** D  
Table like 86-1 is missing from copper clauses 84 and 85.

**Suggested Remedy**
Add tables similar to table 86-1 to clauses 84 and 85.

**Proposed Response**

**Response Status:** O

**Comment Type:** TR/technical required  
**Comment Status:** D/dispatched  
**Response Status:** O/open  
**SORT ORDER:** Comment ID
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<td>85.7.6</td>
<td>TR</td>
<td>D</td>
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<td>85.7.5</td>
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</table>

### Comment 148

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

In Table 85-1, "not applicable" should be written as "N/A" since that is what is used in PICS throughout the 802.3 standards.

**Suggested Remedy:**
Per comment.

**Proposed Response**

**Response Status:** O

### Comment 149

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

There is no need to say "is used" all the time in Table 84.11.4.1, 84.11.4.3, 84.11.4.4.

**Suggested Remedy:**
Per comment.

**Proposed Response**

**Response Status:** O

### Comment 150

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

In caption of Figure 85-2, what is the "half link"? Do you mean that only one link direction is illustrated?

**Suggested Remedy:**
Per comment.

**Proposed Response**

**Response Status:** O

### Comment 151

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

The same test fixture as 10GBASE-KR shall be used on all lanes as described in 72.7.1.1 change to read "The test fixture defined for 10GBASE-KR in 72.7.1.1 shall be used on all lanes."

**Suggested Remedy:**
Per comment.

**Proposed Response**

**Response Status:** O

### Comment 152

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

Note 2 says that "Placing a network port into loopback mode can be disruptive to a network." - in what way is a network disrupted in such a case? Do you mean that network operation is disrupted?

**Suggested Remedy:**
Change to read "Placing a network port into loopback mode can be disruptive to a network operation and carried traffic."

**Proposed Response**

**Response Status:** O

### Comment 153

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

If the MDIO is implemented, PMD_fault is the logical OR of PMD_receive_fault, PMD_transmit_fault, and any other implementation specific fault. Change to read "If the MDIO is implemented, PMD_fault corresponds to the logical OR operation on PMD_receive_fault, PMD_transmit_fault, and any other implementation specific fault."

**Suggested Remedy:**
Per comment.

**Proposed Response**

**Response Status:** O
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<tr>
<td>154</td>
<td>ER</td>
<td>Table 83-4 is cut on page 216</td>
<td>Per comment</td>
<td></td>
</tr>
<tr>
<td>155</td>
<td>ER</td>
<td>Note that PRBS9 is intended to be checked by external test gear, and no PRBS9 checking is provided within the PMA.</td>
<td>Per comment</td>
<td></td>
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<tr>
<td>156</td>
<td>ER</td>
<td>(40Gb/s and 100Gb/s) - remove - this is unnecessary since the transmission rate can be deduced from the PMD family names.</td>
<td>Per comment</td>
<td></td>
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</tbody>
</table>
What kind of function is “tolerate Skew Variation”? This is a requirement for PMA.

What is a “PMA context”? Usually this clause is called in the lines “Positioning of PMA within the IEEE 802.3 architecture” or something alike. What context do you mean? Make this title mean actually something - otherwise there is no need for it.

The text in the section, as well as in this Clause and a few next Clauses contains references to some numbers, p and q. In other places, numbers ‘z’, ‘m’ and ‘n’ are used. This is confusing, unless one set of illustrative numbers is used. Try to use a single set of illustrative numbers, e.g. ‘m’ and ‘n’. See Figure 83-3 as an example. Also, when using such numbers, please put the in italics, to make sure that they actually can be distinguished from the background text. Otherwise it is very hard to read.

If we have PCLs, we should also have PMLs, and also PALs, to denote PMD lanes and PMA lanes. The term ‘lane’ is used extensively in these clauses as well, without clear identification of what clauses are used. In that case, add acronyms to 1.5 and use them accordingly in the clauses.

Title for Clause 83 should read “83. Physical Medium Attachment (PMA) sublayer, type 40GBASE-R and 100GBASE-R”.

What is the “XLGMII/CGMII compatibility interface”? (2) in 82.7.3 (item XGE), 82.7.6.1 (items SM7, SM9, SM10, SM11), 82.7.6.3 (item TIM1) should be separated into separate entries for 40G and 100G interfaces, for an implementer to be able to mark support accordingly. Otherwise, it is not clear which version is supported.

1 Item XGE, what is the “XLGMII/CGMII compatibility interface”? (2) in 82.7.3 (item XGE), 82.7.6.1 (items SM7, SM9, SM10, SM11), 82.7.6.3 (item TIM1) should be separated into separate entries for 40G and 100G interfaces, for an implementer to be able to mark support accordingly. Otherwise, it is not clear which version is supported.
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<th>Comment ID</th>
<th>Page</th>
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<td>E</td>
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<td>T</td>
<td>D</td>
<td>#168</td>
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<td>T</td>
<td>D</td>
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<td>D</td>
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<td>34</td>
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**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:** Comment ID

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**Comment 1:**
- **Comment ID:** #166
- **Cl:** 82
- **SC:** 82.7.4.2
- **Line:** 197
- **Proposed Response**

**Suggested Remedy:**
- Figure should be Figure(2)

**Comment Type:** E

**Comment Status:** D

**Comment 2:**
- **Comment ID:** #167
- **Cl:** 82
- **SC:** 82.6
- **Line:** 189
- **Proposed Response**

**Suggested Remedy:**
- Table formatting is incorrect (line width)

**Comment Type:** TR

**Comment Status:** D

---

**Comment 3:**
- **Comment ID:** #168
- **Cl:** 82
- **SC:** 82.2.18.2.4
- **Line:** 20
- **Proposed Response**

**Suggested Remedy:**
- 66b should be "66-bit". Scrub the draft accordingly.

**Comment Type:** T

**Comment Status:** D

---

**Comment 4:**
- **Comment ID:** #169
- **Cl:** 82
- **SC:** 82.2.18.3
- **Line:** 54
- **Proposed Response**

**Suggested Remedy:**
- It is not 'sync field' but 'sync header', which has been in use in previous clauses in 802.3.

**Comment Type:** T

**Comment Status:** D

---

**Comment 5:**
- **Comment ID:** #170
- **Cl:** 82
- **SC:** 82.2.18.2.4
- **Line:** 22
- **Proposed Response**

**Suggested Remedy:**
- Either mark condition under which this variable is set to true or mark that on the state diagram somewhere.

**Comment Type:** TR

**Comment Status:** D

---

**Comment 6:**
- **Comment ID:** #171
- **Cl:** 82
- **SC:** 82.2.18.2.4
- **Line:** 34
- **Proposed Response**

**Suggested Remedy:**
- The current 64 or 1024 block window - how is this value set? Perhaps a reference would help.

**Comment Type:** T

**Comment Status:** D

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<tr>
<td>172</td>
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<td>D</td>
<td>1.25ms is used and in some other locations, the same value is referred to as &quot;1250us&quot; - use one base unit consistently.</td>
<td>Per comment.</td>
<td>O</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
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<td>173</td>
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<td>D</td>
<td>as specified in these state diagrams. &gt; &quot;as specified in the respective state diagrams.&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
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<td>174</td>
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<td>T</td>
<td>D</td>
<td>Support for the Auto-Negotiation process defined in Clause73 is mandatory. - why not make it into a 'shall' statement altogether if it is mandatory?</td>
<td>Per comment</td>
<td>O</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
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<tr>
<td>175</td>
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<td>T</td>
<td>D</td>
<td>PCS lane the markers must match each other and an entry from Table 82--2 for 100GBASE-R or Table 82--3 for 40GBASE-R change to read &quot;PCS lane, the markers must match one of the possible values specified in Table 82--2 for 100GBASE-R or Table 82--3 for 40GBASE-R and match each other after the marker lock is acquired.&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
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<tr>
<td>176</td>
<td></td>
<td>T</td>
<td>D</td>
<td>Note that the BIP3 and BIP7 fields are excluded from the markers when making a match to each other or to possible values specified in Table 82--2 for 100GBASE-R or Table 82--3 for 40GBASE-R.&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
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<tr>
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<td>Type</td>
<td>Comment</td>
<td>Suggested Remedy</td>
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</tr>
<tr>
<td>178</td>
<td>T</td>
<td>Change &quot;provided by the rules in&quot; to &quot;defined in&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>ZTE Corp.</td>
<td>151</td>
<td>T</td>
<td>Note 6 on page 169 should be rewritten. It is clear how many lanes are used in specific PMDs, so it is also possible to define clearly what the run lengths are for individual PMD.</td>
</tr>
<tr>
<td>179</td>
<td>T</td>
<td>Please clarify what this text mean.</td>
<td>Per comment</td>
<td>O</td>
<td>ZTE Corp.</td>
<td>152</td>
<td>T</td>
<td>8 data octets. See 82.2.3.3 for information on how blocks containing control characters are mapped. Note that the sync header is generated by the encoder and bypasses the scrambler change to &quot;8 data octets. 82.2.3.3 contains information on how blocks containing control characters are mapped (into what??). Note that sync headers are generated by the 64B/66B encoder and bypass the scrambler&quot; Also a question: it says that the &quot;blocks containing control characters are mapped&quot; - it is not clear what they are mapped into. Please clarify</td>
</tr>
<tr>
<td>180</td>
<td>T</td>
<td>The relationship of block bit positions to XLGMII/CGMII, PMA, and other PCS constructs change to &quot;The relationship of block bit positions relative to XLGMII/CGMII, PMA, and other PCS functions &quot;</td>
<td>Per comment</td>
<td>O</td>
<td>ZTE Corp.</td>
<td>153</td>
<td>T</td>
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</table>

**Comment ID** # 182

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12/29/2009 7:38:10 PM
This comment is about Figure 82-4. (1) It would be beneficial to add 64B/66B decoder into this figure, since only descrambler is shown, but decoder is not shown at all. (2) Instead of showing "inst:IS_UNITDATA_3.indication or inst:IS_UNITDATA_19.indication", show "inst:IS_UNITDATA_19.indication (for 100GBASE-R) inst:IS_UNITDATA_3.indication (for 40GBASE-R)". (3) There is a text field saying "Input to decoder function" but there is no indication of where the decoder function is.

Suggested Remedy
Per comment.

Cl 82 SC 82 P 171 L 1 # 183
Hajduczenia, Marek ZTE Corp.

This comment is about Figure 82-3, page 173. (1) It would be beneficial to add 64B/66B encoder into this figure, since only descrambler is shown, but encoder is not shown at all. (2) There is a text field saying "Output of encoder function" but there is no indication of where the encoder function is.

Suggested Remedy
Per comment.

Cl 82 SC 82 P 171 L 1 # 184
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D
This comment is about Figure 82-4 and Figure 82-5 before Figure 82-3. Please put them in a correct order.

Suggested Remedy
Per comment.

Cl 82 SC 82 P 165 L 1 # 185
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D
The use of terms "control character" "control octet" is not consistent - they are used interchangeably. Please use just one term consistently in the clause. Decide whether when referring to a single data portion, the word "character" or "octet" is supposed to be used.

Suggested Remedy
Per comment.

Cl 82 SC 82.2.3.3 P 172 L 3 # 186
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D
In Figure 82-5, what does the "Input data" mean? Is this the "xGMII data" as received from the particular MII type interface?

Suggested Remedy
Please consider changing the name "Input Data" to "Data from CGMII/XLGMII".

Proposed Response
Response Status: O

Cl 82 SC 82.2.3.3 P 172 L 31 # 187
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D
The WARNING note should be modified to a shall statement instead to make sure that no deviation from the encoding ever takes place in a compliant implementation.

Suggested Remedy
Per comment.

Proposed Response
Response Status: O

Cl 82 SC 82.2.3.4 P 172 L 41 # 188
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D
The same set of control characters are supported by the XLGMII/CGMII and the PCS - It is not clear how the same control characters can be used by both sublayers. Please clarify.

Suggested Remedy
Per comment.

Proposed Response
Response Status: O
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<th>Proposed Response</th>
<th>Response Status</th>
<th>Sponsor ballot</th>
</tr>
</thead>
<tbody>
<tr>
<td>189</td>
<td>T</td>
<td>T</td>
<td>D</td>
<td>#189</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Provide a reference to where such codes are defined.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>190</td>
<td>T</td>
<td>T</td>
<td>D</td>
<td>#190</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Maintain the Hamming distance: 0x00, 0x2D, 0x33 and 0x66. Change to &quot;maintain the required Hamming distance: 0x00, 0x2D, 0x33 and 0x66.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>191</td>
<td>T</td>
<td>T</td>
<td>D</td>
<td>#191</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>Per comment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>193</td>
<td>T</td>
<td>T</td>
<td>D</td>
<td>#193</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>This comment is applicable to Clause 82.2.3.7/8/9/10. (1) Why there are changes to these clauses as compared with Clause 49 apart from the necessary changes (data rates, xGMII interface names)? (2) In 82.2.3.10, line 26, page 175&quot;For both the encoder and decoder, the&quot; should read &quot;In both the 84B/66B encoder and decoder, the&quot; 3 in 82.2.3.9, line 20, page 175&quot;and shall delete only one of the two.&quot; should read &quot;and one of the two ordered sets shall be deleted.&quot; (4) in 82.2.3.9, line 21, page 175&quot;Signal ordered sets are not deleted for clock&quot; should read &quot;Signal ordered sets shall not be deleted for clock&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>194</td>
<td>T</td>
<td>T</td>
<td>D</td>
<td>#194</td>
<td>Hajduczenia, Marek ZTE Corp.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Per comment.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment ID # 190**

Cl 82 SC 82.2.3.4

**Comment Type:** T  
**Comment Status:** D  
- into a 7-bit C code. - what is a C code and where it is defined?

**Suggested Remedy:**
- Please provide a reference to where such codes are defined.

**Provisional Response:**
- Response Status: O

**Comment ID # 191**

Cl 82 SC 82.2.3.5

**Comment Type:** T  
**Comment Status:** D  
- b) The block type field contains an invalid value (one not appearing in Figure 82-5). c) Any control character contains a value not in Table 82-1. Change to read: "b) The block type field contains an invalid value (one not included in Figure 82-5). c) Any control character contains a value not included in Table 82-1."

**Suggested Remedy:**
- Per comment

**Provisional Response:**
- Response Status: O

**Comment ID # 193**

Cl 82 SC 82.2.6

**Comment Type:** T  
**Comment Status:** D  
- (1) In Figure 82-6, it is not clear how much is "n" in terms of the number of lanes. Is it 4 and 20 for 40GBASE-R and 100GBASE-R respectively? Add a comment to the figure with clarification on this point. (2) Also change caption of figure 82-6 to read "PCS block distribution function"

**Suggested Remedy:**
- Per comment

**Provisional Response:**
- Response Status: O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page</th>
<th>Line</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Sponsor</th>
<th>Comment ID</th>
<th>Page</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td># 195</td>
<td>176</td>
<td>51</td>
<td>T</td>
<td>D</td>
<td>(1)</td>
<td>Figure 82-7 breaks the text block into two, please fix it - place the figure anchor in a correct location and fix settings for orphans on this page. (2) Change caption in Figure 82-7 to read &quot;Alignment market insertion function&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Sponsor</td>
<td>Hajduczenia, Marek</td>
<td>ZTE Corp.</td>
<td># 195</td>
</tr>
<tr>
<td># 196</td>
<td>176</td>
<td>31</td>
<td>T</td>
<td>D</td>
<td>Change &quot;They interrupt any transfer that is already occurring&quot; to read &quot;Such blocks interrupt any data transfer that is already in progress&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Sponsor</td>
<td>Hajduczenia, Marek</td>
<td>ZTE Corp.</td>
<td># 196</td>
<td></td>
</tr>
<tr>
<td># 197</td>
<td>176</td>
<td>33</td>
<td>T</td>
<td>D</td>
<td>periodically deleting IPG from the XLGMII/CGMII data stream. - this is the only location where IPG deletion function is mentioned at all. Some more details would be more than welcome</td>
<td>Per comment</td>
<td>O</td>
<td>Sponsor</td>
<td>Hajduczenia, Marek</td>
<td>ZTE Corp.</td>
<td># 197</td>
<td></td>
</tr>
<tr>
<td># 198</td>
<td>175</td>
<td>54</td>
<td>T</td>
<td>D</td>
<td>and the alignment markers are removed before decoding is performed in the receive PCS.change to read &quot;and the alignment markers are removed before 64B/66B decoding is performed in the receive PCS.&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Sponsor</td>
<td>Hajduczenia, Marek</td>
<td>ZTE Corp.</td>
<td># 198</td>
<td></td>
</tr>
<tr>
<td># 199</td>
<td>175</td>
<td>33</td>
<td>T</td>
<td>D</td>
<td>One XLGMII/CGMII data transfer is encoded into each block.change to read &quot;One XLGMII/CGMII data transfer is encoded into one 66-bit block.&quot;</td>
<td>Per comment</td>
<td>O</td>
<td>Sponsor</td>
<td>Hajduczenia, Marek</td>
<td>ZTE Corp.</td>
<td># 199</td>
<td></td>
</tr>
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<td>Comment Status</td>
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<td>Comment</td>
<td>Type</td>
<td>Comment Status</td>
<td>Proposed Response</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>TR/technical required</td>
<td>D/dispatched</td>
<td>Response Status</td>
<td>O/open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>202</td>
<td>T/editorial</td>
<td>D/dispatched</td>
<td>Response Status</td>
<td>O/open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>203</td>
<td>TR/technical required</td>
<td>D/dispatched</td>
<td>Response Status</td>
<td>O/open</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Cl 82 SC 82.2.7 P 177 L 42 # 207
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D

(1) It would help if the example shown in ine 42 was formatted in a similar manner to what
is used in Figure 82-9. Similar comment about example on page 179, line 36(2) In line 44,
"After the alignment markers are added, the data is sent to the PMA" change to read "After
alignment markers are inserted, data is sent to PMA"

Suggested Remedy
Per comment

Proposed Response  
Response Status: O

Cl 82 SC 82.2.7 P 178 L 3 # 208
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D

In table 82-2, note (a) is added only to column 2 and should be also added to column 4,
after the word "Encoding".

Suggested Remedy
Per comment

Proposed Response 
Response Status: O

Cl 82 SC 82.2.8 P 178 L 50 # 209
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D

(1) "A BIP field is added to each PCS Lane alignment marker. This allows accurate and
fast determination of the bit error ratio of a given PCS Lane. This information is only used
to update error counters, no state machines use this information." should read as: "A BIP
field is added to each PCS Lane alignment marker on positions 3 and 7. This allows
accurate and fast determination of the bit error ratio of a given PCS Lane. This information
is only used to update error counters. No state machines use this information." (2)
Considering that BIP fields are quite spaced apart, this method of calculating BER seems
to be quite limited in terms of efficiency.

Suggested Remedy
Per comment

Proposed Response 
Response Status: O

Cl 82 SC 82.2.8 P 179 L 2 # 210
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D

The BIP3 field is a bit interleaved parity calculation. change to read "The BIP3 field contains
the result of a bit interleaved parity calculation."

Suggested Remedy
Per comment

Proposed Response 
Response Status: O

Cl 82 SC 82.2.8 P 179 L 12 # 211
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D

Table 82-4 probably represents "BIP3 bit assignment". Also, it is not clear what these
"assigned 66b word bits" are ? There is no clear description how BIP3 and BIP7 is
calculated - suggest to provide a clear example for this end.

Suggested Remedy
Per comment

Proposed Response 
Response Status: O

Cl 82 SC 82.2.8 P 179 L 44 # 212
Hajduczenia, Marek ZTE Corp.

Comment Type: T  Comment Status: D

Lines 44 - 54 contain description of what is shown in Figure 82-3 and 82-4. Why have it in
here? It occupies a lot of space, and does not bring anything new to the specifications.

Suggested Remedy
Per comment

Proposed Response 
Response Status: O

---

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Comment ID
Proposed Response
Per comment

Comment ID # 213

Cl 82 SC 82.2.10 P 180 L 3
Hajduczenia, Marek
ZTE Corp.

Comment Type T Comment Status D

(1) line 3: "The PCS shall generate and detect a scrambled idle test pattern." or "The PCS shall have the ability to generate and detect a scrambled idle test pattern." (2) line 6: "When scrambled idle pattern is selected," > "When a scrambled idle pattern is enabled," (3) line 9: "and deskew the PCS lanes." > "and deskew individual PCS lanes."

SuggestedRemedy
Per comment

Proposed Response Response Status O

Comment ID # 214

Cl 82 SC 82.2.10 P 180 L 15
Hajduczenia, Marek
ZTE Corp.

Comment Type T Comment Status D

Provide a reference to the described functionality.

SuggestedRemedy
Per comment

Proposed Response Response Status O

Comment ID # 215

Cl 82 SC 82.2.12 P 180 L 27
Hajduczenia, Marek
ZTE Corp.

Comment Type T Comment Status D

(1) "PCS lane deskew" > "PCS lane deskew process" (2) in line 29: "Once the receiver has PCS lane lock on each PCS lane (4 or 20 lanes), then the process of deskew the" > "Once the receiver has PCS lane lock on each PCS lane (4 or 20 lanes, for 40GBASE-R and 100GBASE-R, respectively), the process of deskewing" (3) in line 31: "After alignment marker lock" > "After the alignment marker lock" (4) in line 32: "is achieved, then any lane to lane skew can be removed as shown in the PCS deskew state diagram in Figure 82-12." > "is achieved, then any the intra-lane skew between any two PCS lanes can be removed as shown in Figure 82-12."

SuggestedRemedy
Per comment

Proposed Response Response Status O

Comment ID # 216

Cl 45 SC 45 P 54 L 39
Turner, Edward J
Gnodal Limited

Comment Type E Comment Status D

Table 45-59a. No line at the bottom of the table.

SuggestedRemedy
Add line to bottom of table as per other tables split over pages

Proposed Response Response Status O

Comment ID # 217

Cl 45 SC 45 P 85 L 50
Turner, Edward J
Gnodal Limited

Comment Type E Comment Status D

No line at the bottom of the table.

SuggestedRemedy
Add line to bottom of table as per other tables split over pages

Proposed Response Response Status O

Comment ID # 218

Cl 81 SC 81 P 160 L 51
Turner, Edward J
Gnodal Limited

Comment Type E Comment Status D

The line at the bottom of the table is thinner than usual.

SuggestedRemedy
Thicken the line at bottom of table

Proposed Response Response Status O

Comment ID # 219

Cl 82 SC 82 P 174 L 25
Turner, Edward J
Gnodal Limited

Comment Type E Comment Status D

Table 82-1. All lines are the same thickness.

SuggestedRemedy
Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

Proposed Response Response Status O

Comment ID #
Table 82-2. All lines are the same thickness.

**Suggested Remedy**

Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

**Response Status**

O

---

Table 82-3. All lines are the same thickness.

**Suggested Remedy**

Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

**Response Status**

O

---

Table 82-4. All lines are the same thickness.

**Suggested Remedy**

Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

**Response Status**

O

---

Table 82-5. All lines are the same thickness.

**Suggested Remedy**

Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

**Response Status**

O

---

Table 82-6. All lines are the same thickness.

**Suggested Remedy**

Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

**Response Status**

O

---

Table 82-7. All lines are the same thickness.

**Suggested Remedy**

Use thicker lines for the table border and around the title cells, as per tables in the other clauses.

**Response Status**

O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>CI 82 SC 82 P 196 L 4</th>
<th>Turner, Edward J Gnodal Limited</th>
</tr>
</thead>
</table>
| Comment Type | E                       | Comment Status: D  
Table line thickness of PICS table is not same as in other clauses. |
| Suggested Remedy | Use thicker lines for the table border and around the title cells, as per tables in the other clauses. |
| Proposed Response | Response Status: O      |                                  |

<table>
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<tr>
<th>Comment ID</th>
<th>CI 82 SC 82 P 196 L 25</th>
<th>Turner, Edward J Gnodal Limited</th>
</tr>
</thead>
</table>
| Comment Type | E                       | Comment Status: D  
Table line thickness of PICS tables is not same as in other clauses. |
| Suggested Remedy | Use thicker lines for the table border and around the title cells, as per tables in the other clauses. Apply to all tables in this subsection. |
| Proposed Response | Response Status: O      |                                  |

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>CI 83 SC 83 P 216 L 49</th>
<th>Turner, Edward J Gnodal Limited</th>
</tr>
</thead>
</table>
| Comment Type | E                       | Comment Status: D  
Table 83-4. No line at the bottom of the table. |
| Suggested Remedy | Add line to bottom of table as per other tables split over pages |
| Proposed Response | Response Status: O      |                                  |

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>CI 83 SC 83 P 219 L 3</th>
<th>Turner, Edward J Gnodal Limited</th>
</tr>
</thead>
</table>
| Comment Type | E                       | Comment Status: D  
Table line thickness of PICS table is not the same as in other clauses. |
| Suggested Remedy | Use thicker lines for the table border and around the title cells and thin lines for the inside of the table, as per tables in the other clauses. Apply to PICS tables in 83.7.4, 83.7.5, 83.7.6 |
| Proposed Response | Response Status: O      |                                  |
Cl 84 SC 84 P 226 L 47 # 232

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 84-3. No line at the bottom of the table.

Suggested Remedy:
Add line to bottom of table as per other tables split over pages

Proposed Response: Response Status: O

Cl 85 SC 85 P 257 L 16 # 236

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 85-9. Thin line under title cells.

Suggested Remedy:
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response: Response Status: O

Cl 85 SC 85 P 238 L 54 # 233

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 85-3. No line at the bottom of the table.

Suggested Remedy:
Add line to bottom of table as per other tables split over pages

Proposed Response: Response Status: O

Cl 85 SC 85 P 261 L 20 # 237

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 85-10. Thin line under title cells.

Suggested Remedy:
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response: Response Status: O

Cl 85 SC 85 P 247 L 22 # 234

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 85-5. Thin line under title cells.

Suggested Remedy:
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response: Response Status: O

Cl 85 SC 85 P 265 L 37 # 238

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 85-11. Thin line under title cells.

Suggested Remedy:
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response: Response Status: O

Cl 85 SC 85 P 256 L 7 # 235

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Table 85-8. Thin line under title cells.

Suggested Remedy:
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response: Response Status: O

Cl 85 SC 85 P 278 L 5 # 239

Turner, Edward J Gnodal Limited

Comment Type: E Comment Status: D

Thin line under title cells.

Suggested Remedy:
Use a thicker line under the title cells, as per PICS tables in other clauses

Proposed Response: Response Status: O
Cl 87 SC 87 P 324 L 10 # 240
Turner, Edward J Gnodal Limited

Comment Type: E  Comment Status: D
Table 87-13. Thick vertical line between cells.

SuggestedRemedy
Use a thin vertical line between cells, as per tables in other clauses.

Proposed Response

Response Status: O

Cl 88 SC 88 P 351 L 19 # 241
Turner, Edward J Gnodal Limited

Comment Type: E  Comment Status: D
Table 88-13. Thick vertical line between cells.

SuggestedRemedy
Use a thin vertical line between cells, as per tables in other clauses.

Proposed Response

Response Status: O

Cl 83A SC 83A.7.3 P 392 L 4 # 242
Turner, Edward J Gnodal Limited

Comment Type: E  Comment Status: D
Table line thickness and style of PICS table is not same as in other clauses.

SuggestedRemedy
Use thicker lines for the table border and around the title cells and thin lines between cells, as per tables in the other clauses. Also apply to other PICS tables in 83B.4.

Proposed Response

Response Status: O

Cl 83B SC 83B.4.3 P 407 L 4 # 243
Turner, Edward J Gnodal Limited

Comment Type: E  Comment Status: D
Table line thickness and style of PICS table is not same as in other clauses.

SuggestedRemedy
Use thicker lines for the table border and around the title cells and thin lines between cells, as per tables in the other clauses. Also apply to other PICS tables in 83B.4.

Proposed Response

Response Status: O

Cl 86A SC 86A.5.3.8.6 P 437 L 25 # 244
Turner, Edward J Gnodal Limited

Comment Type: E  Comment Status: D
Table 86A-7. Thick vertical line between cells.

SuggestedRemedy
Use a thin vertical line between cells, as per tables in other clauses.

Proposed Response

Response Status: O

Cl 82 SC 82 P 195 L 43 # 245
Turner, Edward J Gnodal Limited

Comment Type: E  Comment Status: D
PICS table does not have space above Date of statement.

SuggestedRemedy
Other PICS Protocol summary tables seem to have a space above Date of statement. In this revision, some have a space and some dont. You may want to make all PICS summary tables consistent, though the base edition seems to have the same inconsistency in the formatting.

Proposed Response

Response Status: O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>CL</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>Type</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>246</td>
<td>85</td>
<td>85</td>
<td>237</td>
<td>30</td>
<td>T/R</td>
<td>E</td>
<td>D</td>
<td>No space between the and 100GBASE-CR10</td>
<td>Add a space between the and 100GBASE-CR10</td>
<td>O</td>
</tr>
<tr>
<td>247</td>
<td>85</td>
<td>85</td>
<td>272</td>
<td>7</td>
<td>T/R</td>
<td>E</td>
<td>D</td>
<td>No space between Clause and 85</td>
<td>Add a space between Clause and 85</td>
<td>O</td>
</tr>
<tr>
<td>248</td>
<td>85</td>
<td>85</td>
<td>245</td>
<td>18</td>
<td>T/R</td>
<td>E</td>
<td>D</td>
<td>The apostrophe on assembly's is a sans-serif type, whereas the style elsewhere is to use a serif type with a tail.</td>
<td>Use serif apostrophe. Also on page 246 at line 38, and page 339 at line 30.</td>
<td>O</td>
</tr>
<tr>
<td>249</td>
<td>85</td>
<td>85</td>
<td>248</td>
<td>18</td>
<td>T/R</td>
<td>E</td>
<td>D</td>
<td>The quote marks are a sans-serif type, whereas the style elsewhere is to use a serif type with a tail.</td>
<td>Use serif quote marks. Also at lines 22 and 25 on the same page.</td>
<td>O</td>
</tr>
<tr>
<td>324</td>
<td>87</td>
<td>87</td>
<td>324</td>
<td>53</td>
<td>T/R</td>
<td>E</td>
<td>D</td>
<td>Single quote marks are used, whereas elsewhere double quote marks are used.</td>
<td>Use double quote marks. Also at line 54 on the same page, and on page 325 at lines 15 and 16.</td>
<td>O</td>
</tr>
<tr>
<td>251</td>
<td>85</td>
<td>85</td>
<td>255</td>
<td>9</td>
<td>T/R</td>
<td>E</td>
<td>D</td>
<td>The referenced section 86.8.8.2 does not exist.</td>
<td>Replace with 86.8.2.</td>
<td>O</td>
</tr>
</tbody>
</table>
**Comment ID # 252**

**Cl:** 45  **SC:** 45  **P:** 82  **L:** 9  **#:** 252

Turner, Edward J  
Gnodal Limited

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

Table 45-114a. The table title incorrectly says it is for lanes 0 and 1, but it is only actually for lane 0.

**Suggested Remedy:**
Replace with Table 45-114a-BIP error counter, lane 0 register bit definitions.

**Proposed Response**  **Response Status:** O

---

**Comment ID # 253**

**Cl:** 85  **SC:** 85  **P:** 266  **L:** 28  **#:** 253

Turner, Edward J  
Gnodal Limited

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

Style-2 has a lower case s whereas elsewhere it has an uppercase s.

**Suggested Remedy:**
Capitalize the s.

**Proposed Response**  **Response Status:** O

---

**Comment ID # 254**

**Cl:** 85  **SC:** 85  **P:** 269  **L:** 37  **#:** 254

Turner, Edward J  
Gnodal Limited

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

There are two references to IEC XXXXX-X-XX

**Suggested Remedy:**
Replace with a valid reference.

**Proposed Response**  **Response Status:** O

---

**Comment ID # 255**

**Cl:** 01  **SC:** 1.3  **P:** 25  **L:** 18  **#:** 255

Thompson, Michael  
Pentair Electronic Pac

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

There is a newer version of this standard available.

**Suggested Remedy**
IEC 61280-1-4:2009

**Proposed Response**  **Response Status:** O

---

**Comment ID # 256**

**Cl:** A  **SC:** A  **P:** 361  **L:** 10  **#:** 256

Young, George  
AT&T

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

Correct the title of the G.709 reference document to be as specified by ITU-T

**Suggested Remedy:**
Change the title of this reference to read "Interfaces for the Optical Transport Network (OTN)."

**Proposed Response**  **Response Status:** O

---

**Comment ID # 257**

**Cl:** 86  **SC:** 86.10.2.2.1  **P:** 297  **L:** 50  **#:** 257

Cobb, Terry  
CommScope Solutions

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

By using low loss connectors the distance for OM3 can be increased to 125m and OM4 to 150m. This requires no changes to anything else in the document and essentially comes free. These low loss connectors are available from many manufacturers.

**Suggested Remedy:**
Change 86.10.2.2.1 Connection insertion loss to read:

The operating link distances in the tables is based on an allocation of 1.5 dB total connection and splice loss. For example, this allocation supports two connections, each with an insertion loss of 0.75 dB. However, the loss of a single connection shall not exceed 0.75 dB.

Connections with lower loss characteristics may be used provided the requirements of Table 86-14 are met. By reducing the connection and splice loss from 1.5 dB to 1.0 dB the operating distance for OM3 can be extended to 120 meters and the operating distance for OM4 can be extended to 150 meters.

**Proposed Response**  **Response Status:** O
<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>30.3.2.1.2</td>
<td>31</td>
<td>9</td>
<td>258</td>
<td>E</td>
<td>D</td>
<td>Trowbridge, Stephen</td>
<td>ALCATEL-LUCENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P802.3ba PMDs are all comprised of multiple physical lanes and multiple PCS lanes. Future interfaces, e.g. under investigation by the 40Gb/s Ethernet Single-mode Fibre PMD Study Group, may not be multiple physical lanes but will still be multiple PCS lanes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong> Change &quot;40 Gb/s multi-lane 64B/66B&quot; to &quot;40 Gb/s multi-PCS lane 64B/66B&quot; and &quot;100 Gb/s multi-lane 64B/66B&quot; to &quot;100 Gb/s multi-PCS lane 64B/66B&quot;. Same change in sub-clause 30.3.2.1.3 lines 18-19</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>82.2.7</td>
<td>176</td>
<td>48</td>
<td>259</td>
<td>TR</td>
<td>D</td>
<td>Trowbridge, Stephen</td>
<td>ALCATEL-LUCENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>In Figure 82-7, &quot;PCS lane n&quot; should be &quot;PCS lane n-1&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong> per comment</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.2.1.89</td>
<td>59</td>
<td>27</td>
<td>261</td>
<td>E</td>
<td>D</td>
<td>Trowbridge, Stephen</td>
<td>ALCATEL-LUCENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Since FEC is on a PCS lane basis, this text applies even when the PHY itself is serial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong> Change &quot;multi-lane BASE-R PHYs&quot; to &quot;multi-PCS lane BASE-R PHYs&quot; and &quot;multi-lane PHYs&quot; to multi-PCS lane PHYs&quot; on the following line. Also sub-clause 45.2.1.90 on lines 40-41 (same page), sub-clause 45.2.1.91 lines 53-54(same page), sub-clause 45.2.1.92 lines 7-8 (p60), sub-caluse 45.2.1.93 lines 16-17 (p60), and sub-clause 45.2.1.94 lines 25-26 (p60).</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>74.8.4.1</td>
<td>122</td>
<td>44</td>
<td>263</td>
<td>E</td>
<td>D</td>
<td>Trowbridge, Stephen</td>
<td>ALCATEL-LUCENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>While -KR and -CR PHYs may not be serial for a long time, the applicability of FEC is to PHYs with multiple PCS lanes, even if they eventually do not have multiple physical lanes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong> Change &quot;Non Multi-lane BASE-R device&quot; to &quot;Non multi-PCS lane BASE-R device&quot;. Same issue lines 34, 42 same page</td>
<td></td>
</tr>
</tbody>
</table>

**Suggested Remedy**

- Change "multi-lane PHYs" to "multi-PCS lane PHYs".
- Same issue with 41.2.1.88, page 59, line 16.

**Proposed Response**

- Change "multi-lane BASE-R PHYs" to "multi-PCS lane BASE-R PHYs" and "multi-lane PHYs" to multi-PCS lane PHYs" on the following line. Also sub-clause 45.2.1.90 on lines 40-41 (same page), sub-clause 45.2.1.91 lines 53-54(same page), sub-clause 45.2.1.92 lines 7-8 (p60), sub-caluse 45.2.1.93 lines 16-17 (p60), and sub-clause 45.2.1.94 lines 25-26 (p60).
The words "multi-lane" generally refer to multiple PCS lanes, generic service interface lanes, or PMD lanes. Using this term in the context of the RS makes it sound as though the RS extends further down the stack than it does.

**Suggested Remedy**

Change "The RS adapts the bit serial protocols of the MAC to the multi-lane serial encodings of the PHYs" to "The RS adapts the bit serial protocols of the MAC to the parallel format of the PCS service interface".

Proposed Response Response Status O

---

It would help to clarify that it is PCS lanes that are described here (vs. generic service interface of PMD lanes).

**Suggested Remedy**

Change "stripe the data to multiple lanes" to "stripe the data to multiple PCS lanes".

Proposed Response Response Status O

---

The management clause needs to change to align with a corresponding comment to clause 82 to reflect the fact that during the block lock and alignment marker lock processes, these are just service interface lanes and which PCSL may be received over them are unknown.

**Suggested Remedy**

Check that the description of lane_<x>_lock and lane_<x>_aligned do not imply that these are PCSLs rather than service interface lanes. Add new lane_mapping<x> status variable corresponding to clause 82 change to indicate which PCSL is received on each service interface lane.

Proposed Response Response Status O
Proposed Response

Cl 83B SC 83B.2 P 398 L 29 # 271
Trowbridge, Stephen ALCATEL-LUCENT

Comment Type ER Comment Status D
The sentence "HCB PCB targeted to 2.1dB" reflects the HCB loss value extracted from the equality equation 83B-3. Therefore, the HCB loss value should be identified as a target value.

SuggestedRemedy
Change title to: "HCB PCB targeted to 2.1dB"

Proposed Response Response Status O

Cl 83B SC 83B.2 P 399 L 36 # 272
Trowbridge, Stephen ALCATEL-LUCENT

Comment Type ER Comment Status D
The sentence "MCB PCB targeted to 2.1dB" reflects the MCB loss value extracted from the equality equation 83B-4. Therefore, the MCB loss value should be identified as a target value.

SuggestedRemedy
Change title to: "MCB PCB targeted to 2.1dB"

Proposed Response Response Status O

Cl 83B SC 83B.2 P 397 L 27 # 273
Trowbridge, Stephen ALCATEL-LUCENT

Comment Type ER Comment Status D
The sentence "The effects of differences between the insertion loss of an actual test fixture and the reference insertion should be accounted for in the measurements." is not normative.

SuggestedRemedy
Change to: "The effect of the difference between the insertion loss of an actual HCB and the reference insertion loss are to be accounted in the measurements."

Proposed Response Response Status O
Comment Type: ER
Comment Status: D
The sentence "The effects of differences between the insertion loss of an actual test fixture and the reference insertion should be accounted for in the measurements." is not normative.
Suggested Remedy
Change to: "The effect of the difference between the insertion loss of an actual MCB and the reference insertion loss are to be accounted in the measurements."

Comment ID # 274

Comment Type: T
Comment Status: D
The use of an approximate value in a table that is covered by a shall statement seems to be inappropriate. It is also inconsistent with most of the other clauses that chose to use the exact absolute time values for the delay constraints expressed in ns. Since this value is well defined, is there any reason why the precise value should not be used?
Suggested Remedy
Replace "~1410" with "409.6" and "~246" with "245.76".

Comment ID # 275

Comment Type: TR
Comment Status: D
The delay constraint, expressed in bit times, for the 40G MAC, RS and MAC Control, is incorrect and does not correspond to the values in pause_quanta and absolute time in ns. It is also different from the value used elsewhere in the draft.
Suggested Remedy
Replace "10240" with "16384".

Comment ID # 276

Comment Type: ER
Comment Status: D
It seems that the entire Link Fail Signaling section has been copied from clause 46 (with the relevant modifications), except for the state diagram itself. Saving trees is a good thing. However, state diagrams are too important to be scattered around and be referenced to in different portions of the standard, 35 clauses apart. It would greatly help "making it easy for the reader to select relevant specification" (from our 5-criteria) if all the relevant state diagrams were in one place.
Suggested Remedy
Copy the Link Fail Signaling state diagram from Figure 46-9 to the end of this subclause. Also, change all references from Figure 46-9 to this new figure, Figure 48-9.
Cl 82 SC 82.2.18.3 P190 L13 #279
Muller, Shimon Sun Microsystems

Comment Type ER Comment Status D
The am_invld_cnt variable assignment is state AM_RESET_CNT seems to be garbled.

Suggested Remedy
Replace "am" and "nvld_cnt <= 0" with "am_invld_cnt <= 0".

Proposed Response Response Status O

Cl 83 SC 83.5.4 P211 L21 #280
Muller, Shimon Sun Microsystems

Comment Type TR Comment Status D
For the 40GBASE-R PMA I am wondering what rounding scheme was used to get from 102.4ns to ~104ns?
Furthermore: The use of an approximate value in a table that is covered by a shall statement seems to be inappropriate. It is also inconsistent with most of the other clauses that chose to use the exact absolute time values for the delay constraints expressed in ns. Since this value is well defined, is there any reason why the precise value should not be used?

Suggested Remedy
Replace "~104" with "102.4" and "~92" with "92.16".

Proposed Response Response Status O

Cl 84 SC 84.7.4 P227 L38 #281
Muller, Shimon Sun Microsystems

Comment Type E Comment Status D
SIGNAL_DETECT is set to OK only when training is successful.

Suggested Remedy
Insert "successful" between "Upon" and "completion".

Proposed Response Response Status O

Cl 85 SC 85.7.4 P241 L30 #282
Muller, Shimon Sun Microsystems

Comment Type E Comment Status D
SIGNAL_DETECT is set to OK only when training is successful.

Suggested Remedy
Insert "successful" between "Upon" and "completion".

Proposed Response Response Status O

Cl 81 SC 1.3 P25 L20 #283
Dawe, Piers J G Independant

Comment Type E Comment Status D

Suggested Remedy
at line 20. Date the reference, leave the 2003 reference for Cl.68 use until maintenance tidies up. Remove editor's note at line 23

Proposed Response Response Status O

Cl 80 SC 80.1.5 P128 L33 #284
Dawe, Piers J G Independant

Comment Type E Comment Status D
A NOTE is not part of the standard. Table 80-2 needs a key to explain O and M that is part of the standard. Compare Table 44-1, Table 56-2 and Table 69-1. Also for ease of maintenance, note should be tied to table.

Suggested Remedy
Remove informative NOTE, add table note as for tables mentioned.

Proposed Response Response Status O
Following up on D2.2 comment 69, "There are two error counting mechanisms that can be used on 64B/66B signals: errored blocks and BIP errors... We should be unambiguous which is meant by BER for the purposes of compliance. As the errored block counter is not very good in service at marginal and good BERs, we expect in-service monitoring to use BIP (that's why it was introduced). It is HIGHLY desirable that the same definition of BER apply in compliance testing with the scrambled idle signal as in service."

Also it seems that the 82.2.17 test-pattern checker will typically count 2 for an isolated error while the 82.2.14 BIP checker will count 1. For isolated errors, the BIP checker will correspond to frame loss statistics.

Note that any change to the PCS operation would be a simplification, and option 1 below makes no change.

Suggested Remedy

Option 1: no change to silicon: Add text to 82.2.17 line 33 "However, the BIP error count according to 82.2.14 is the preferred measure for BER." At 82.2.14 line 14, add "The BIP error count determines the BER for compliance purposes."

Option 2: To bring the definition of BER in scrambled idle test pattern mode in line with the expected de-facto definition of errors in service, it would be desirable to change: "When operating in scrambled idle test pattern, the test-pattern error counter counts blocks with a mismatch. Any mismatch indicates an error and shall increment the test-pattern error counter." to "When operating in scrambled idle test pattern, the test-pattern error counter counts BIP errors according to 82.2.14."

There may be consequential changes to wording in Clause 45.

Proposed Response

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: Comment ID

Comment ID: 286
Type: TR/technical required

Proposed Response

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: Comment ID

Comment ID: 287
Type: TR/technical required

Proposed Response
Asking for something to be random is not a good idea. Random means by chance, and it's very difficult to implement a true random number generator and very difficult or impossible to test for. However, randomness is not the point, and at least here there is no "shall" so no conformance test.

Suggested Remedy
Change
"To avoid correlated crosstalk, it is highly recommended that the PRBS31 patterns generated on each lane be generated from independent, random seeds at a minimum offset of 20,000 UI between the PRBS31 sequence on any lane and any other lane."

Draft says "Other inputs to the SIL may include the status of clock and data recovery on the lanes from the service interface below the PMA (where the interface to is physically instantiated)" This interface is almost certain to be instantiated, even if inside an IC, and whether it is or not, the status of clock and data recovery could (should) be taken into account.

Suggested Remedy
Delete "(where the interface to is physically instantiated)"

Proposed Response
Response Status O

Proposed Response
Response Status O
**Comment ID # 292**

**Comment Type**: TR  
**Comment Status**: D  
**Dawe, Piers J G Independant**

**Comment**: The 40GBASE-KR4 service interface should be like the 10GBASE-KR service interface. For 40GBASE-KR4, draft says "When SIGNAL_DETECT = FAIL, the IS_UNITDATA_i.indication parameters are undefined, but consequent actions interpret IS_UNITDATA_i.indication as a logic zero." The 10GBASE-KR PMD utilizes the PMD service interface defined in 52.1.1. 52.1.1.3.1 says simply "When SIGNAL_DETECT = FAIL, PMD_UNITDATA.indication(rx_bit) is undefined.". Note that there is no specification for consequent actions; this is deliberate, as the "consequent actions" includes a CDR, which needs transitions. There is no requirement for squelch. (Editorial: should have been "a zero" not "a logic zero").

**Suggested Remedy**: Delete "but consequent actions interpret IS_UNITDATA_i.indication as a logic zero" here and in 85.2. There is another comment for the optical PMDs.

**Proposed Response**: Response Status O

---

**Comment ID # 293**

**Comment Type**: T  
**Comment Status**: D  
**Dawe, Piers J G Independant**

**Comment**: Draft says "The cable assembly test fixture of Figure 85-12 or its functional equivalent, is required". Elsewhere in 802.3, "functional" is used to represent something more high level, or digital e.g. "4.1 Functional model of the MAC method" and "85.13.4.1 PMD Functional specifications". Here, we need electrical equivalence. Also, if you use the words "is required", do you need a PICS?

**Suggested Remedy**: Change "The cable assembly test fixture of Figure 85-12 or its functional equivalent, is required". to "The cable assembly test fixture of Figure 85-12 or its equivalent, is used".

**Proposed Response**: Response Status O

---

**Comment ID # 294**

**Comment Type**: TR  
**Comment Status**: D  
**Dawe, Piers J G Independant**

**Comment**: Draft has a table row "Unit interval nominal 85.8.3.8 96.969697 ps". No other 10G/lane PMD has a similar row. However many digits you add, it will never be correct because 1000/10.3125 is a recurring decimal.

**Suggested Remedy**: Delete the row, here and in Table 85-6. Delete "The corresponding unit interval is nominally 96.969697 ps." in 85.8.3.8. If you think that not all your readers know what a unit interval is, as it's the same for Tx and Rx, add a sentence at 85.8, "The 40GBASE-ER4 and 100GBASE-ER10 PMDs use NRZ signaling at nominally 10.3125 Gbd on each lane, for which the unit interval is approximately 96.97 ps."

**Proposed Response**: Response Status O

---

**Comment ID # 295**

**Comment Type**: TR  
**Comment Status**: D  
**Dawe, Piers J G Independant**

**Comment**: "The receiver interference tolerance tests shall be implemented": That's wrong; there should be no requirement to implement tests, only requirements to achieve performance. need to change the sentence more, e.g. "To be compliant the receiver interference tolerance shall satisfy the requirements of 85.8.4.3 to 85.8.4.3.4 with the parameters given in Table 85-7." 85.8.4.3 should be 85.8.4.2.1. Also, please use proper square root sign in the table.

**Suggested Remedy**: Change "The receiver interference tolerance tests shall be implemented using the receiver interference tolerance parameters summarized in Table 85-7." to either:

- "The receiver interference tolerance of each lane shall comply with the parameters of Table 85-7 if measured according to the methods of 85.8.4.3 to 85.8.4.3.4." to either:
  - or:
    - "Receiver interference tolerance tests is defined by the methods of 85.8.4.3 to 85.8.4.3.4 and the parameters given in Table 85-7." and delete the PICS.

**Proposed Response**: Response Status O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>296</td>
<td>E</td>
<td>D</td>
<td>Please use proper square root sign.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>297</td>
<td>E</td>
<td>D</td>
<td>This subclause is a part of Receiver interference tolerance test at TP3</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>298</td>
<td>T</td>
<td>D</td>
<td>Need some text to explain what this is all about. I've made the comment technical in case my description needs correction.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>299</td>
<td>TR</td>
<td>D</td>
<td>Is the factor of 2 correct here?</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>300</td>
<td>TR</td>
<td>D</td>
<td>Any PMD should provide the same BER performance at the MAC-PLS service interface irrespective of the number of lanes. It doesn't matter how the errors are divided among the lanes. See other comments for 87 and 88, and for 86A.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>301</td>
<td>T</td>
<td>D</td>
<td>Eye diagrams, J9, and if it matters, J2 and AC common-mode voltage, are measured with all lanes running so any crosstalk is included. We forgot to mention this.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>Comment ID</td>
<td>Comment Type</td>
<td>Comment Status</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td></td>
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<td>------------</td>
<td>--------------</td>
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<td>-------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>CI 86 SC 86.10.3.2</td>
<td>E</td>
<td>D</td>
<td>Delete &quot;signal&quot;.</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CI 87 SC 87.2</td>
<td>TR</td>
<td>D</td>
<td>The 40GBASE-LR4 service interface should be like the 10GBASE-LR service interface. For 40GBASE-LR4, draft says &quot;When SIGNAL_DETECT=FAIL, the IS_UNITDATA_i.indication parameters are undefined, but consequent actions interpret IS_UNITDATA_i.indication as a logic zero,&quot; while 52.1.1.3.1 says simply &quot;When SIGNAL_DETECT = FAIL, PMD_UNITDATA.indication(rx_bit) is undefined.&quot; Note that there is no specification for consequent actions; this is deliberate, as the &quot;consequent actions&quot; includes a CDR, which needs transitions. There is no requirement for squelch. (Editorial: should have been &quot;a zero&quot; not &quot;a logic zero&quot;).</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CI 87 SC 87.7.1</td>
<td>T</td>
<td>D</td>
<td>Any PMD should provide the same BER performance at the MAC-PLS service interface irrespective of the number of lanes. It doesn't matter how the errors are divided among the lanes. See other comment for 86.8.4.7 and 86A.5.3.8.1.</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CI 87 SC 87.8.11.1</td>
<td>T</td>
<td>D</td>
<td>&quot;the data rate&quot; (40 Gb/s or 100 Gb/s) is irrelevant here.</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CI 87 SC 87.8.11.1</td>
<td>T</td>
<td>D</td>
<td>Too many &quot;should&quot;s allow uncertainty.</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>
"data dependent effects should be minimal, and short data patterns can be used": if it's a test pattern it's not data.

**Change to** "pattern dependent effects should be minimal, and short patterns can be used".

---

The fraction of VECP created by the filter has an important effect on SRS stress.

**Change "should be created" to "is created".**

---

Too many "should"s allow uncertainty.

**Change "should result" to "results".**

---

Title says "100GBASE-LR4 operating range" yet table covers 100GBASE-ER4 also.

**Change title**

---

We should not call part of the receiver a "transmitter" or part of the transmitter a "receiver", if we can avoid it.

According to 83.3, a PMA has TX and RX directions, each of which has an input and an output. nAUI is intended to connect PMAs, e.g. one in the host and one in a module. Therefore nAUI must connect a (host) TX (transmitter) output to a (module) transmitter input, and a (module) RX (receiver) output to a (host) receiver input. 83B used to use, and 86A uses, the terms host output, module input, module output, host input, according to resolution of D2.0 comment 470: "ACCEPT IN PRINCIPLE. Need to avoid using "receive" or "receiver" on the transmit path (down the stack, PMA to MDI) or "transmit" or "transmitter" on the receive path (up the stack, MDI to PMA).

Change names using the terms host, module, input and output. For example, in the caption of Table 86-6 change "PPI electrical transmit signal output specifications at TP1a" to "nPPI host electrical output specifications at TP1a"

This is compatible with 83 and the rest of 802.3ba except 83A and now 83B. But Figure 83A-2 shows two "Transmitter"s and two "Receiver"s, one for each direction. This isn't compatible terminology.

Note this problem does not arise in clauses 84 or 85.

Also compare Clause 47 (XAUI) which uses "driver" and "receiver" for the ports of the ICs. The proposed remedies follow 86A for connector-related items and 47 for IC-related items.

**Change "Transmitter" to "driver", "Transmit Compliance Point" to "driver compliance point", "transmit eye mask" and "Transmitter Eye Mask" to "driver eye mask" or just "eye mask", "transmit signal" to "signal" or "output signal", "transmit jitter" to "driver jitter" throughout 83A. In Table 83A-2, delete "Receiver" before "eye mask", five times including table note. Consider changing "XLAUI/CAUI receiver" to "XLAUI/CAUI component receiver" where appropriate. Change "Figure 83A-2--Definition of transmit and receive test points" to "Figure 83A-2--Definition of test points".
Comment Type: T | Comment Status: D
I didn't notice any "functional requirements" in Annex 83B: coding, skew and such are in 83. 83B is electrical.

Suggested Remedy
Delete "functional and".

Proposed Response | Response Status: O

Comment Type: ER | Comment Status: D
Font too small in Figures (6.5 or 7 pt, should not be smaller than 8 pt). This may be because the charts in 83A have been shrunk.

Suggested Remedy
Don't shrink the figures. Check all clauses for font too small.

Proposed Response | Response Status: O

Comment Type: ER | Comment Status: D
Too many gratuitous capitals. This is an ER comment because we are unlikely to catch them all in one cycle.

Suggested Remedy
Scrub the draft, all clauses and annexes.

Proposed Response | Response Status: O

Comment Type: TR | Comment Status: D
De-emphasis means a relative attenuation of the higher frequencies, as in "Dolby noise reduction is a form of dynamic preemphasis employed during recording, plus a form of dynamic deemphasis used during playback". Or according to the ANSI standard "ATIS Telecom Glossary 2007", deemphasis is "In FM transmission, the process of restoring (after detection) the amplitude-vs.-frequency characteristics of the signal." So de-emphasis is the opposite of what's happening here, which is "preemphasis"

A system process designed to increase, within a band of frequencies, the magnitude of some (usually higher) frequencies with respect to the magnitude of other (usually lower) frequencies, in order to improve the overall signal-to-noise ratio by minimizing the adverse effects of such phenomena as attenuation differences, or saturation of recording media, in subsequent parts of the system. Note: Preemphasis has applications, for example, in audio recording and FM transmission."

An implementation might achieve emphasis by a subtractive method, and the implementer might call his method what he wants. However, that's implementation. Viewed from the outside, pre-emphasis is a relative boosting of the higher frequencies and de-emphasis is its opposite.

Suggested Remedy
We don't need to argue about de- versus pre:- just change "de-emphasis" to "emphasis" throughout.

Proposed Response | Response Status: O
"Vtx-demph" should be replaced with "VMA" in 83A and 83B. "Vtx-demph" is a bad metric for four reasons: If using a sampling scope, a measurement at a point in time is slower than a measurement over a time window. A measurement at a point in time is degraded by signal and instrument noise (hence needs averaging, which makes the measurement even slower). A measurement at a point in time is degraded by waveform roughness caused by e.g. reflections (averaging over repeated measurements doesn't fix this). This metric does the same job as the already well-established VMA, so it adds clutter for no benefit. Also, draft says "Amplitude measurements are... taken at the center of the respective UI" yet Figure 83A-5 implies that "Maximum absolute output", "Minimum absolute output" and "Differential peak-to-peak amplitude" are taken from the extremes of the waveform irrespective of the UI. And, the number of waveforms to average is not a proper item of specification: measurement accuracy is something for the implementer to trade off against guard-bands and other cost considerations.

**Suggested Remedy**

At line 10, replace "Amplitude measurements are taken using an average of at least 16 waveforms and taken at the center of the respective UI using a square wave test pattern as defined in 83.5.10." with either: "Differential peak-to-peak amplitude is defined by an average over the central 20% of the first UI of each half of the square wave test pattern defined in 83.5.10. VMA is defined in 86A.5.3.5." if the UI matters, or: "VMA is defined in 86A.5.3.5." if the UI doesn't matter for differential peak-to-peak amplitude, as in Figure 83A-5. Replace "Vtx-demph" with "VMA" throughout (6 occurrences in all). If we want to give guidance on averaging, add "NOTE--It is recommended that at least 16 waveforms be averaged for an emphasis measurement."

**Proposed Response**

Change "For frequencies from 10 MHz to 11.1 GHz, differential to common mode input return loss shall meet the requirements defined in Table 83A-2. Differential to common mode input return loss is given in Equation (83A-8) and is illustrated in Figure 83A-11." to "From 10 MHz to 11.1 GHz, the differential to common mode input return loss shall comply with the limit shown in Table 83A-2." In Table 83A-2, change "Differential input return loss" to "Differential input return loss (min)" and change "see Equation (83A-8)" to "15". Delete Equation 83A-8. Either delete "Differential to common mode input return loss is given in Equation (83A-8) and is illustrated in Figure 83A-11." and the figure, or change to "The limit for differential to common mode return loss is illustrated in Figure 83A-10." and show the -SCD11 line on figure 83A-10.

**Proposed Response**

AC-coupling (whether AC-coupled has a hyphen or not, this isn't a compound adjective)

**Suggested Remedy**

Change to AC coupling, three times here, once in 83A.3.1, about 7 times in 85
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>323</td>
<td>TR</td>
<td>The low frequency jitter tolerance is the same for a receive side input as for a transmit side input, so there is no margin for the small amount of extra LF jitter added by CDRs in the link (e.g. in a module). We also have to check that the nAUI LF jitter specs are compatible with the PMDs, both 10G-lane and 25G-lane. Here is one proposed remedy; there may be alternatives.</td>
<td>O</td>
</tr>
<tr>
<td>324</td>
<td>E</td>
<td>0 Volts -3dB</td>
<td>O</td>
</tr>
<tr>
<td>325</td>
<td>T</td>
<td>&quot;The data pattern&quot;: if it's a test pattern it's not data. (Ethernet frames are data, idle is not.)</td>
<td>O</td>
</tr>
<tr>
<td>326</td>
<td>ER</td>
<td>If by &quot;peak-to-peak deterministic jitter&quot; you mean dual-Dirac Deterministic Jitter, it definitely isn't peak-to-peak, it's related to intercept points that have nothing to do with peaks. And if not, what do you mean?</td>
<td>O</td>
</tr>
<tr>
<td>327</td>
<td>T</td>
<td>As we are going to allow scrambled idles as well as PRBS31,</td>
<td>O</td>
</tr>
</tbody>
</table>

**Comment IDs:**
- 323
- 324
- 325
- 326
- 327
Comment Type TR Comment Status D
We should not call part of the receiver a "transmitter" or part of the transmitter a "receiver", if we can avoid it. Reason per another comment. This proposed remedy, for 83B, follows 86A for connector-related items and 47 for IC-related items.
In addition, the specs in 83B don’t relate to the XLAUI/CAUI component but to the host or module input or output.
Suggested Remedy
In Figure 83B-3, change "Transmitter" to "Driver", twice, and once each in Figure 83B-5 and 83B-7.
In 83B.2.1, change "Transmit de-emphasis" to "Module output emphasis" and "transmitter jitter" to "module output jitter".
In Table 83B-3, delete "Transmitter" before "eye mask", five times including table note, and four more times in the PICS 83B.4.3.
In Table 83B-5, delete "Receiver" before "eye mask", five times including table note, and four more times in the PICS 83B.4.4.
Change "83B.2.3 Receiver Tolerance" to "83B.2.3 Host input signal tolerance".
In Figure 83B-10, change "XLAUI / CAUI receiver" to "XLAUI / CAUI host input". If it isn’t deleted by another comment, change 83B.4.4 PICS HC12 from "Receiver AC coupling" to "Host input AC coupling".
Proposed Response Response Status O

Comment Type TR Comment Status D
"HCB test fixture PCB insertion loss": what's a "HCB test fixture"? Something to test the HCB? Other changes to improve clarity and consistency.
Suggested Remedy
Change "The reference HCB test fixture PCB insertion loss" to "The reference differential insertion loss of the HCB, excluding the module connector". Next line, change "test fixture" to "HCB". Similarly for MCB.
Proposed Response Response Status O

Comment Type T Comment Status D
The compliance board losses should be specified down to 10 MHz as in 86A.
Suggested Remedy
For equations 83B-3 and 83B-4, change the lower limit of the frequency range from 0.25 to 0.01 GHz. Consider similar changes for all specs in 83A and 83B.
Proposed Response Response Status O

Comment Type TR Comment Status D
The reference HCB test fixture PCB insertion loss should be a smooth curve like equation 86A-4, with between 1.26 dB (like the 86A HCB) and 2.1 dB (max loss for 83B module PCB) at 5.15625 GHz. This is a TR in case there is delay in finding what HCB loss is achievable.
Suggested Remedy
Use a scaled version of equation 86A-4. E.g. with 1.8 dB loss at 5.15625 GHz, this would be: 0.0143 + 0.4291 * sqrt(f) + 0.1573 * f
Proposed Response Response Status O
The MCB loss for nAUI B is 0.92 dB while the MCB for PPI is 0.67 dB at Nyquist. An implementation e.g. QSFP socket may be capable of either nAUI B or nPPI (and possibly CRn). It would be an advantage if the same MCB could be used with all QSFP modules.

Suggested Remedy:
If feasible, reduce the nAUI B MCB reference loss towards the nPPI reference loss.

Comment Status: D
Response Status: O

If this table really is for host electrical output, it's pointing at the wrong mask diagram.

Suggested Remedy:
Change "Figure 83A-9" to "Figure 83A-8", and add a full stop.

Comment Status: D
Response Status: O

Proposed wordsmithing

Suggested Remedy:
Change "Based on 85.8.3.4 insertion loss TP0 to TP2 or TP3 to TP5 and..." to "With the insertion loss from TP0 to TP2 or TP3 to TP5 given in 85.8.3.4 and..."

Proposed Response
Response Status: O

We call the MDI, MDI, whatever data rate it supports and however many lanes it has. We don't call it nMDI.

Suggested Remedy:
Change "nPPI" to "PPI" throughout.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Suggested Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>339</td>
<td>T</td>
<td>D</td>
<td>T</td>
<td>D</td>
<td>The minimum loss limit for mated HCB and MCB is generally more than the reference HCB and MCB losses, excluding the connector. If a connector has very little loss at some frequency, this is an unwanted constraint that would force the compliance board maker to aim for more than the reference loss.</td>
<td>In Equation 86A-6, change - 0.109 + 0.654 f + 0.12f dB to -0.11 + 0.46 f + 0.16f dB</td>
</tr>
<tr>
<td>340</td>
<td>TR</td>
<td>D</td>
<td>TR</td>
<td>D</td>
<td>In SFP+ and previously in 86A, HCB-MCB crosstalk was controlled up to 15 GHz. Now 86A refers to 85.10.9.3 with a different methodology and new numbers. In D2.3 we agreed to adjust the frequency limits to suit 86A's purposes. But we still need to see how the new limits compare with the old, and if they are tight enough for 86A compliance boards.</td>
<td>Compare the ICN specs in Table 85-11 in 0.01 to 15 GHz with the crosstalk spectral limits in D2.2 Figure 86A-6. If appropriate, provide ICN specs specifically for 86A with suitable limits.</td>
</tr>
<tr>
<td>341</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>Terminology</td>
<td>Check that &quot;Host electrical receiver signal tolerance&quot; has the same name throughout</td>
</tr>
<tr>
<td>342</td>
<td>TR</td>
<td></td>
<td>T</td>
<td>D</td>
<td>Originally there was a 0.5 dB limit at low frequencies to make life easier for those doing the measurement. It then got scaled up when it should have remained at 0.5 dB and the frequency break point (presently 200 MHz) moved down.</td>
<td>Change 0.682 to 0.5, and 0.2 to 0.11 (twice). If there is an equivalent limit in 85 or 85A (I didn't find it), change that similarly.</td>
</tr>
<tr>
<td>343</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td></td>
<td>Apparent blank line</td>
<td></td>
</tr>
<tr>
<td>344</td>
<td>T</td>
<td>D</td>
<td>T</td>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Draft 3.0 Comments**

IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments

**Sponsor ballot**
The recommended minimum of 0 dB for the host PCB, connector and HCB, between 10 MHz and 1 GHz, is both harmful and unnecessary. Below 2.5 GHz it is less than the HCB loss alone. It is difficult to imagine that the host PCB and connector have gain! At 10 MHz the HCB reference loss is 0.041 while at 1 GHz it is about 0.42 dB. If the PCB loss is like the MCB loss but scaled to 3 dB at 7 GHz it would be 0.06 dB at 10 MHz and 0.79 dB at 1 GHz. With practical measurement uncertainty, it would be difficult to show compliance at 10 MHz (trying to measure 0.1 dB), and pointless (gain of host PCB, connector and HCB unlikely to be 1.2 dB) at 1 GHz. If the intention of the minimum loss spec is to damp reflections, the return loss specs are tighter at lower frequencies so a low frequency spec is not necessary.

Proposed Remedy

Delete the row "0 0.01 <= f <= 1". Consider changing from -0.5 + 0.5f, 1 to 7 GHz, to -0.22 + 0.46f, 0.01 to 7 GHz.

Suggested Remedy

The Forward Error Correction sublayer is an optional for 40GBASE-R and 100GBASE-R copper and backplane PHYs. This may cause interoperability problems.

Proposed Remedy

The above FEC sublayer for 40GBASE-R and 100GBASE-R copper and backplane PHYs should either be made mandatory or removed to eliminate potential interoperability problems.

Proposed Remedy

Examples of an MDI include the following:
a) Connectorized fiber pigtail, b) PMD receptacle
Perhaps it is defined elsewhere in the 802.3 Standard, but I could not find a definition or a reference for a "connectorized fiber pigtail".

Proposed Remedy

Add a definition or appropriate references for a "connectorized fiber pigtail."

Proposed Remedy

This is only a note regarding my two earlier comments:
They "must be satisfied"--but they are logged as "not required to be satisfied" in the myBallot tool and I can't figure out how to change them to "must be satisfied"

Proposed Remedy

The operating range can be increased without change to the transceiver specifications by utilizing prevalent low-loss connection technology. For a connection loss allocation of 1.0 dB, the upper end of the ranges can increase to 120 m for OM3 and 150 m for OM4. Note that accepting this comment produces ripple effects in other parts of clause 86 that are addressed in subsequent comments.

Proposed Remedy

Change
"0.5 to 100 for OM3 or 125 for OM4"
to
"0.5 to 120 for OM3 or 150 for OM4."

Proposed Remedy
Table 86-9 can be modified to illustrate the power budget for the proposed longer operating distances of 120 m on OM3 and 150 m on OM4.

Suggested Remedy
See attached replacement table.

Proposed Response  Response Status O

Table title contains error for 100G.

Suggested Remedy
Change "40GBASE-SR10" to "100GBASE-SR10".

Proposed Response  Response Status O

The maximum link distance is based on an allocation of 1.5 dB total connection and splice loss. For example, this allocation supports two connections, each with an insertion loss of 0.75 dB.*

Suggested Remedy
Change: "The maximum link distance is based on an allocation of 1.5 dB total connection and splice loss. For example, these allocations support two connections, each with an insertion loss of 0.5 dB or 0.75 dB respectively.*"

Proposed Response  Response Status O

1. Table 86-9 p. 289 (see also Tables 86-6, 86-7, 86-8). The 802.3ba standard needs not only an illustrative power budget but an illustrative link model similar to 802.3ae models on http://ieee802.org/3/ae/public/index.html. The link needs to satisfy both power penalty and ISI requirements and these depend on more parameters than what is explicitly mentioned in Table 86-9. The illustrative link model gives a set of common baseline assumptions and ensures all link calculations have a common consensus root. The reference to the illustrative link model can be in an annex to clause 86 or in the same section at Table 86-9.

Suggested Remedy
add an illustrative consensus link model which meets both power and ISI-BER requirements.

Proposed Response  Response Status O
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: Comment ID

Type 3.0 Comments

IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments

Sponsor ballot

Abbott, John  Corning Inc.

**Comment Type: TR  Comment Status: D**
also line 33(footnote) Clause 86 Table 86-6 p.287 (transmit characteristics) RMS spectral width. Footnote a. "RMS spectral width is the standard deviation of the spectrum". 850nm VCSELs have a line spectrum which is not well described by an RMS value; the use of an RMS value in link calculations gives a different estimate of pulse spreading. See for example

www.finisar.com/download_nC3xpBOptical%20Modes%20in%20VCSELs.pdf

If the RMS value is sufficiently pessimistic the target length should be increased or the extra margin somehow noted. If the RMS value is too optimistic other changes need to be made.

**Suggested Remedy**

augment historical link model calculations to account for individual lines in VCSEL spectrum.

**Proposed Response**  **Response Status: O**

Abbott, John  Corning Inc.

[Comment ID: 356]

**Comment Type: TR  Comment Status: D**
Table 86-1 p.279 The 0.5 to 100m operating range is too broad and should be divided into 2 PMDs, a 0.5 to ~75m for computer interconnects and a ~75m to 150m range for data centers (both with OM3). The 802.3ae length is 300m and supports 150-250m lengths in data centers. The 802.3ba uses MM fiber to take up shorter lengths previously using copper - a distinct PMD -- and the specific applications for OM3 and OM4 fiber warrant 2 PMDs.

**Suggested Remedy**

Organize SR into two PMDs as similar as possible but allowing one to focus on lengths currently used for optical fiber in the data center and the other to focus on HPC applications.

**Proposed Response**  **Response Status: O**

Abbott, John  Corning Inc.

Kolesar, Paul  CommScope Solutions

**Comment Type: T  Comment Status: D**
The second edition of IEC 61280-4-1 has been published for several months. As indicated in the editor's note, the referenced test should be harmonized with this new edition. However, the directions in the editor's note do not capture the changes completely nor in the most concise way. This is remedied in the proposed change.

**Suggested Remedy**

Change

"Insertion loss measurements of installed fiber cables are made in accordance with IEC 61280-4-1/Method 2 or IEC 61280-4-1/Method 3."
to

"Insertion loss measurements of installed fiber cables are made in accordance with the methods for cabling configuration E of IEC 61280-4-1."

**Proposed Response**  **Response Status: O**
Comment Type TR   Comment Status D
The PMDs defined in P802.3ba do not fulfill the PAR or the Five Criteria of 802.3. Specifically, as stated in section 5.4 of the PAR, the Purpose of Proposed Standard: "The project is to provide for the interconnection of equipment satisfying the distance requirements of the intended applications." Further, as stated in section 5.5, the Need for the Project: "The project is necessary to provide a solution for applications that have been demonstrated to need bandwidth beyond the existing capabilities. These include data center..." Data center backbone reach requirements have been repeatedly shown to extend to at least 200 meters per independent contributions kolesar_01_0906, swanson_01_1106, and flatman_01_0108. However, the maximum reach of the PMDs aimed at the data center, specifically -CR4/-CR10 and -SR4/-SR10, is presently stated as 125 meters, 75 meters shy of the need. While the commenter acknowledges the need for optimized solutions, the present optimization for lowest cost, which sacrifices sufficient coverage, is far from optimal. This is due to the huge increase in relative cost for the defined single-mode fiber based PMDs compared to the cost of extended reach -SR4/-SR10 PMDs that can address this reach, as shown in contributions jewell_01_0508 and kolesar_01_0908. Furthermore, without a cost effective solution that covers the vast majority of the reach requirements of the application space, this project does not satisfy the Broad Market Potential requirement for balanced cost, as the single-mode fiber based PMDs erect a market barrier when positioned as data center solutions rather than as the metro solutions for which they are optimal. Therefore PMDs that cost effectively support 200 meters must be defined to fulfill the PAR and satisfy the Broad Market Potential balanced cost criteria.

SuggestedRemedy
Adopt the proposal of contribution kolesar_05_0509 for an informative annex that defines a test for selecting 200-meter-capable PMDs from the production runs of -SR4/-SR10 PMDs, as detailed in contribution kolesar_04_0509 with appropriate editorial adjustments induced by clause 86 evolution since draft 2.0, the draft upon which these contributions were submitted.

Proposed Response   Response Status O
Cl 86 SC 86.8.4.4 P 293 L 39 # 363
Frazier, Howard M Broadcom
Comment Type TR Comment Status D
"Otherwise TDP(i) is zero, TDP(i) = 0." is redundant.
Suggested Remedy
Replace with "Otherwise TDP(i) = 0."

Proposed Response
Response Status O

Cl 86 SC 86.10.3.2 P 299 L 50 # 364
Frazier, Howard M Broadcom
Comment Type TR Comment Status D
"arranged in two rows of at least 10 or 12 positions." is vague and there is no justification
for a minimum of 12.
Suggested Remedy
Replace with "...arranged in two rows of at least 10 positions."

Proposed Response
Response Status O

Cl 86A SC 86A.4.1.1 P 423 L 15 # 365
Frazier, Howard M Broadcom
Comment Type TR Comment Status D
Why is it necessary to plot a constant in Figure 86A-1? Differential to common-mode input
return loss does not vary with frequency, and thus does not need to be plotted.
Suggested Remedy
Delete the plot of Differential to common-mode input return loss.

Proposed Response
Response Status O

Cl 83A SC 83A.2.1 P 377 L 23 # 368
Ganga, Ilango Intel Corporation
Comment Type T Comment Status D
[Editor's note: Comment 5 against D 2.3 was agreed to be resubmitted by the Editor
against D 3.0] The frequency range for insertion loss in 83A & 83B is from 0.25 GHz to 11.1 GHz, while
for 85 it's from 0.05 GHz to 11.1 GHz and for 86A it's from 0.01 GHz to 11.1 GHz. Unless
there are good technical reasons for the differences in the low frequency range limit, these
should be consistent. Since scrambled data has significant low frequency content, it seems
prudent to set the insertion loss frequency range limit to the lowest practical point to guard
against unexpected loss of low frequency content.
Suggested Remedy
For equations 85-14, 83A-1, 83A-2, 83A-9, 83B-1, 83B-2, 83B-3, 83B-4, 86A-4, 86A-5,
86A-6, 86A-7, 86A-15 & 86A-16 change the lower limit of the frequency range to 0.01 GHz.

Proposed Response
Response Status O
[Editor's note: Comment 6 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
In table 83A-1, note a, "Rise/Fall time measurement methodology defined in 83A.3.3.2", is redundant with the entry, "83A.3.3.2", in the Subclause Reference column and can be deleted.

**Suggested Remedy**
In table 83A-1, delete note "a Rise/Fall time measurement methodology defined in 83A.3.3.2".

**Proposed Response**

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[Editor's note: Comment 57 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Draft says "See Figure 83A-5 for ... definition of de-emphasis" yet Figure 83A-5 does not define "de-emphasis": Equation 83A-3 does, as stated two sentences earlier. Also, should not put whole sentences in figures, especially if normative. That's what text is for.

**Suggested Remedy**
Change to:
"See Figure 83A-5 for an illustration of absolute driver output voltage limits, and definition of differential peak-to-peak amplitude, SL<sub><P></sub> and SL<sub><N></sub> are the positive and negative sides of the differential signal pair for lane i (i = 0, 1, 2, 3 for XLAUI. For CAUI i = 0:9)."
Remove the sentence in square brackets from Figure 83A-5.

**Proposed Response**

---

[Editor's note: Comment 7 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
The phrase, "For frequencies from 10 MHz to 11.1 GHz", is redundant with the content of eq. 83A-6 and should be deleted.

**Suggested Remedy**
Change from, "For frequencies from 10 MHz to 11.1 GHz, common mode output return loss ..." to "Common mode output return loss ..."

**Proposed Response**

---

[Editor's note: Comment 9 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
The phrase, "For frequencies from 10 MHz to 11.1 GHz", is redundant with the content of eq. 83A-7 and should be deleted.

**Suggested Remedy**
Change from, "For frequencies from 10 MHz to 11.1 GHz, differential input return loss ..." to "Differential input return loss ..."

**Proposed Response**

---
Comment Type E  Comment Status D  
[Editor's note: Comment 13 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
The text, "All XLAUI/CAUI channels shall be active during transmit jitter testing to ensure any channel-channel crosstalk is included in the jitter evaluation." uses the term 'channel' where the term 'lane' is more appropriate. For example, in 802.3ba context, the four lanes of XLAUI form one channel. See also 83a.5.2 line 31 and 83b.2.3 page 404 line 6.

SuggestedRemedy
Change from, "All XLAUI/CAUI channels shall be active during transmit jitter testing to ensure any channel-channel crosstalk is included in the jitter evaluation." to "All XLAUI/CAUI lanes shall be active during transmit jitter testing to ensure any lane-lane crosstalk is included in the jitter evaluation." Repeat/apply in 83a.5.2 line 31 and 83b.2.3 page 404 line 6.

Proposed Response Response Status O

Comment Type T  Comment Status D  
[Editor's note: Comment 12 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
The text states, "The data pattern for jitter measurements shall be test pattern PRBS31." Should not either pattern 3, pattern 5 (see Table 86-11) or valid traffic be acceptable? See also 83a.5.2 line 32 and 83b.2.3 page 404 line 7.

SuggestedRemedy
Change from, "The data pattern for jitter measurements shall be test pattern PRBS31." to "Pattern 3, Pattern 5, see Table 86-11, or valid XLAUI/CAUI signal shall be used for jitter measurements." Repeat/apply in 83a.5.2 line 32 and 83b.2.3 page 404 line 7.

Proposed Response Response Status O

Comment Type E  Comment Status D  
[Editor's note: Comment 3 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Random jitter is not usually specified as peak-to-peak but either as RMS or for a given BER.

SuggestedRemedy
Change, "... jitter of the filter stress + limiter and random jitter ..." to "... jitter of the filter stress plus limiter and random jitter ..."

Proposed Response Response Status O

Comment Type E  Comment Status D  
[Editor's note: Comment 64 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Inconsistent notation: here we have MDNEXT subscript loss while previously in 85 we had Insertion_loss, IL, Return_loss. 85A uses IL a lot.

SuggestedRemedy
My preferred solution is to use simply "MDNEXT" to and flip the sign, and replace Insertion_loss and IL with SDD21 (and flip the sign), in line with CEI, SFP+ and CXP.

Proposed Response Response Status O

Comment Type E  Comment Status D  
[Editor's note: Comment 16 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

Proposed Response Response Status O

Comment Type E  Comment Status D  
[Editor's note: Comment 16 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

Proposed Response Response Status O

Comment Type E  Comment Status D  
[Editor's note: Comment 16 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

Proposed Response Response Status O
[Editor's note: Comment 65 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

Proposed Response

Repeating D2.2 comment 65:

Draft says "Multiple Disturber Near-End Crosstalk (MDNEXT) loss is specified as the power sum of the individual NEXT losses." and "MDNEXT loss is determined by summing the power of the four or ten individual pair-to-pair differential NEXT loss values". These statements are not correct: MDNEXT is the power sum of the individual NEXTs, but as equation 85-26 shows, "MDNEXT loss" is the inverse of the power sum of the individual inverses of "NEXT losses".

The power sum of the individual NEXT losses would be dominated by the weakest NEXT, which is not what we want.

Suggested Remedy

My preferred solution is change "NEXT loss" to "NEXT" and "MDNEXT loss" to "MDNEXT", and flip the signs. This brings the signs in line with CEI, SFP+, CXP.

Other editorial issues.

I think the equation at line 48 and the units in Table 85-10 are not consistent (needs checking).

Suggested Remedy

Change

"Define the weight at each frequency fn using" to "The weights Wnt and Wft at each frequency fn are given by" (or add "here lines for Wnt and Wft").

Change

"where the equation parameters are given in Table 85-10. Note that the 3 dB transmit filter bandwidths fn and Fast Fourier transform (FFT) are inversely proportional to the 20% to 80% rise and fall times Tnt and Tft respectively. The constant of proportionality is 0.2365 (e.g. Tnt fn = 0.2365). In addition, fr is the 3 dB reference receiver bandwidth which is set to 7.5 GHz."

to

"where fn is in GHz and is given by Equation 85-new1, fr is in GHz and is given by Equation 85-new2, fn is the reference receiver 3 dB bandwidth, is 7.5 GHz, and the other equation parameters are given in Table 85-10.

fn= 236.5 / Tnt (85-new1)

fr= 236.5 / Tnt (85-new2)

where Tnt and Tft are the 20% to 80% rise and fall times in picoseconds given in Table 85-10."

Proposed Response
Comment Type: T
Comment Status: D

[Editor's note: Comment 63 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

"The effects of differences ... should be accounted for" is too weak: needs to be required not just recommended. Compare text at 86A.5.1.1.

If we were not trying to move to Sponsor ballot this would be a TR.

Suggested Remedy

Change "The effects of differences between the insertion loss of an actual test fixture and the reference insertion loss should be accounted for in the measurements." to "Any differences between the insertion loss of an actual test fixture and the reference insertion loss are accounted for in the measurements."

Similarly in 85.10.8 and 83B.2 (twice).

Proposed Response
Response Status: O

---

Comment Type: T
Comment Status: D

[Editor's note: Comment 71 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

"Receiver jitter tolerance signal level in OMA, each lane" (shown as "Max" in D2.3) is used in 86.8.4.8 "as in 68.6.11, with the following differences: ... b) The parameters of the signal are specified in Table 86-8..."

68.6.11 says "... the power in OMA at the receiver is adjusted, using the optical attenuator, to be equal to the stressed sensitivity in OMA, also given in Table 68-5, and a BER of better than 10-12 shall be achieved." So, we are to adjust the power in OMA to any value we like as long as it doesn't exceed the -5.4 limit in Table 86-8. So the spec is arbitrary and uncertain: a tester can make anything fail by setting the OMA low enough.

Note this is unlike stressed sensitivity which is a property of the receiver under test not of the test rig. It's more like an eye mask, which is also fixed. If we were not trying to move to Sponsor ballot this would be a TR.

Suggested Remedy

Change the row "Receiver jitter tolerance signal level in OMA, each lane Max -5.4 dBm" to "Receiver jitter tolerance, each lane, per conditions below" (deleting "Max -5.4 dBm"

Keep the footnote, but change "This is a test of the optical receiver's ability" to "Jitter tolerance defines the optical receiver's ability"

Another remedy would be to change "Receiver jitter tolerance signal level in OMA" to "Receiver jitter tolerance in OMA" and modify 86.8.4.8 b to say that the test signal's OMA is set at the maximum for receiver jitter tolerance signal level in OMA given in Table 86-8.

Proposed Response
Response Status: O
BER is a criterion of tolerance, not a metric of it. It's already stated in 86A.5.3.8.6 and is the same for the whole project so should not be repeated here. Note comment on related issue against 86.7.3 Table 86-8.

Also, per D2.0 comment 470:

'ACCEPT IN PRINCIPLE. Need to avoid using "receive" or "receiver" on the transmit path (down the stack, PMA to MDI) or "transmit" or "transmitter" on the receive path (up the stack, MDI to PMA).

Change names using the terms host, module, input and output.'

In Table 86A-4, change "Receiver signal tolerance, each lane (BER) - 10-12" to "Host input signal tolerance, each lane, per conditions below" to "Host input signal tolerance, each lane, per conditions below" (it happens that the host input is a receiver input but we resolved to use "input" and "output" in D2.0 comment 470).

Make the cross-reference into a proper link.

In Table 86A-6 and 86A.5.3.8 consider changing "receiver tolerances" to "input tolerances" as appropriate.

In SFP+ and previously in 86A, HCB-MCB crosstalk was controlled up to 15 GHz. Now 86A refers to 85.10.9.3 which does not control above 10 GHz. HCB-MCB crosstalk needs to be controlled to a frequency higher than product crosstalk (affects J9, eye, Qsr) according to the roll-off of the aggressor signal. Qsr is observed in a 12 GHz bandwidth.

Also, every other spec in 86A starts at 10 MHz not 50 MHz.

Please replace the figure showing MCB-HCB mated pair, you borrow fig 86-3 but with CL85 test point on it.

Please provide test setup definition in the same section.

Replace twinaxial cable with "CR4 or CR10 cable assembly".
### Comment 387

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

[Editor's note: Comment 34 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

Fig 85-6 does not show what should be done with cable RX side on the left, open, short, terminate!

**Suggested Remedy:**
- Please show it is terminated to 50 ohms

**Proposed Response**

**Response Status:** O

---

### Comment 388

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

[Editor's note: Comment 35 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]

How is someone suppose to know what this statement means "The MDNEXT is measured from points HTx to point LUT in figure 85-7"?

**Suggested Remedy:**
- This section require more clear write up and more detail picture

**Proposed Response**

**Response Status:** O

---

### Comment 389

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

The editing instruction states "Insert 45.2.1.12a (before 45.2.1.12 as numbered in 802.3-2008, renumbered to 45.2.1.13 by P802.3av/D3.4) for 40G/100G extended abilities".

Subclause 45.2.1.12 in IEEE Std 802.3-2008, renumbered to be 45.2.1.13 in IEEE Std 802.3av-2009, is titled "10P/2P PMA/PMD control register (Register 1.30)". Hence following this instruction would result in the subclause order as follows:

- 45.2.1.11 10G-EPON PMA/PMD ability register (Register 1.12)
- 45.2.1.12 PMA/PMD package identifier (Registers 1.14 and 1.15)
- 45.2.1.12a 40G/100G PMA/PMD extended ability register (Register 1.13)

I don't believe that this is correct as it would be normal to have the subclause for Register 1.13 after register 1.11 but before 1.14 and 1.15. Based on this suggest that this new subclause, and its subclauses should be placed after 45.2.1.11 and number under 45.2.1.11a. Also I believe the editing instruction should be extended to cover the subclauses of this new subclause and references to existing standards should use the full designation.

**Suggested Remedy:**
- Suggest that the new subclauses be numbered as follows:
  - 45.2.1.11a 40G/100G PMA/PMD extended ability register (Register 1.13)
    - 45.2.1.11a.1 PMA remote loopback ability (1.13.15)
    - 45.2.1.11a.2 100BASE-ER4 ability (1.13.11)
    - 45.2.1.11a.3 100BASE-LR4 ability (1.13.10)
    - 45.2.1.11a.4 100BASE-SR10 ability (1.13.9)
    - 45.2.1.11a.5 100BASE-CR10 ability (1.13.8)
    - 45.2.1.11a.6 40BASE-LR4 ability (1.13.3)
    - 45.2.1.11a.7 40BASE-SR4 ability (1.13.2)
    - 45.2.1.11a.8 40BASE-CR4 ability (1.13.1)
    - 45.2.1.11a.9 40BASE-KR4 ability (1.13.0)

Suggest that the editing instruction should read 'Insert new subclauses 45.2.1.11a and 45.2.1.11a.1 through 45.2.1.11a.9 after existing subclause 45.2.1.11.11 (this subclause was renumbered by IEEE Std 802.3av).'

**Proposed Response**

**Response Status:** O
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<td>45</td>
<td>45.2.1</td>
<td>38</td>
<td>37</td>
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<td>Comment Type</td>
<td>E</td>
<td>Comment Status</td>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Comment | Register 1.12 is called the '10G-EPON PMA/PMD ability register', see IEEE Std 802.3av-2009 subclause 45.2.1.11 (page 20). During my check of the changes made by this draft to the previous approved standards it became apparent that this register name was not correctly reflected in this table in the changes in IEEE Std 802.3av-2009 (see IEEE Std 802.3av-2009 page 17). If the IEEE P802.3ba project is uncomfortable about making this change I'm happy to submit it as a maintenance request.

Suggested Remedy
Change the text 'P2MP ability register' to read '10G-EPON PMA/PMD ability register'.

Proposed Response | Response Status | O |

<table>
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<tr>
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<td>1</td>
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<td>Comment Status</td>
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</tbody>
</table>
| Comment | P802.3ba has chosen to use a nomenclature that doesn't follow previous uses. While the draft standard has chosen to use C and K to indicate media types - similar to previous uses in 802.3 - they have chosen to use S, L and E to indicate reach instead of wavelengths as was done in 802.3z and 802.3ae. This creates confusion with the nomenclature and may present limitations for future enhancements to the 40G and 100G family.

Suggested Remedy
Change all references for S to mean short wavelength (850nm).

Change all references for L to mean long wavelength (1310nm).

Change all references for E to be Z and to mean optimized long wavelength (1310nm).

Proposed Response | Response Status | O |

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<td>5</td>
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<td>Comment Type</td>
<td>E</td>
<td>Comment Status</td>
<td>D</td>
<td></td>
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</tbody>
</table>
| Comment | The draft is inconsistent on whether to use "AC coupling or AC coupled" or "AC-coupling or AC-coupled".

Suggested Remedy
The response to comment 470 against D 2.0 agreed to use "AC coupling or AC coupled"

Proposed Response | Response Status | O |

<table>
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<td>Comment Type</td>
<td>E</td>
<td>Comment Status</td>
<td>D</td>
<td></td>
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</tr>
</tbody>
</table>
| Comment | On the first page of the PICS Proformas there are two references to the applicable standard (on lines 37 and 45). This should be "IEEE Std 802.3ba-20xx". See recently published amendments such as IEEE Std 802.3av-2009. Clauses 84, 86, 87, 88 have this correct in both places.

Suggested Remedy
Page 159 for Clause 81, 195 for Clause 82, 218 for Clause 83, 272 for Clause 85, 391 for Annex 83A, 406 for Annex 83B, 440 for Annex 86A

Proposed Response | Response Status | O |

<table>
<thead>
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<td>45</td>
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<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
<td>D</td>
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</tr>
</tbody>
</table>
| Comment | Since Ed 2.0 of IEC 61280-1-4 is now published (See http://webstore.iec.ch/webstore/webstore.nsf/artnum/043535) update reference and remove Editor's note.

Suggested Remedy
Change reference to "IEC 61280-1-4:2009" and remove Editor's note.

Proposed Response | Response Status | O |

<table>
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<tr>
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<td>Comment Type</td>
<td>T</td>
<td>Comment Status</td>
<td>D</td>
<td></td>
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</tr>
</tbody>
</table>
| Comment | If this IEC document is going to be published in time for 802.3ba to reference it, then it must be going through the IEC balloting process already.

Suggested Remedy
Either change Editor's note to give details of IEC document number and expected publishing date or remove Editor's note entirely.

Proposed Response | Response Status | O |
<table>
<thead>
<tr>
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<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>#396</td>
<td>E</td>
<td>D</td>
<td>In the example draft standard (Annex B) of the 2009 IEEE style manual, the abbreviations in subclause 3.2 are shown with the first letters not capitalised except where it is a proper name. Also, in the base standard subclause 1.5 most of the abbreviations are shown with the expansions non-capitalised. Using the abbreviations in the base standard as a guide (e.g. XAUI, XGMI) it appears that D1C, L5B and MSB should be shown non-capitalised. OTN and OPU3 are abbreviations defined by the ITU-T and the capitalization ITU use has been adopted.</td>
<td>Change to &quot;deficit idle count&quot;, &quot;least significant bit&quot; and &quot;most significant bit&quot;</td>
</tr>
<tr>
<td>#400</td>
<td>T</td>
<td>D</td>
<td>This says &quot;1.267 through 275&quot; but it should be &quot;1.267 through 1.275&quot;</td>
<td>Change &quot;1.267 through 275&quot; to &quot;1.267 through 1.275&quot; Make equivalent change elsewhere in Table 45-3 (3 more instances) In Table 45-83 change &quot;3.83 through 89&quot; to &quot;3.83 through 3.89&quot; In title of 45.2.3.38 change &quot;Registers 3.91 through 109&quot; to &quot;Registers 3.91 through 3.109&quot;</td>
</tr>
<tr>
<td>#401</td>
<td>E</td>
<td>D</td>
<td>&quot;the 40GBASE-KR4 PMDs is given&quot; should be &quot;the 40GBASE-KR4 PMD is given&quot;</td>
<td>Change &quot;PMDs&quot; to &quot;PMD&quot; here and also for &quot;40GBASE-LR4 PMDs&quot; Make the same two changes in 45.2.1.7.5</td>
</tr>
</tbody>
</table>

**Comment ID: 396**

Anslow, Peter

Nortel Networks

**Comment Type:** E

**Comment Status:** D

In the example draft standard (Annex B) of the 2009 IEEE style manual, the abbreviations in subclause 3.2 are shown with the first letters not capitalised except where it is a proper name. Also, in the base standard subclause 1.5 most of the abbreviations are shown with the expansions non-capitalised. Using the abbreviations in the base standard as a guide (e.g. XAUI, XGMI) it appears that D1C, L5B and MSB should be shown non-capitalised. OTN and OPU3 are abbreviations defined by the ITU-T and the capitalization ITU use has been adopted.

**Suggested Remedy:**

Change to "deficit idle count", "least significant bit" and "most significant bit"

**Proposed Response:**

**Response Status:** O

---

**Comment ID: 400**

Anslow, Peter

Nortel Networks

**Comment Type:** T

**Comment Status:** D

This says "1.267 through 275" but it should be "1.267 through 1.275"

**Suggested Remedy:**

Change "1.267 through 275" to "1.267 through 1.275" Make equivalent change elsewhere in Table 45-3 (3 more instances) In Table 45-83 change "3.83 through 89" to "3.83 through 3.89" In title of 45.2.3.38 change "Registers 3.91 through 109" to "Registers 3.91 through 3.109"

**Proposed Response:**

**Response Status:** O

---

**Comment ID: 401**

Anslow, Peter

Nortel Networks

**Comment Type:** E

**Comment Status:** D

"the 40GBASE-KR4 PMDs is given" should be "the 40GBASE-KR4 PMD is given"

**Suggested Remedy:**

Change "PMDs" to "PMD" here and also for "40GBASE-LR4 PMDs" Make the same two changes in 45.2.1.7.5

**Proposed Response:**

**Response Status:** O
Proposed Response

Cl 45 SC 45.2.1.77 P 50 L 6 # 402
Anslow, Peter Nortel Networks

Comment Type E Comment Status D
"." missing after "the PMDs described in Clause 72, 84 or 85"

SuggestedRemedy
Add "." after "the PMDs described in Clause 72, 84 or 85"

Proposed Response Response Status O

Cl 45 SC 45.2.1.85.2 P 57 L 28 # 403
Anslow, Peter Nortel Networks

Comment Type E Comment Status D
The name used in Table 45-62 (and elsewhere) is "BASE-R FEC error indication ability" but the title of 45.2.1.85.2 is "BASE-R error indication ability". This is an error in going from the base standard to the draft.

SuggestedRemedy
Change the title of 45.2.1.85.2 to include "FEC" in normal font.

Proposed Response Response Status O

Cl 45 SC 45.2.1.91 P 59 L 47 # 404
Anslow, Peter Nortel Networks

Comment Type E Comment Status D
The change instruction "Insert 45.2.1.91-94 for multi-lane coefficient exchange:" is not in accordance with the style manual. See 14.2 e) "Dashes should never be used because they can be misconstrued for subtraction signs."

SuggestedRemedy
Change to "Insert 45.2.1.91 through 45.2.1.94 for multi-lane coefficient exchange:

Proposed Response Response Status O

Cl 45 SC 45.2.1.95 P 61 L 10 # 405
Anslow, Peter Nortel Networks

Comment Type E Comment Status D
Make the title of Table 45-65a consistent with the others in clause 45 by adding "bit definitions"

SuggestedRemedy
Change the title of Table 45-65a to "Test pattern ability register bit definitions"

Proposed Response Response Status O

Cl 45 SC 45.2.1.96 P 62 L 8 # 406
Anslow, Peter Nortel Networks

Comment Type E Comment Status D
The title of Table 45–65b is "Square wave testing control and status" but the register name elsewhere is "square wave testing control"

SuggestedRemedy
Change the title of Table 45–65b to "Square wave testing control register bit definitions". Also on line 8 change "The square wave testing control and status register is used" to "The square wave testing control register is used".

Proposed Response Response Status O

Cl 45 SC 45.2.1.96 P 62 L 47 # 407
Anslow, Peter Nortel Networks

Comment Type T Comment Status D
This says "Lanes for which a square wave pattern is not enabled pass through data as normal." But in testing, we want to be able to have scrambled idles or PRBS31 on the other lanes. Similar comment submitted against 83.5.10

SuggestedRemedy
Change "Lanes for which a square wave pattern is not enabled pass through data as normal." to "Lanes for which a square wave pattern is not enabled act as determined by other registers."

Proposed Response Response Status O
**Comment ID # 408**

Anslow, Peter  
Nortel Networks

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

The title of Table 45–65c is "PRBS pattern testing control and status" but the register name elsewhere is "PRBS pattern testing control".

**Suggested Remedy:**

Change the title of Table 45–65c to "PRBS pattern testing control register bit definitions".

**Proposed Response:**

**Response Status:** O

---

**Comment ID # 409**

Anslow, Peter  
Nortel Networks

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

What effect do bits 3 to 0 have if bits 6 and 7 are both zero?

**Suggested Remedy:**

Add text to end of paragraph to state that "If neither of the bits 6 and 7 are asserted then bits 3:0 have no effect.

**Proposed Response:**

**Response Status:** O

---

**Comment ID # 410**

Anslow, Peter  
Nortel Networks

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

The title of 45.2.3.6.1 includes "(3.7.1:0)". This should be "(3.7.2:0)".

**Suggested Remedy:**

Change "(3.7.1:0)" to "(3.7.2:0)". Show the "1" in strikethrough and the "2" in underline font.

**Proposed Response:**

**Response Status:** O

---

**Comment ID # 411**

Anslow, Peter  
Nortel Networks

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

The register name in the title of 45.2.3.11 does not match that used elsewhere.

**Suggested Remedy:**

In the title change "BASE-R PCS and 10GBASE-T PCS status 1 register" to "BASE-R and 10GBASE-T PCS status 1 register" (show the first "PCS" in strikethrough font).

**Proposed Response:**

**Response Status:** O

---

**Comment ID # 412**

Anslow, Peter  
Nortel Networks

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

The text "or may function as defined for BASE-R PRBS9, PRBS31, pseudo random and square wave test patterns" is missing a full stop after BASE-R.

**Suggested Remedy:**

Add a full stop after "BASE-R" on line 24.

**Proposed Response:**

**Response Status:** O

---

**Comment ID # 413**

Anslow, Peter  
Nortel Networks

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

The title of 45.2.3.15 includes "(3.7.1:0)". This should be "(3.7.2:0)".

**Suggested Remedy:**

Change "(3.7.1:0)" to "(3.7.2:0)". Show the "1" in strikethrough and the "2" in underline font.

**Proposed Response:**

**Response Status:** O
The editing instruction is "Insert 45.2.3.15.1a before 45.2.3.15.1 for naming," but this is not for naming as Scrambled idles do not feature in the base standard.

**Proposed Remedy**
Change the editing instruction to "Insert 45.2.3.15.1a before 45.2.3.15.1:"

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

This is the upper 16 bits of a 22 bit counter so it should be "Bits 21:6 of BER counter" (see response to comment 217 against D 2.2)

**Proposed Remedy**
Change "Bits 19:6 of BER counter" to "Bits 21:6 of BER counter"

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

The highest subclause added by IEEE Std 802.3av-2009 is 45.2.3.35 so 45.2.3.36 will be absent.

**Proposed Remedy**
Change the editing instruction to "Insert after 45.2.3.35 (inserted by ...) and re-number subclauses accordingly.

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

The title of Table 45–114a is "BIP error counter, lanes 0 and 1 register bit definitions" but only lane 0 is covered.

**Proposed Remedy**
Change the title of Table 45–114a from "BIP error counter, lanes 0 and 1 register bit definitions" to "BIP error counter, lane 0 register bit definitions"

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

The description of bit 7.48.2 has changed, but is not shown with underline

**Proposed Remedy**
Show "or CX4" and "/CX4" in underline font

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

Reference to 45.2.1.1.4 is shown blue even though that subclause is in the draft. Also remote loopback reference should be 45.2.1.1.4a

**Proposed Remedy**
Show the reference in "ALB to 45.2.1.1.4 black and make it a link. Make the reference for "LLB 45.2.1.1.4a black and make it a link. (Would this be better as "RLB")?"
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Sponsor</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>#420</td>
<td>E</td>
<td>D</td>
<td>In item &quot;FEC-R, &quot;Implementation of 10GBASE-R FEC&quot; should be &quot;Implementation of BASE-R FEC&quot;</td>
<td>Change &quot;Implementation of 10GBASE-R FEC&quot; to &quot;Implementation of BASE-R FEC&quot;</td>
<td>O</td>
<td></td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>#421</td>
<td>T</td>
<td>D</td>
<td>The PICS has entries for MMD 8 through 10. What about MMD 11?</td>
<td>Add a PICS entry for MMD 11</td>
<td>O</td>
<td></td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>#422</td>
<td>T</td>
<td>D</td>
<td>The subclause for MM19a through MM19d should be 45.2.1.1.4a and it is bit 1 not 0.</td>
<td>Change the subclause to 45.2.1.1.4a for MM19a through MM19d. Also change MM19a from &quot;when bit 0 is set to a one&quot; to &quot;when bit 1 is set to a one&quot; and change MM19b from &quot;PMA transmit data is returned on receive path when in remote loopback&quot; to &quot;PMA receive data is returned on transmit path when in remote loopback&quot;</td>
<td>O</td>
<td></td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>#423</td>
<td>T</td>
<td>D</td>
<td>In MM23 the PMA/PMD type is selected using bits 5:0 not 4:0</td>
<td>Change &quot;PMA/PMD type is selected using bits 4:0&quot; to &quot;PMA/PMD type is selected using bits 5:0&quot;</td>
<td>O</td>
<td></td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>#424</td>
<td>E</td>
<td>D</td>
<td>In MM32 &quot;ignores writes to bits 1 -- 10&quot; should be &quot;ignores writes to bits 10:1&quot; to use the same format as other rows and also to conform to the style manual. See 14.2 e) &quot;Dashes should never be used because they can be misconstrued for subtraction signs.&quot;</td>
<td>Change &quot;to bits 1 -- 10&quot; to &quot;to bits 10:1&quot;</td>
<td>O</td>
<td></td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>#425</td>
<td>T</td>
<td>D</td>
<td>In the base document RM35 is &quot;Writes to 10GBASE-R PCS status 1 register have no effect&quot; but this register has been re-named to &quot;BASE-R and 10GBASE-T PCS status 1&quot; register</td>
<td>Include a row for RM35 with the correct register name.</td>
<td>O</td>
<td></td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>Cl</td>
<td>SC</td>
<td>Comment Type</td>
<td>Comment Status</td>
<td>Suggested Remedy</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td></td>
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<td>----</td>
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<td>-------------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.5.3.7</td>
<td>E</td>
<td>D</td>
<td>The name of the &quot;BASE-R PCS and 10GBASE-T PCS status&quot; registers is wrong in 3 places</td>
<td>In RM36, RM37 and RM38 correct the name of the register to be &quot;BASE-R PCS and 10GBASE-T PCS status&quot; 1 or 2 registers. (3 places)</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>45.5.3.7</td>
<td>T</td>
<td>D</td>
<td>RM42 says &quot;BER counter holds at all ones at overflow&quot; but this is only true if the BER high order counter, 3.44 (see 45.2.3.16a) is not implemented. Also applies to RM43</td>
<td>Change &quot;XCR:M&quot; to &quot;CR:M&quot;. Make the same change to RM43 for the Errored Blocks counter.</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>45.5.3.7</td>
<td>T</td>
<td>D</td>
<td>RM50b says &quot;Register bit 3.44.15 set to 1&quot; but bit 3.44.15 is part of the counter according to Table 45-96a</td>
<td>Remove RM50b</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>45.5.3.7</td>
<td>E</td>
<td>D</td>
<td>RM50f through RM50j concern the Errored blocks high order counter, so the subclause should be 45.2.3.16b rather than 45.2.3.16a</td>
<td>Change the subclause for RM50f through RM50j to 45.2.3.16b</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>45.5.3.7</td>
<td>T</td>
<td>D</td>
<td>RM52i says &quot;Counters reset on read to 3.80 through 3.89 or PCS reset&quot; but the BIP error counters are 3.90 through 3.109</td>
<td>Change &quot;read to 3.80 through 3.89 or&quot; to &quot;read to 3.90 through 3.109 or&quot; also, the lower case &quot;L&quot; is difficult to distinguish from the number &quot;1&quot; so consider changing from &quot;RM52i&quot; (miss out this letter).</td>
<td>O</td>
</tr>
</tbody>
</table>
Comment ID: #432

Cl 73 SC 73 P 99 L 1
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
The clause title is different from the base standard, but this is not shown.

Suggested Remedy
Put an editing instruction before the clause title, show "Ethernet" in strikethrough and show "and copper cable assembly" in underline font.

Proposed Response
Response Status O

---

Comment ID: #433

Cl 73 SC 73.3 P 99 L 53
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
"10GBASE-KR" was on the list of PHYs in the base document so this should not be shown with underline font.

Suggested Remedy
Show "10GBASE-KR" in normal font

Proposed Response
Response Status O

---

Comment ID: #434

Cl 73 SC 73.6.4 P 100 L 32
Anslow, Peter Nortel Networks

Comment Type T  Comment Status D
The reference to 71.6.7 is not a link so it should be shown as dark blue. Also, 84.7.6 is Global PMD transmit disable whereas the others are lane by lane disable.

Suggested Remedy
Show "71.6.7" as dark blue and change the reference from 84.7.6 to 84.7.7

Proposed Response
Response Status O

---

Comment ID: #435

Cl 73 SC 73.6.4 P 101 L 7
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
The clause title is different from the base standard, but this is not shown.

Suggested Remedy
Change the title of the table to be 73-4

Proposed Response
Response Status O

---

Comment ID: #436

Cl 73 SC 73.6.4 P 101 L 23
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
The editing instruction "Insert extra paragraph and change last sentence as follows:" would be better split in to two editing instructions - one for each sentence

Suggested Remedy
Change editing instruction to "Insert extra paragraph as second to last paragraph" and insert new editing instruction "Change last paragraph as follows:"

Proposed Response
Response Status O

---

Comment ID: #437

Cl 73 SC 73.11 P 106 L 2
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
The title of this clause has changed but this is not shown.

Suggested Remedy
Put an editing instruction before the subclause title, show "Ethernet" in strikethrough and show "and copper cable assembly" in underline font. Also, the clause title appears in two other places on this page in the base standard, so these should be shown also.

Proposed Response
Response Status O
Cl 74 SC 74.5.1 P 111 L 29 # 438
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
 Clause 49 is not in the draft so it should be shown blue

Suggested Remedy
 Make the reference to clause 49 dark blue

Proposed Response  Response Status O

Cl 74 SC 74.5.1.1.2 P 111 L 50 # 439
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
 The editing instruction for 74.5 is "Replace" and therefore changes with respect to the base document are not shown.

Suggested Remedy
 Remove "speed" and show "rate" in normal font.

Proposed Response  Response Status O

Cl 74 SC 74.7.3 P 114 L 29 # 440
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
 The editing instruction is "Delete the last redundant paragraph of 74.7.3:". Does this mean that there are other redundant paragraphs that should not be deleted?

Suggested Remedy
 Change editing instruction to "Delete the last paragraph of 74.7.3 as it is redundant:"

Proposed Response  Response Status O

Cl 74 SC 74.8 P 121 L 6 # 441
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
 The change instruction says Table 74-2 but the table heading is 74-1

Suggested Remedy
 Change the title of the table to be 74-2

Proposed Response  Response Status O

Cl 74 SC 74.8 P 121 L 26 # 442
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
 The "i" in FEC_corrected_blocks_counter_i is a variable, so it should be in italic font. Also applies to FEC_uncorrected_blocks_counter_i. Also in 74.8.4.1 and 74.8.4.2

Suggested Remedy
 Change the "i" to italic in both variables. Also applies to 74.8.4.1 and 74.8.4.2

Proposed Response  Response Status O

Cl 74 SC 74.11 P 124 L 2 # 443
Anslow, Peter Nortel Networks

Comment Type E  Comment Status D
 There are two other places on the first page of the PICS that the clause title appears and therefore needs to be changed.

Suggested Remedy
 Show the changes to the clause title in all three places on the first page of the PICS that it appears. Also, there should be an editing instruction before the subclause title.

Proposed Response  Response Status O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Anslow, Peter</th>
<th>SC</th>
<th>Comment</th>
<th>Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>444</td>
<td>Nortel Networks</td>
<td>74.11.1</td>
<td>E</td>
<td>D</td>
<td>The references in the subclause and value/comment columns should either be links or in dark blue.</td>
<td>Change the references for 74.8.2, 74.8.3, 74.8.3.1 in to links and make 74.8.4, 51, 74.7.4.1 dark blue</td>
</tr>
<tr>
<td>445</td>
<td>Nortel Networks</td>
<td>80.4</td>
<td>E</td>
<td>D</td>
<td>Since P802.3bb was approved in December 2009 can this Editors' note be removed?</td>
<td>Remove Editor's note if possible.</td>
</tr>
<tr>
<td>446</td>
<td>Nortel Networks</td>
<td>80.4</td>
<td>T</td>
<td>D</td>
<td>The Maximum (ns) values in Table 80-3 should match the values in Table 81-1</td>
<td>Change the Maximum in bit times for 40G MAC, RS, and MAC Control to 16384</td>
</tr>
<tr>
<td>447</td>
<td>Nortel Networks</td>
<td>81.4</td>
<td>E</td>
<td>D</td>
<td>The title of subclause 81.4 should contain the clause 81 title.</td>
<td>Change &quot;and Media Independent Interface (XLMII/CMII)&quot; to &quot;and Media Independent Interface for 40 Gb/s and 100 Gb/s operation&quot;</td>
</tr>
<tr>
<td>448</td>
<td>Nortel Networks</td>
<td>81.4</td>
<td>T</td>
<td>D</td>
<td>The title of subclause 81.4.3 is &quot;PICS proforma Tables for Reconciliation Sublayer and 10 Gigabit Media Independent Interface&quot; which is incorrect.</td>
<td>Change title to &quot;PICS proforma Tables for Reconciliation Sublayer and Media Independent Interface for 40 Gb/s and 100 Gb/s operation&quot;</td>
</tr>
</tbody>
</table>
Comment ID # 450

Cl 81 SC 81.4.3.1 P 160 L 24 # 450
Anslow, Peter Nortel Networks

Comment Type: T
Comment Status: D

Subclause 81.1.4 says "sum of transmit and receive delays at one end of the link" so "round-trip delay" is not appropriate.

Suggested Remedy:
Change "round-trip delay" to "delay"

Proposed Response
Response Status: O

Comment ID # 451

Cl 82 SC 82.1.4.1 P 167 L 31 # 451
Anslow, Peter Nortel Networks

Comment Type: E
Comment Status: D

This says "The PMA or FEC service interface is defined in 83.2" but it is defined in 83.3

Suggested Remedy:
Change "defined in 83.2" to "defined in 83.3"

Proposed Response
Response Status: O

Comment ID # 452

Cl 82 SC 82.2.1 P 167 L 48 # 452
Anslow, Peter Nortel Networks

Comment Type: E
Comment Status: D

The notation "TXCn" and "RXCn" is different from that used elsewhere which uses TXC<n> and RXC<n>

Suggested Remedy:
Change "TXCn" to TXC<n> and "RXCn" to RXC<n>

Proposed Response
Response Status: O

Comment ID # 453

Cl 82 SC 82.2.3.3 P 172 L 33 # 453
Anslow, Peter Nortel Networks

Comment Type: T
Comment Status: D

The "PCS" is a sublayer and hence cannot be "mapped".

Suggested Remedy:
Change "The mapping of 40GBASE-R PCS into OPU3 specified" to "The mapping of 40GBASE-R PCS blocks into OPU3 specified". Also change "may prevent 40GBASE-R PCS from being mapped" to "may prevent 40GBASE-R PCS blocks from being mapped".

Also, since G.709 has been added to the Bibliography add a reference "[Bx1]"

Proposed Response
Response Status: O

Comment ID # 454

Cl 82 SC 82.2.3.2 P 173 L 24 # 454
Anslow, Peter Nortel Networks

Comment Type: T
Comment Status: D

In Figure 82-3 the bits of inst:IS_UNITDATA_1.request are shown as TxB<66> to TxB<131> and similarly for inst:IS_UNITDATA_3.request, inst:IS_UNITDATA_19.request. This bit numbering would be appropriate for a serial interface where one block is sent after another, but is inappropriate where the lanes are sent in parallel at the same time. Likewise for Figure 82-4.

Suggested Remedy:
Renumber all blocks to be from TxB<0> to TxB<65> in both figures.

Proposed Response
Response Status: O

Comment ID # 455

Cl 82 SC 82.2.3.2 P 173 L 54 # 455
Anslow, Peter Nortel Networks

Comment Type: E
Comment Status: D

Figure 82-3 appears on Page 173 after both Figures 82-4 and 82-5

Suggested Remedy:
Correct the order of the figures.

Proposed Response
Response Status: O
Type: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
Comment Status: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
Sort Order: Comment ID
Cl 82  SC 82.2.18.2.1  P 182  L 18  # 462
Anslow, Peter  Nortel Networks

Comment Type  E  Comment Status  D
the other instances of "Local Fault ordered set" in this subclause have an underscore between "ordered" and "set"

Suggested Remedy
Change "Local Fault ordered set" to "Local Fault ordered_set"

Proposed Response  Response Status  O

Cl 82  SC 82.2.18.2.2  P 182  L 30  # 463
Anslow, Peter  Nortel Networks

Comment Type  E  Comment Status  D
In "am_lock<x>" and also "where x=0:3 for 40GBASE-R and x=0:19 for 100GBASE-R" x is a variable and so should be in italic font. Also applies to other instances of <x>. Also, in "am_lock<x>" the font of "<x>" is Arial 8 pt (Should be Times New Roman 10 pt).

Suggested Remedy
show "x" in italic font. 8 instances on this page, 4 instances in Table 82-7, 8 instances in Figure 82-10, 7 instances in Figure 82-11, use correct base font for "<x>" in "am_lock<x>"

Proposed Response  Response Status  O

Cl 82  SC 82.2.18.2.4  P 185  L 25  # 464
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
This is now a 22 bit counter (see response to comment 217 against D 2.2). Note that there is another comment to correct Table 82-7

Suggested Remedy
Change "8-bit counter." to "A 22-bit counter." and change "MDIO register bits 3.33.7:0." to "MDIO register bits 3.33.7:0 and 3.45.13:0"

Proposed Response  Response Status  O

Cl 82  SC 82.3.1  P 187  L 13  # 466
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
The names of the MDIO registers and variables in Tables 82-6 and 82-7 do not match those in clause 45.

Suggested Remedy
In Table 82-6:
Change "Control register 1" to "PCS control 1 register" (2 places)
In Table 82-7:
Change the name of register 3.32 to "BASE-R and 10GBASE-T PCS status 1 register" (2 places)
Change "Multi-lane BASE-R PCS alignment status register 1 and 2" to "Multi-lane BASE-R PCS alignment status 1 and 2 registers"
Change "Multi-lane BASE-R PCS alignment status register 3 and 4" to "Multi-lane BASE-R PCS alignment status 3 and 4 registers"
Change "Multi-lane BASE-R PCS alignment status register 1" to "Multi-lane BASE-R PCS alignment status 1 register"
Change "Multi-lane BASE-R PCS alignment status register 2" to "Multi-lane BASE-R PCS alignment status 2 register" (2 places)
Change "MDIO register bits 3.33.7:0." to "MDIO register bits 3.33.7:0 and 3.45.13:0"
Change "BIP error counters" to "BIP error counter, lane x" (MDIO status variable column)
Change "BIP error counter" to "BIP error counter, lane x register" (PCS register name column)
Change "3.90 through 3.99" to "3.90 through 3.109"

Proposed Response  Response Status  O

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Comment ID
Cl 82 SC 82.3.1 P 187 L 45 # 467
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
The ber_count uses bits 13:8 of register 3.33, but also bits 0:15 of register 3.44.
The errored_block_count uses bits 7:0 of register 3.33, but also bits 0:13 of register 3.45.
Suggested Remedy
Insert extra rows or modify the existing rows to reflect the missing registers and names.
Proposed Response

Cl 82 SC 82.4 P 188 L 3 # 468
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
This says "The PCS shall be placed in Loopback mode when the Loopback bit in MDIO register is set to a logic one.," which is different from the style used in subclause 82.2.17 which is more helpful (even though Table 82.6 provides this information).
Suggested Remedy
Change to "If a Clause 45 MDIO is implemented, then the PCS shall be placed in Loopback mode when the Loopback bit from the PCS control 1 register (bit 3.0.14) is set to a one."
Proposed Response

Cl 82 SC 82.7 P 195 L 1 # 469
Anslow, Peter Nortel Networks
Comment Type E Comment Status D
The line thicknesses of the Tables in the PICS section of clause 82 are not according to the usual style. (Thick round the outer edge and between the heading row and the body)
Suggested Remedy
Change line thicknesses per the usual style.
Proposed Response

Cl 82 SC 82.7.3 P 196 L 11 # 471
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
The title of subclause 82.7 should contain the clause 82 title.
Suggested Remedy
Change "Physical Coding Sublayer (PCS) type 40GBASE-R and 100GBASE-R" to "Physical Coding Sublayer (PCS) for 64B/66B, type 40GBASE-R and 100GBASE-R" make the same change on line 37.
Proposed Response

Cl 82 SC 82.7.6.1 P 199 L 7 # 472
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
PICS entries SM1 and SM2 are both shown as "M" which implies that both 40GBASE-R and 100GBASE-R must be implemented. Also applies to SM4, SM5, SM8, SM9.
Suggested Remedy
Change the PICS by adding 40GBASE-R and 100GBASE-R as options (*PCS40, *PCS100 to match the PMA format) in the "Major capabilities/options" table (see 88.12.3 *LR4, *ER4 for example). Then make PICS entries that are 40GBASE-R specific start with "PCS40:" and those for 100GBASE-R start with "PCS100:" e.g. SM1 would be PCS40:M. Applies to SM1, SM2, SM4, SM5, SM8, SM9.
Proposed Response
This says "The physical instantiation of the PMD service interfaces for 40GBASE-SR4 and 100GBASE-SR10 PMDs, known as XLPII and CPPI, are defined in Annex 86A." But, XLPII and CPPI are optional.

SuggestedRemedy
Change "The physical instantiation of " to "The optional physical instantiation of ".

Proposed Response

This says "If the interface between the PMA client and the PMA is physically instantiated (XLAUI/CAUI), the PMA shall meet the electrical and timing specifications in Annex 83A or Annex 83B as appropriate." Which implies that if it is physically instantiated as something other than XLAUI/CAUI, it would still have to comply with Annex 83A or 83B.

SuggestedRemedy
Change "is physically instantiated (XLAUI/CAUI), the PMA shall" to "is physically instantiated as XLAUI/CAUI, the PMA shall". Also on line 47 change "physically instantiated (XLAUI/CAUI or nPPI), the PMA shall" to "physically instantiated as XLAUI/CAUI or nPPI, the PMA shall".

Proposed Response

This says "Annex 86A specifies the Parallel Physical Interface (XLPII and CPPI), the physical instantiation of the PMD service interface for 40GBASE-SR4 and 100GBASE-SR10 PMDs" but XLPII and CPPI are optional.

SuggestedRemedy
Change "(XLPII and CPPI), the physical instantiation of " to "(XLPII and CPPI), an optional physical instantiation of ".

Proposed Response

Space missing in "output lanes. If bit"

SuggestedRemedy
Change "output lanes. If bit" to "output lanes. If bit"

Proposed Response
Cl 83 SC 83.5.7 P 212 L 11 # 479
Anslow, Peter Nortel Networks
Comment Type E Comment Status D
"(where the interface to is physically instantiated)" doesn't make sense
SuggestedRemedy
Change to "(where the interface is physically instantiated)"

Cl 83 SC 83.5.8 P 212 L 28 # 480
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
This says "is accessible through register 1.8.0". But 1.8.0 is a bit, not a register.
SuggestedRemedy
Change to "is accessible through bit 1.8.0". Also change "(register 1.0.0, see 45.2.1.1.4)," to "(bit 1.0.0, see 45.2.1.1.4)," on line 31. Make equivalent changes on lines 47 and 50 and also page 213 line 10.

Cl 83 SC 83.5.10 P 213 L 10 # 481
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
This says "accessible through the PRBS pattern testing control and status (", but register 1.307 is called the Test pattern ability register.
SuggestedRemedy
Change to "accessible through the PRBS pattern testing control and status (" to "accessible through the Test pattern ability register ("
Note: there is another comment proposing to change the "register" in the brackets to "bit".

Cl 83 SC 83.5.10 P 214 L 6 # 483
Anslow, Peter Nortel Networks
Comment Type E Comment Status D
The variables "PRBS_TX_gen_enable", "PRBS_RX_gen_enable", "PRBS_TX_check_enable", "PRBS_RX_check_enable" used on pages 213 and 214 (12 instances total) do not match the variable names in Table 83-2 which are "TX_PRBS_gen_enable" etc.
SuggestedRemedy
Since the variables used elsewhere in the clause are "PRBS_TX_" etc. change the 4 variables in Table 83-2 to match those used in the text. Also, on Page 213 lines 28, 37 and 46 the last underscore is missing from the variable names.

Cl 83 SC 83.5.10 P 214 L 36 # 484
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
Register 1.307 is the "Test pattern ability" register. Also, the "Square wave test ability" bit is 1.307.12
SuggestedRemedy
Change "is accessible through the square wave testing pattern ability register 1.307.15" to "is accessible through the Test pattern ability register, bit 1.307.12" or to "is accessible through the Square wave test ability bit 1.307.12"
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>485</td>
<td>T</td>
<td>D</td>
<td>Change to &quot;are accessible through the square wave testing control and status register&quot;</td>
</tr>
<tr>
<td>486</td>
<td>T</td>
<td>D</td>
<td>Change the last two sentences to &quot;Lanes for which square wave is not enabled will transmit normal data resulting from the bit multiplexing operations described in 83.5.2 or transmit test patterns as determined by other registers.&quot;</td>
</tr>
<tr>
<td>487</td>
<td>E</td>
<td>D</td>
<td>Add &quot;Mapping of MDIO counter to PMA counters is shown in Table 83-4.&quot;</td>
</tr>
<tr>
<td>488</td>
<td>T</td>
<td>D</td>
<td>Replace with &quot;PMA/PMD control 1&quot; for register 1.0, &quot;PRBS pattern testing control&quot; for 1.309 and &quot;Square wave testing control&quot; for 1.308.</td>
</tr>
<tr>
<td>489</td>
<td>E</td>
<td>D</td>
<td>Change TX to Tx (2 places) and change RX to Rx (2 places).</td>
</tr>
<tr>
<td>490</td>
<td>E</td>
<td>D</td>
<td>Change TX to Tx (2 places) and change RX to Rx (2 places).</td>
</tr>
</tbody>
</table>

Anslow, Peter, Nortel Networks
Table 83-4. In the column for "MDIO status variable" the variable names don't match the names in clause 45 and these are counters rather than status variables. In the column for "PMA/PMD register name" the names don't match either.

**Suggested Remedy**
- Change variables to "Error counter, lane x" and change the column heading to "MDIO variable"
- Change the register names to "PRBS Tx pattern testing error counter, lane x" or "PRBS Rx pattern testing error counter, lane x"

**Proposed Response**
- Response Status: O

The title of subclause 83.7 should contain the clause 83 title.

**Suggested Remedy**
- Change "sublayer, 40GBASE-R and 100GBASE-R" to "sublayer, type 40GBASE-R, 100GBASE-R" Also, at line 6 change "PMA Interface sublayer, 40GBASE-R and 100GBASE-R" to "Physical Medium Attachment (PMA) sublayer, type 40GBASER, 100GBASE-R"

**Proposed Response**
- Response Status: O

Both "PMA40" and "PMA100" are shown as optional, but one of the two must be present for this PICS to apply. Use the format of "O.<n> optional field/function, but at least one of the group of options labeled by the same numeral <n> is required".

**Suggested Remedy**
- Show them both as O:1

**Proposed Response**
- Response Status: O

The skew requirements are in 83.5.3 not 83.5.2

**Suggested Remedy**
- Change subclause to 83.5.3

**Proposed Response**
- Response Status: O

For Item "PPI" the Status column contains "SP2SP5:M". But SP2SP5 is "Physically instantiated PMD service interface" not "PMD service interface instantiated as nPPI". Hence this is inappropriate since the PMD service interface could be physically instantiated as something other than nPPI.

**Suggested Remedy**
- Since SP2SP5 is used correctly to define skew requirements, either remove this PICS item or create "nPPI to be "PMD service interface instantiated as nPPI"

**Proposed Response**
- Response Status: O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Response Status</th>
<th>Comment ID</th>
<th>Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>497</td>
<td>E</td>
<td>D</td>
<td>Six places in the Value/Comment column use &quot;&lt;=&quot; rather than the less than or equal to symbol</td>
<td>Replace &quot;=&quot; with the less than or equal to symbol (Ctrl-q #)</td>
<td>O</td>
<td>498</td>
<td>E</td>
<td>D</td>
<td>In Table 84-1, the order of clauses is confusing as XLAUI is shown between XGMII and PCS. Also applies to clause 85 Table 85-1</td>
<td>Show the clauses in the order that they appear in the stack in Figure 84-1. Do the equivalent for Table 85-1</td>
<td>O</td>
</tr>
<tr>
<td>499</td>
<td>E</td>
<td>D</td>
<td>Clause 73 is no longer called &quot;Auto-Negotiation for Backplane Ethernet&quot;</td>
<td>Since the full title may be too long, change &quot;Auto-Negotiation for Backplane Ethernet&quot; to &quot;Auto-Negotiation&quot; as per Table 85-1. Same issue on Page 232, line 12.</td>
<td>O</td>
<td>500</td>
<td>E</td>
<td>D</td>
<td>This says &quot;IS_UNITDATA_i.indication&quot; but it should be &quot;PMD:IS_UNITDATA_i.indication&quot; (2 places)</td>
<td>Change &quot;IS_UNITDATA_i.indication&quot; to &quot;PMD:IS_UNITDATA_i.indication&quot; (2 places). Make the same change in clause 45, Page 237, line 9</td>
<td>O</td>
</tr>
<tr>
<td>501</td>
<td>T</td>
<td>D</td>
<td>In Tables 84-2 and 84-3 the MDIO variable names do not all match the names used in Clause 45. Likewise, not all of the register names match with the names in Clause 45. Same issue in Tables 85-2 and 85-3</td>
<td>In the MDIO variable columns, change &quot;Transmit disable x&quot; to &quot;PMD transmit disable x&quot;, change &quot;Global PMD Receive signal detect&quot; to &quot;Global PMD receive signal detect&quot;, change &quot;PMD signal detect x&quot; to &quot;PMD receive signal detect x&quot;</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>502</td>
<td>E</td>
<td>D</td>
<td>Throughout the draft we have used n to denote the number of lanes and i for a variable. See 84.7.7 for example. Same issue in corresponding subclause of clause 85</td>
<td>Change &quot;each PMD_signal_detect_n value, where n represents&quot; to &quot;each PMD_signal_detect_i value, where i represents&quot; and show both &quot;i&quot;s in italic font. Make the same change in subclause 85.7.5, Page 241, line 47</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This says "and does not exceed the maximum differential peak-to-peak output voltage specified in Table 72-6." Since Table 72-6 contains both "Differential peak-to-peak output voltage (max.)" and "Differential peak-to-peak output voltage (max.) with TX disabled" it is not as clear as it should be which limit applies. Same issue on line 23.

**SuggestedRemedy**

Change "and does not exceed the maximum differential peak-to-peak output voltage specified in Table 72-6." to "and does not exceed the maximum differential peak-to-peak output voltage with TX disabled specified in Table 72-6." Make the same change on line 23.

---

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

Variables should be in italic font

**SuggestedRemedy**

In "The PMD_transmit_disable_i function (where i represents" show the two ")"s in italic font. Also on lines 21, 24 and 26

**Proposed Response**

**Response Status:** O

---

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

This says "Control of the loopback function is specified in 45.2.1.1.4. But 45.2.1.1.4 is "PMA local loopback" not PMD loopback. Same issue in 85.7.8

**SuggestedRemedy**

Either explain that the loopback function is in the co-located PMA or provide a separate control function. Also, 45.2.1.1.4 should be a link. Apply the same change in 85.7.8

**Proposed Response**

**Response Status:** O

---

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

The bit defined in 45.2.1.7.4 is called "Transmit fault". Also, 45.2.1.7.4 should be a link. Same issue in 85.7.10

**SuggestedRemedy**

Change "mapped to the PMD_transmit_fault bit" to "mapped to the Transmit fault bit". Also, make 45.2.1.7.4 a link. Make the same changes in 85.7.10 Page 242, line 50

**Proposed Response**

**Response Status:** O

---

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

The bit defined in 45.2.1.7.5 is called "Receive fault". Also, 45.2.1.7.5 should be a link. Same issue in 85.7.11

**SuggestedRemedy**

Change "contribute to PMA/PMD receive fault bit" to "contribute to the Receive fault bit". Also, make 45.2.1.7.5 a link. Make the same changes in 85.7.11 Page 243, line 6

**Proposed Response**

**Response Status:** O

---

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

This says "Receiver electrical characteristics at TP4 for 40GBASE-KR4 shall be the same as 10GBASE-KR, as detailed in 72.7.1.1 through 72.7.2.5. But 72.7.1.1 is for the transmitter. Receiver characteristics start at 72.7.2.1

**SuggestedRemedy**

Change "as detailed in 72.7.1.1 through 72.7.2.5." to "as detailed in 72.7.2.1 through 72.7.2.5."

**Proposed Response**

**Response Status:** O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>509</td>
<td>E</td>
<td>D</td>
<td>45.2.1.9.5 is an external reference so it should be dark blue</td>
<td>Make it dark blue</td>
<td>O</td>
</tr>
<tr>
<td>510</td>
<td>T</td>
<td>D</td>
<td>FS7 Value/Comment says &quot;Set to FAIL&quot;. When should it be set to FAIL&quot;</td>
<td>Change &quot;Set to FAIL&quot; to &quot;Set to FAIL on reset&quot;</td>
<td>O</td>
</tr>
<tr>
<td>511</td>
<td>T</td>
<td>D</td>
<td>This says &quot;Requirements of 84.7.6, 84.7.7 and Table 72-6&quot;. But Table 72-6 contains many requirements, only one of which must be met.</td>
<td>Change &quot;Requirements of 84.7.6, 84.7.7 and Table 72-6&quot; to &quot;Requirements of 84.7.6, 84.7.7&quot;</td>
<td>O</td>
</tr>
<tr>
<td>512</td>
<td>E</td>
<td>D</td>
<td>MF3 says &quot;Sets PMD_transmit_fault as specified in 45.2.1.7.5.&quot; This should be PMD_receive_fault.</td>
<td>Change &quot;Sets PMD_transmit_fault&quot; to &quot;Sets PMD_receive_fault&quot;. Also 45.2.1.7.5 and 45.2.1.7.4 in MF2 should be links.</td>
<td>O</td>
</tr>
<tr>
<td>513</td>
<td>E</td>
<td>D</td>
<td>Missing &quot;,&quot;</td>
<td>Change &quot;defined in 80.3.&quot; to &quot;defined in 80.3.&quot;</td>
<td>O</td>
</tr>
<tr>
<td>514</td>
<td>E</td>
<td>D</td>
<td>This says &quot;is mapped to register bit 1.1.7 as listed in&quot;. 1.1.7 is bit 7 of register 1.1.</td>
<td>Change &quot;is mapped to register bit 1.1.7 as listed in&quot; to &quot;is mapped to bit 1.1.7 as listed in&quot;</td>
<td>O</td>
</tr>
</tbody>
</table>
**Comment Type** E  **Comment Status** D

The "Value" for the Transmitter DC amplitude is "> 0.34 min, 0.6 max". Since the value 0.34 is "min", the inclusion of ">" is confusing. Likewise, ">0.63*Transmitter DC amplitude" is a different style from the rest of the table for no good reason.

**Suggested Remedy**

Change "> 0.34 min, 0.6 max" to "0.34 min, 0.6 max". Correct spelling of transmitter in Parameter column. Also, change "Linear fit pulse" to "Linear fit pulse (min)" and change ">">0.63*Transmitter DC amplitude" to "0.63*Transmitter DC amplitude".

**Proposed Response**

Response Status O

---

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

"p" and "e" are variables, so should be in italic font

**Suggested Remedy**

Show "p" and "e" in italic font.

**Proposed Response**

Response Status O

---

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

This doesn't say whether the "normalized error(linear fit), "e"" of 0.037 is max or min

**Suggested Remedy**

Change "normalized error(linear fit), "e"" to "max normalized error(linear fit), "e""

**Proposed Response**

Response Status O

---

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

"83A.5.1" and "83.5.10" should be links

**Suggested Remedy**

Make "83A.5.1" and "83.5.10" links and black

**Proposed Response**

Response Status O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>Page</th>
<th>Line</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>521</td>
<td>85</td>
<td>245</td>
<td>3</td>
<td>T</td>
<td>D</td>
<td>Use naming as per dambrosia_01_0909.pdf</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>522</td>
<td>85</td>
<td>245</td>
<td>35</td>
<td>E</td>
<td>D</td>
<td>&quot;PRBS-31&quot; should be &quot;PRBS31&quot;</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>523</td>
<td>85</td>
<td>246</td>
<td>33</td>
<td>E</td>
<td>D</td>
<td>In &quot;c(n)&quot;, n is a variable, so should be in italic font. Also, why do items a to c and a1 to c1 use &quot;n&quot; and d1 uses &quot;k&quot; as a variable? k would be a better choice since n is used for the number of lanes elsewhere.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>524</td>
<td>85</td>
<td>247</td>
<td>3</td>
<td>E</td>
<td>D</td>
<td>&quot;83.5.10&quot; should be a link. Also on line 34</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>525</td>
<td>85</td>
<td>247</td>
<td>39</td>
<td>E</td>
<td>D</td>
<td>In &quot;sampled pulse pi&quot; the &quot;i&quot; should be a subscript.</td>
<td></td>
<td>O</td>
</tr>
</tbody>
</table>
| 526        | 85 | 248  | 1    | T            | D              | The two ratios: 
"(c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1))" 
"((c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1))" appear to be identical, so how do they give 1.29 +/-10% and 2.57 +/-10% at the same time? |             | O               |
Cl 85  SC 85.8.3.3.3  P 248  L 22  # 527
Anslow, Peter  Nortel Networks

Comment Type: E  Comment Status: D
In "c(1)" the "c" should be italic.

Suggested Remedy: 
In "c(1)" make the "c" italic.

Proposed Response: 
Response Status: O

Cl 85  SC 85.8.3.3.5  P 248  L 45  # 528
Anslow, Peter  Nortel Networks

Comment Type: E  Comment Status: D
In "y(k)" the "k" should be italic.

Suggested Remedy: 
In "y(k)" make the "k" italic. Do the same on Page 249 lines 21 and 30

Proposed Response: 
Response Status: O

Cl 85  SC 85.8.3.3.5  P 248  L 46  # 529
Anslow, Peter  Nortel Networks

Comment Type: E  Comment Status: D
In "M-by-N" the "-by-" should not be italic as it is not a variable.

Suggested Remedy: 
In "M-by-N" make the "-by-" appear in normal font. Do the same on Page 249, lines 6, 15 and 47.

Proposed Response: 
Response Status: O
Cl 85 SC 85.8.4 P 252 L 32 # 533
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
This has a value of "10 dB max from 50 MHz to 10000 MHz" so a value of say 20 dB would be out of spec.
Suggested Remedy
Change "10 dB max from 50 MHz to 10000 MHz" to "10 dB min from 50 MHz to 10 GHz". Also, use a non-breaking space (Ctrl Space) between 50 and MHz
Proposed Response

Cl 85 SC 85.8.4.2 P 253 L 3 # 534
Anslow, Peter Nortel Networks
Comment Type E Comment Status D
Subclause 85.8.4.2 says that the test "shall" be done, but does not include pointers to the subclauses that describe the test (which are not subclauses of 85.8.4.2).
Suggested Remedy
Change "shall be implemented using" to "shall be implemented as defined in 84.8.4.3 using"
Proposed Response

Cl 85 SC 85.8.4.3.2 P 254 L 27 # 535
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
This says "The MDNEXT is measured from points HTx to point LUT in Figure 85--7." but there are two points labelled "LUT" in Figure 85-7.
Suggested Remedy
Clarify which point marked "LUT" is meant.
Proposed Response

Cl 85 SC 85.10.5 P 259 L 42 # 537
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
Comment 65 against D 2.3 was agreed to be re-submitted by the Editor against D 3.0. The directed proposed response only makes changes against Page 259 line 44, but other changes are needed to fix this issue. Note: another comment proposes changes to the "where" sections of equations 85-26 and 85-27.
Suggested Remedy
In addition to the change needed on Page 259 line 44, on line 42 change "(MDNEXT) loss is specified as the power sum of the individual NEXT losses" to "(MDNEXT) loss is specified using the individual NEXT losses. MDFEXT loss is determined from the three or nine ..." to "MDNEXT loss is specified using the individual FEXT losses. MDFEXT loss is determined from the three or nine ..." on Page 419 line 9 change "is specified as the power sum of the individual NEXT" to "is specified using the individual NEXT", on line 14 change "specified as the power sum of the individual FEXT" to "specified using the individual FEXT"
Proposed Response

Cl 85 SC 85.10.5 P 259 L 48 # 538
Anslow, Peter Nortel Networks
Comment Type T Comment Status D
Equations 85-26 and 85-27 should show the units as dB
Suggested Remedy
Add the units "dB" to equations 85-26 and 85-27.
Proposed Response

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
<table>
<thead>
<tr>
<th>Comment ID</th>
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<th>Response Status</th>
<th>Comment</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>539</td>
<td>T</td>
<td>D</td>
<td>O</td>
<td>In equation 85-26, &quot;NLi(f) is the power of the NEXT loss at frequency f of pair combination i, in dB.&quot; What is the meaning of &quot;the power of&quot; here? Isn't NLi(f) simply the NEXT loss? If some manipulation of the loss is implied, then it should be explicit in the equation. Also applies to equation 85-27.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>540</td>
<td>T</td>
<td>D</td>
<td>O</td>
<td>In Equation 85-34 change &quot;ILcatfmax&quot; to &quot;ILcatf&quot; (2 places). Also in Figure 85-12 use the same variable name instead of &quot;IL_CATF&quot;.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>541</td>
<td>E</td>
<td>D</td>
<td>O</td>
<td>If an IEC document for this connector is going to be published in time for 802.3ba to reference it, then it must be going through the IEC balloting process already.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>542</td>
<td>T</td>
<td>D</td>
<td>O</td>
<td>This says &quot;is coupled to the cable assembly, as per 85.8, by the MDI.&quot; but 85.8 is &quot;MDI Electrical specifications for 40GBASE-CR4 and 100GBASE-CR10&quot; not a definition of the cable assembly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>543</td>
<td>T</td>
<td>D</td>
<td>O</td>
<td>Since 85.11.3 is 100GBASE-CR10 specific, make it subclause of 85.11.2.1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>544</td>
<td>E</td>
<td>D</td>
<td>O</td>
<td>Either change &quot;IEC XXXXX-X-XX&quot; to the draft IEC document number and add an editor's note to clause 1.5 giving the expected publishing date or replace this text with an alternative reference. (2 places).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comment 545

Comment Type: T
Comment Status: D

Whether or not the XLGMII or CGMII are supported or not matters for the PCS but is of no relevance to these PMD's. Also, the other PMDs in the 802.3ba draft do not have these items.

Suggested Remedy
Remove the "XLGMII" and "CGMII" PICS items. (If not then at least change "XLGMII interface" to "XLGMII" and "CGMII interface" to "CGMII" since the last I is interface and "CGMI interface" looks wrong)

Proposed Response

Response Status: O

Comment 546

Comment Type: T
Comment Status: D

The 2 "PCS" PICS entries indicate that "Support of 40GBASE-R PCS" and "Support of 100GBASE-R PCS" are both mandatory for a given device.

Suggested Remedy
Replace both "PCS" entries and both "PMA" entries with a single entry like the "SF1" entry in 86.11.4.1. "Compatible with 40GBASE-R or 100GBASE-R PCS and PMA"

Proposed Response

Response Status: O

Comment 547

Comment Type: T
Comment Status: D

PF6 says "For positive differential voltage corresponds to rx_bit = one"

Suggested Remedy
Change "For positive differential voltage ..." to "A positive differential voltage ..."

Proposed Response

Response Status: O

Comment 548

Comment Type: T
Comment Status: D

In PF7 "via PMD_SIGNAL.indication (SIGNAL_DETECT)" should be "via PMD:IS_SIGNAL.indication (SIGNAL_DETECT)"

Suggested Remedy
Change "via PMD_SIGNAL.indication" to "via PMD:IS_SIGNAL.indication"

Proposed Response

Response Status: O

Comment 549

Comment Type: T
Comment Status: D

In PF13 "Allows each lane transmitters to ..." should be "Allows each lane transmitter to ..."

Suggested Remedy
Change "transmitters" to "transmitter"

Proposed Response

Response Status: O

Comment 550

Comment Type: T
Comment Status: D

In PF17 the reference "72.6.10" should be dark blue

Suggested Remedy
Make "72.6.10" dark blue

Proposed Response

Response Status: O

Comment 551

Comment Type: T
Comment Status: D

In MF4 and MF5, "45.2.1.7.4" and "45.2.1.7.5" should be links.

Suggested Remedy
Make "45.2.1.7.4" and "45.2.1.7.5" links.

Proposed Response

Response Status: O
<table>
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<tr>
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<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>552</td>
<td>E</td>
<td>D</td>
<td>In DS2 &quot;Equation (85-1)&quot; and &quot;Equation (85-2)&quot; should be links.</td>
<td>Make &quot;Equation (85-1)&quot; and &quot;Equation (85-2)&quot; links.</td>
</tr>
<tr>
<td>553</td>
<td>T</td>
<td>D</td>
<td>In DS3 the reference to &quot;85.8.3.7&quot; should be &quot;85.8.3.6&quot;</td>
<td>In DS3 change &quot;85.8.3.7&quot; to &quot;85.8.3.6&quot;</td>
</tr>
<tr>
<td>554</td>
<td>T</td>
<td>D</td>
<td>Items CA12 through CA17 and MDC1 through MDC3 are shown as &quot;CBL:M&quot; or &quot;M&quot;. This means that any implementation must support all connector types (both 40G and 100G).</td>
<td>Create &quot;*CR4C1&quot;, &quot;*CR4C2&quot; and &quot;*CR10C&quot; PICS entries for CR4 Style-1, CR4 Style-2 and CR10 connectors and make them optional. (see &quot;*PMA40 and *PMA100 in 83.7.3 or Cl 88 PICS). Then make CA12 through CA17 and MDC1 through MDC3 &quot;CR4C1:M&quot; etc.</td>
</tr>
<tr>
<td>555</td>
<td>T</td>
<td>D</td>
<td>Item CA16 has a Value/Comment of &quot;40GBASE-CR4 Style-2 plug (SFF-8642 plug)&quot; but it is for a CR10 connector.</td>
<td>Change to &quot;100GBASE-CR10 plug (SFF-8642 plug)&quot;</td>
</tr>
<tr>
<td>556</td>
<td>T</td>
<td>D</td>
<td>Item MDC3 says &quot;100GBASE-CR10 plug (SFF-8642 plug)&quot; but the MDI is defined to be a receptacle.</td>
<td>Change to &quot;100GBASE-CR10 receptacle (SFF-8642 receptacle)&quot;</td>
</tr>
</tbody>
</table>
Cl 86 SC 86.4  P 282  L 35  # 559
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
In Tables 86-3 and 86-4 the MDIO variable names do not all match the names used in Clause 45. Likewise, not all of the register names match with the names in Clause 45. Also applies to Tables 87-2, 87-3, 88-2 and 88-3.

SuggestedRemedy
In the MDIO variable columns, change "Global transmit disable" to "Global PMD transmit disable", change "Transmit disable x" to "PMD transmit disable x", change "Local fault" to "Fault", change "PMD signal detect x" to "PMD receive signal detect x"
In the PMA/PMD register name columns, change "Control 1 register" to PMA/PMD control 1 register", change "Transmit disable register" to "PMD transmit disable register", change "Status x register" to "PMA/PMD status x register", change "Receive signal detect register" to "PMD receive signal detect register". Make equivalent changes to Tables 87-2, 87-3, 88-2 and 88-3.

Proposed Response  Response Status  O

Cl 86 SC 86.8.4.7  P 295  L 27  # 560
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
The response to comment 190 against Draft 2.2 to insert exception f in subclause 86.8.4.8 has incorrectly been applied to subclause 86.8.4.7 instead.

SuggestedRemedy
Move exception f) "The mode-conditioning patch cord suitable for 62.5/125 um fiber is not used." from subclause 86.8.4.7 to subclause 86.8.4.8

Proposed Response  Response Status  O

Cl 86 SC 86.10.1  P 297  L 29  # 562
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
Since Ed 2.0 of IEC 61280-4-1 is now published (See http://webstore.iec.ch/webstore/webstore.nsf/artrnum/043082) update text and remove Editor's note.

SuggestedRemedy
Change the text to refer to the new Annexes and remove the Editor's note. However, subclause 68.8 contains "with IEC 61280-4-1/Method 2." This will mean that we need to add a dated reference for IEC 61280-4-1 2009 here and in 1.3.

Proposed Response  Response Status  O

Cl 86 SC 86.10.4.6  P 306  L 18  # 564
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
Items "TP1 and "TP4 are for when compliance points TP1 or TP4 are exposed. This may be with an electrical interface other than that defined in Annex 86A, so it is not appropriate to list "Annex 86A" in the Value /Comments for these items.

SuggestedRemedy
Remove "Annex 86A" from "TP1 and "TP4

Proposed Response  Response Status  O

Cl 86 SC 86.11.3  P 302  L 15  # 563
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
Items *TP1 and *TP4 are for when compliance points TP1 or TP4 are exposed. This may be with an electrical interface other than that defined in Annex 86A, so it is not appropriate to list "Annex 86A" in the Value /Comments for these items.

SuggestedRemedy
Remove "Annex 86A" from *TP1 and *TP4

Proposed Response  Response Status  O

Cl 86 SC 86.11.4.6  P 306  L 18  # 564
Anslow, Peter  Nortel Networks

Comment Type  T  Comment Status  D
For item SO6 the reference should be "86.10.3.2" rather than "86.10.3.1"

SuggestedRemedy
Change "86.10.3.1" to "86.10.3.2"

Proposed Response  Response Status  O
<table>
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<th>Type</th>
<th>Status</th>
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<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>565</td>
<td>307</td>
<td>13</td>
<td>E</td>
<td>D</td>
<td>Since clause 87 has a single PMD type, the title of Table 87-1 &quot;PMD type and associated clauses&quot; seems inappropriate.</td>
<td>Change title to &quot;Clauses associated with the 40GBASE-LR4 PMD&quot;</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>566</td>
<td>316</td>
<td>49</td>
<td>E</td>
<td>D</td>
<td>In Table 87-10 the subclause for pattern 5 should be 82.2.10</td>
<td>Change &quot;82.2.11&quot; to &quot;82.2.10&quot;</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>567</td>
<td>317</td>
<td>22</td>
<td>T</td>
<td>D</td>
<td>In Table 87-11 the items &quot;Calibration of OMA for receiver tests&quot; and &quot;Vertical eye closure penalty calibration&quot; do not have an entry in the &quot;Related subclause&quot; column. Also applies to Table 88-11</td>
<td>Make them both &quot;87.8.11&quot; Also applies to Table 88-11.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>568</td>
<td>319</td>
<td>28</td>
<td>T</td>
<td>D</td>
<td>For the measurements of TDP and SRS in clauses 86, 87 and 88 clarification is needed that the BER of 1E-12 should be measured for the bits of the lane under test and not for the bits of all of the lanes together.</td>
<td>In 87.8.6.4 and 88.8.5.4 change &quot;)transmit and receive), each lane is tested individually using an optical filter to separate the lane under test from the others.&quot; to &quot;)transmit and receive), each lane is tested individually using an optical filter to separate the lane under test from the others, and the BER of 1 x 10--12 is for the lane under test on its own.&quot; Add to the end of the first paragraph of 87.8.11 &quot;The BER is required to be met for the lane under test on its own.&quot; Add an additional exception in 86.8.4.4 &quot;The BER of 1 x 10--12 is for the lane under test on its own.&quot; Insert an additional exception in 86.8.4.7 and 86.8.4.8 &quot;The BER must remain below 1 x 10--12 for the lane under test on its own&quot;.</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>569</td>
<td>319</td>
<td>33</td>
<td>E</td>
<td>D</td>
<td>&quot;Table&quot; twice in &quot;given in Table Table 87-7&quot;</td>
<td>Make them both &quot;Table&quot; twice in &quot;given in Table Table 87-7&quot;</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>570</td>
<td>332</td>
<td>2</td>
<td>E</td>
<td>D</td>
<td>In the title, &quot;types 40GBASE-LR4&quot; should be &quot;type 40GBASE-LR4&quot;</td>
<td>Change &quot;types 40GBASE-LR4&quot; to &quot;type 40GBASE-LR4&quot;</td>
<td></td>
<td>O</td>
</tr>
</tbody>
</table>
Cl 88 SC 88.8.10 P 351 L 24 # 571
Anslow, Peter  Nortel Networks

Comment Type T  Comment Status D
"per the methods of 52.9.9.3." should be "per the methods of 87.8.11.2." as in king_01_0709.pdf

SuggestedRemedy
Change "per the methods of 52.9.9.3." to "per the methods of 87.8.11.2."

Proposed Response  Response Status O

Cl 88 SC 88.12.4.5 P 359 L 22 # 572
Anslow, Peter  Nortel Networks

Comment Type E  Comment Status D
For COM9 the subclause should be 88.8.10 not 88.8.9

SuggestedRemedy
Change 88.8.9 to 88.8.10

Proposed Response  Response Status O

Cl 83A SC 83A.1 P 376 L 2 # 573
Anslow, Peter  Nortel Networks

Comment Type E  Comment Status D
This says "The XLAUI/CAUI allows interconnect distances of approximately 25 cm over printed circuit board including one connector, see 83A.4.1." But 83A.4.1 simply defines the characteristic impedance to be 100 ohms.

SuggestedRemedy
Change the reference to "83A.4"

Proposed Response  Response Status O

Cl 83A SC 83A.2.1 P 377 L 50 # 574
Anslow, Peter  Nortel Networks

Comment Type E  Comment Status D
The title of Figure 83A-3 "Insertion loss between Transmit Compliance Point and Transmitter" would be better with the order reversed. (direction of signal flow)

SuggestedRemedy
Change to "Insertion loss between Transmitter and Transmit Compliance Point"

Proposed Response  Response Status O

Cl 83A SC 83A.2.2 P 378 L 2 # 575
Anslow, Peter  Nortel Networks

Comment Type E  Comment Status D
The text "between the Receiver and the Receive Compliance Point" would be better with the order reversed. (direction of signal flow)

SuggestedRemedy
Change to "between the Receive Compliance Point and the Receiver"

Proposed Response  Response Status O

Cl 83A SC 83A.3.3 P 379 L 12 # 576
Anslow, Peter  Nortel Networks

Comment Type E  Comment Status D
This is the only instance of the spelling "signalling" in the draft (79 instances of "signaling")

SuggestedRemedy
Change to "signaling"

Proposed Response  Response Status O
The item "Signaling rate per lane (range)" has a subclause reference of 83A.3.3. In other words it is referenced to itself. This is not helpful.

**Suggested Remedy**
Replace "83A.3.3" with "-" (em dash). Do the same in Table 83A-2.

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

"1MHz" should be "1 MHz"

**Suggested Remedy**
Change "1MHz" to "1 MHz"

**Comment ID # 578**

There is only one template for this.

**Suggested Remedy**
Change "templates" to "template"

**Comment ID # 582**
<table>
<thead>
<tr>
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<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>583</td>
<td>T</td>
<td>D</td>
<td>Change to &quot;Input AC Common Mode Voltage tolerance&quot; and &quot;Input Rise and Fall Time tolerance&quot;.</td>
</tr>
<tr>
<td>584</td>
<td>T</td>
<td>D</td>
<td>Delete &quot;Total and dynamic generation within limits, maximum Dynamic-Skew can be tolerated&quot;. Add a skew requirements subclause that just points to clause 83 for the skew requirements.</td>
</tr>
<tr>
<td>585</td>
<td>T</td>
<td>D</td>
<td>Change to &quot;83A.3.3&quot;</td>
</tr>
<tr>
<td>586</td>
<td>E</td>
<td>D</td>
<td>Change to 10 superscript -12</td>
</tr>
<tr>
<td>587</td>
<td>E</td>
<td>D</td>
<td>Change to &quot;applications which use the XLAUI / CAUI interface&quot;</td>
</tr>
<tr>
<td>Comment ID</td>
<td>Comment Type</td>
<td>Comment Status</td>
<td>Proposed Response</td>
</tr>
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<tr>
<td>589</td>
<td>E</td>
<td>D</td>
<td>Anslow, Peter</td>
</tr>
<tr>
<td>592</td>
<td>T</td>
<td>D</td>
<td>Anslow, Peter</td>
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<td>593</td>
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<td>D</td>
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<tr>
<td>594</td>
<td>T</td>
<td>D</td>
<td>Anslow, Peter</td>
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</table>

Comment Type: E = Editorial, T = Technical, G = General
Comment Status: D = Dispatched, A = Accepted, R = Rejected
Response Status: O = Open, W = Written, C = Closed, U = Unsatisfied, Z = Withdrawn

**Comment 589**

Comment Type: E
Comment Status: D
Anslow, Peter, Nortel Networks

In Figure 83B-3 it would be helpful to put arrow heads on the lines that terminate on the connector. This means that for the Figures that are derived from this Figure (Figures 83B-5 and 83B-7) when only one side or the other is visible, there will still be arrows on both top and bottom lines. Secondly, the top line is a different thickness from the bottom one. Also, this figure should be drawn in native Framemaker in order to make future modification much easier and to make Figures 83B-5 and 83B-7 (which are derived from it) more consistent. For example in Figure 83B-5 the small arrow head is still visible above the HCB, the fonts are different, etc.

**Proposed Remedy**
Add two arrow heads, make the lines the same thickness, drawn in Framemaker and propagate these changes to Figures 83B-5 and 83B-7.

**Comment 590**

Comment Type: T
Comment Status: D
Anslow, Peter, Nortel Networks

This says "The chip-module XLAUI / CAUI interface specifies compliance points around the module connector as depicted in Figure 83B--5 and Figure 83B--7." but these figures do not show any compliance points.

**Proposed Remedy**
Label the compliance points.

**Comment 591**

Comment Type: T
Comment Status: D
Anslow, Peter, Nortel Networks

Equation 83B-2 is for the reference HCB test fixture PCB insertion loss. This should be a smooth curve as per Equation 83B-3 for the MCB and have 2.1 dB loss at 5.15625 GHz

**Proposed Remedy**
Use a scaled version of equation 86A-4 with chosen loss at 5.15625 GHz. This would be: 0.017 + 0.5 * sqrt(f) + 0.1836 * f for 2.1 dB at 5.15625 GHz.

**Comment 592**

Comment Type: E
Comment Status: D
Anslow, Peter, Nortel Networks

In Figure 83B-7 the HCB is labelled "Up to 1dB", but there is no maximum HCB loss value.

**Proposed Remedy**
Change to "MCB PCB = 1 dB" where the "=" is an approximately equals as used in Table 80-4. Do the same thing for Figure 83B-5 for the appropriate reference loss.

**Comment 593**

Comment Type: T
Comment Status: D
Anslow, Peter, Nortel Networks

Item MC1 is for module single ended output voltage range. Where is this requirement in Annex 83B?

**Proposed Remedy**
Either add the requirement or remove the PICS entry.

**Comment 594**

Comment Type: T
Comment Status: D
Anslow, Peter, Nortel Networks

In Table 83B-2 "Minimum Module differential input return loss", Module should have a lower case m.

**Proposed Remedy**
Change to module.
### Comment 595

**Cl:** 83B  **SC:** 83B.4.4  **P:** 408  **L:** 18  **#:** 595

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

Item HC12 is "Receiver AC coupling" "Present". Where is this requirement in Annex 83B?

**Suggested Remedy:**
- Either add the requirement or remove the PICS entry

**Proposed Response**

**Proposed Response**

---

### Comment 596

**Cl:** 85A  **SC:** 85A.2  **P:** 415  **L:** 28  **#:** 596

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

In Table 85A-1 the "Differential peak-to-peak output voltage (max.) with TX disabled" refers to 72.6.5 which is the "PMD transmit disable function". This doesn't seem very helpful. It would be better to use the same reference as Table 85-4

**Suggested Remedy:**
- Change "72.6.5" to "85.8.3.3"

**Proposed Response**

---

### Comment 597

**Cl:** 85A  **SC:** 85A.3  **P:** 416  **L:** 22  **#:** 597

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

In the where section of Equation 85A-1, "ILPCB(f) is the maximum insertion loss for the transmitter and receiver PCB" should not be the maximum. That is ILPCBmax(f)

**Suggested Remedy:**
- Change to " ILPCB(f) is the insertion loss for the transmitter and receiver PCB" Make the equivalent change for "minimum" in the where section of Equation 85A-2

**Proposed Response**

---

### Comment 598

**Cl:** 85A  **SC:** 85A.4  **P:** 416  **L:** 33  **#:** 598

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

There is a close bracket missing from the end of line 33

**Suggested Remedy:**
- Change "Equation (85A-1)." to "Equation (85A-1))."

**Proposed Response**

---

### Comment 599

**Cl:** 85A  **SC:** 85A.4  **P:** 416  **L:** 37  **#:** 599

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

In Equation 85A-1 

"-(0.30)" should not have a trailing zero.

**Suggested Remedy:**
- Change "(0.30)" to "(0.3)"

**Proposed Response**

---

### Comment 600

**Cl:** 85A  **SC:** 85A.4  **P:** 416  **L:** 44  **#:** 600

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

"-10 max from 0.01 to 11.1 GHz" should be "-10 max from 0.01 GHz to 11.1 GHz" to comply with the style manual.

**Suggested Remedy:**
- Change "from 0.01 to 11.1 GHz" to "from 0.01 GHz to 11.1 GHz".

**Proposed Response**

---
Comment Type: E  Comment Status: D

In the where section of Equation 85A-1, "b1" should be in italic font.

Suggested Remedy
Change "b1" to italic

Proposed Response  Response Status: O

Comment ID # 601

Comment Type: E  Comment Status: D

Equation 85A-4 starts with a spurious "(".

Suggested Remedy
Change "ILCh(f)" to "ILCh(f)"

Proposed Response  Response Status: O

Comment ID # 602

Comment Type: T  Comment Status: D

Equation 85A-5 should have units of "(dB)"

Suggested Remedy
Add "(dB)". Also, "ILCh(f)" should be in the where section.

Proposed Response  Response Status: O

Comment ID # 603

Comment Type: E  Comment Status: D

In Figure 86A-5 the label "Differential to common-mode mode conversion loss looking in to HCB or MCB" has "mode" twice which does not match the parameter name.

Suggested Remedy
change to "Differential to common-mode conversion loss looking in to HCB or MCB"

Proposed Response  Response Status: O

Comment ID # 606

Comment ID: 601

Comment ID: 602

Comment ID: 603

Comment ID: 606
Draft 3.0 Comments

IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments

Sponsor ballot

<table>
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<th>Comment ID</th>
<th>Cl</th>
<th>SC</th>
<th>P</th>
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<td>512</td>
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<td>45</td>
<td>45.2.1.81</td>
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<td>53</td>
<td>37</td>
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</tbody>
</table>

**Comment ID # 607**

**Cl 86A SC 86A.5.3.8 P 433 L 35**

Anslow, Peter
Nortel Networks

**Comment Type** E

Comment Status D

"86A.5.3.8.1" and "86A.5.3.8.6" should be links

**Suggested Remedy**

Make them links.

**Proposed Response** Response Status O

---

**Comment ID # 608**

**Cl 86A SC 86A.5.3.8.1 P 433 L 40**

Anslow, Peter
Nortel Networks

**Comment Type** E

Comment Status D

"at the Rx host (PMA) compliance point" is unclear

**Suggested Remedy**

Change to "at the host input (PMA) compliance point"

**Proposed Response** Response Status O

---

**Comment ID # 609**

**Cl 86A SC 86A.5.3.8.2 P 434 L 2**

Anslow, Peter
Nortel Networks

**Comment Type** E

Comment Status D

"looking looking" is needless repetition

**Suggested Remedy**

Delete one "looking"

**Proposed Response** Response Status O

---

**Comment ID # 610**

**Cl 00 SC 0 P 23 L 47**

Dambrosia, John
Force 10 Networks Inc

**Comment Type** E

Comment Status D

Listing of projects that ran in parallel with IEEE P802.3ba are incomplete and should be updated. IEEE P802.3az is also modifying clauses that IEEE P802.3ba is modifying.

**Suggested Remedy**

Add reference to IEEE P802.3az in editor's note.

**Proposed Response** Response Status O

---

**Comment ID # 611**

**Cl 00 SC 0 P 23 L 47**

Dambrosia, John
Force 10 Networks Inc

**Comment Type** ER

Comment Status D

Global - Plots of insertion loss, return loss, crosstalk limits are inconsistent. Some plots do not indicate where the pass regions are, but others do and use various terminologies to indicate where the acceptable region is - "Acceptable Region", "Recommended Region", "Pass Region", "Compliant Region"

**Suggested Remedy**

Be consistent on all graphs regarding whether a pass region will be indicated. If the pass region is to be indicated, then use consistent terminology to indicate that region.

**Proposed Response** Response Status O

---

**Comment ID # 612**

**Cl 45 SC 45.2.1.80 P 53 L 17**

Dambrosia, John
Force 10 Networks Inc

**Comment Type** TR

Comment Status D

Believe there is a typo causing conflict between register address in Table 45-3 (Register address 1.276) and statement in 45.2.1.80 (A copy of this register may be implemented at address 1.267 to assist PHY access for devices using postread-increment-address access for a multi-lane PCS.)

**Suggested Remedy**

Believe that table is correct. Change register address in 45.2.1.80 to 1.276.

**Proposed Response** Response Status O

---

**Comment ID # 613**

**Cl 45 SC 45.2.1.81 P 53 L 37**

Dambrosia, John
Force 10 Networks Inc

**Comment Type** TR

Comment Status D

Believe there is a typo causing conflict between register address in Table 45-3 (Register address 1.286) and statement in 45.2.1.81 (A copy of this register may be implemented at address 1.268 to assist PHY access for devices using postread-increment-address access for a multi-lane PCS. If implemented, all accesses to the copy shall have identical behavior as the original register.)

**Suggested Remedy**

Believe that table is correct. Change register address in 45.2.1.81 to 1.286.

**Proposed Response** Response Status O

---

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

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

**SORT ORDER:** Comment ID

**Page 108 of 159**
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: Comment ID

**Comment ID # 614**

Dambrosia, John  
Force 10 Networks Inc

**Comment**

Believe there is a typo causing conflict between register address in Table 45-3 (Register address 1.296) and statement in 45.2.1.82 (A copy of this register may be implemented at address 1.269 to assist PHY access for devices using postread-increment-address access for a multi-lane PCS. If implemented, all accesses to the copy shall have identical behavior as the original register.)

**Suggested Remedy**

Believe that table is correct. Change register address in 45.2.1.82 to 1.296.

**Proposed Response**

**Response Status**: O

**Comment ID # 615**

Dambrosia, John  
Force 10 Networks Inc

**Comment**

Shall statement does not include corresponding pic statement.

**Suggested Remedy**

add corresponding pic statement

**Proposed Response**

**Response Status**: O

**Comment ID # 616**

Dambrosia, John  
Force 10 Networks Inc

**Comment**

Shall statement does not include corresponding pic statement.

**Suggested Remedy**

add corresponding pic statement

**Proposed Response**

**Response Status**: O

**Comment ID # 617**

Dambrosia, John  
Force 10 Networks Inc

**Comment**

Shall statement does not include corresponding pic statement.

**Suggested Remedy**

add corresponding pic statement

**Proposed Response**

**Response Status**: O

**Comment ID # 618**

Dambrosia, John  
Force 10 Networks Inc

**Comment**

PIC statements related to implementation of 100GBASE-ER4, 100GBASE-LR4, 100GBASE-SR10, 100GBASE-CR10, 40GBASE-LR4, 40GBASE-SR4, 40GBASE-CR4, and 40GBASE-KR4 PMA / PMD not included

**Suggested Remedy**

add corresponding pic statement

**Proposed Response**

**Response Status**: O

**Comment ID # 619**

Dambrosia, John  
Force 10 Networks Inc

**Comment**

Shall statement does not include corresponding pic statement.

**Suggested Remedy**

add corresponding pic statement

**Proposed Response**

**Response Status**: O
Draft 3.0 Comments

IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments

Sponsor ballot

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<th>L</th>
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<td>82.7.4.1</td>
<td>196</td>
<td>33</td>
<td>820</td>
<td>E</td>
<td>D</td>
<td>Items C3 and C4 should refer to 82.2.3.3, not 82.2.3</td>
<td>modify subclause # to 82.2.3.3</td>
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<td>82.2.11</td>
<td>180</td>
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<td>D</td>
<td>No corresponding PIC statement for this text - It shall form 4 or 20 bit streams from the primitives by concatenating the bits from the indications of each primitive in order from each inst:IS_UNITDATA_0.indication to inst:IS_UNITDATA_3.indication or inst:IS_UNITDATA_0.indication to inst:IS_UNITDATA_19.indication.</td>
<td>add corresponding pic statement</td>
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<tr>
<td>83</td>
<td>83.7.3</td>
<td>219</td>
<td>36</td>
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<td>D</td>
<td>The text states the following - &quot;This clause specifies the 40GBASE-KR4 PMD. In order to form a complete PHY, the PMD shall be connected to the appropriate sublayers (see Table 84–1)&quot; but the PIC in 84.11.3 includes the XLGMI interface which is an optional interface but not a sublayer. however, the XLAUI does not have a PIC.</td>
<td>add appropriate pic for XLAUI</td>
<td>O</td>
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<td>D</td>
<td>The text states the following - &quot;This clause specifies the 40GBASE-KR4 PMD. In order to form a complete PHY, the PMD shall be connected to the appropriate sublayers (see Table 84–1)&quot; but the PIC in 84.11.3 includes the XLGMI interface which is an optional interface but not a sublayer. however, the XLAUI does not have a PIC.</td>
<td>add appropriate pic for XLAUI</td>
<td>O</td>
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<td>D</td>
<td>The text states the following - &quot;This clause specifies the 40GBASE-KR4 PMD. In order to form a complete PHY, the PMD shall be connected to the appropriate sublayers (see Table 84–1)&quot; but the PIC in 84.11.3 includes the XLGMI interface which is an optional interface but not a sublayer. however, the XLAUI does not have a PIC.</td>
<td>add appropriate pic for XLAUI</td>
<td>O</td>
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Dambrosia, John
Force 10 Networks Inc
Cl 83  SC 83.7.5  P 221  L 28  # 626
Dambrosia, John  Force 10 Networks Inc

Comment Type  TR  Comment Status  D
PIC statements for JTP1 and JTP2 have no corresponding SHALL statements

SuggestedRemedy
add appropriate SHALL statements to 83.5.10

Proposed Response  Response Status  O

Cl 84  SC 84.11.4.1  P 233  L 11  # 627
Dambrosia, John  Force 10 Networks Inc

Comment Type  TR  Comment Status  D
There is no corresponding "SHALL" statement for FS2

SuggestedRemedy
add appropriate "shall" statement to 84.7.2

Proposed Response  Response Status  O

Cl 84  SC 84.7.4  P 227  L 41  # 628
Dambrosia, John  Force 10 Networks Inc

Comment Type  TR  Comment Status  D
There is no corresponding PIC for the second SHALL of the following sentence - If the MDIO interface is implemented, then Global_PMD_signal_detect (1.10.0) shall be continuously set to the value of SIGNAL_DETECT as described in 45.2.1.9.5; and PMD_signal_detect_0 (1.10.1), PMD_signal_detect_1 (1.10.2), PMD_signal_detect_2 (1.10.3) and PMD_signal_detect_3 (1.10.4) shall be set to one or zero depending on whether a particular lane’s signal_detect, as defined by the training state diagram in Figure 72-5, returns true or false.

SuggestedRemedy
add appropriate PIC to 84.11.4.1

Proposed Response  Response Status  O

Cl 85  SC 85.13.4  P 273  L 14  # 629
Dambrosia, John  Force 10 Networks Inc

Comment Type  TR  Comment Status  D
PIC for XLAUI but not for CAUI

SuggestedRemedy
add appropriate pic for CAUI

Proposed Response  Response Status  O

Cl 85  SC 85.13.4  P 273  L 30  # 630
Dambrosia, John  Force 10 Networks Inc

Comment Type  TR  Comment Status  D
Given the multiple skew and skew variation constraints, the values comment should direct the reader to 85.5

SuggestedRemedy
modify value/comment for DSC by adding "constraints specified in 85.5" at end of sentence

Proposed Response  Response Status  O

Cl 85  SC 85.6  P 238  L 5  # 631
Dambrosia, John  Force 10 Networks Inc

Comment Type  TR  Comment Status  D
There is a PIC statement for Item MD in 85.13.4, but no corresponding SHALL statement in 85.6.

SuggestedRemedy
add appropriate SHALL statement to 85.6.

Proposed Response  Response Status  O
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| 632        | 85 | 85.7.2 | D   | TR   | The following paragraph "The 40GBASE-CR4 PMD Transmit function shall convert the four bit streams requested by the PMD service interface messages D:IS_UNITDATA_0.request to PMD:IS_UNITDATA_3.request into four separate electrical streams. A positive output voltage of SL<p> minus SL<n> (differential voltage) shall correspond to tx_bit = one. The 100GBASE-CR10 PMD Transmit function shall convert the ten bit streams requested by the PMD service interface messages PMD:IS_UNITDATA_0.request to PMD:IS_UNITDATA_9.request. A positive output voltage of SL<p> minus SL<n> (differential voltage) shall correspond to tx_bit = one." seems to justify the PF1 and PF3 PICS in 85.13.4.1, but not the PF2 PIC. Suggested Remedy: add appropriate Shall statement to 85.7.2 in relation to PF2.
| 633        | 85 | 85.13.4.1 | D   | TR   | 85.7.6 is for Global PMD transmit disable function, not lane by lane transmit disable as indicated in PF13. Suggested Remedy: change subclause to 85.7.7.
| 634        | 85 | 85.7.9 | D   | TR   | Shouldn't there be a SHALL statement defining PMD-fault with corresponding PIC, as well as SHALL statement regarding mapping to register bit 1.1.7? Suggested Remedy: Add corresponding PICS to 85.13.4.1 and SHALL statements in 85.7.9.
| 635        | 85 | 85.7.5 | D   | TR   | 85.7.5 does not include a SHALL statement for PIC MF3 in 85.13.4.2 Suggested Remedy: Modify sentence as follows - When the MDIO is implemented, each PMD_signal_detect_n value, where n represents the lane number in the range 0:3 for 40GBASE-CR4 and 0:9 for 100GBASE-CR10, shall be continuously updated as described in 85.7.4 above.
| 636        | 85 | 85.8.3.7 | D   | TR   | There is PIC DS4 with no corresponding SHALL statement Suggested Remedy: add PIC.
| 637        | 85 | 85.8.4.3.4 | D   | TR   | Shall statement does not include corresponding PIC statement. Suggested Remedy: add PIC.
The SHALL statement states - The maximum allowed values of the polynomial coefficients a1, a2, and a4 of the fitted cable assembly insertion loss of each pair of the 40GBASE-CR4 and 100GBASE-CR10 shall meet the specifications summarized in Table 85-9 unless otherwise noted. The PIC value refers to Eq 85-19.

Suggested Remedy
Modify SHALL statement to include equation

Proposed Response
Response Status O

SHALL statement is "The total integrated crosstalk RMS noise voltage shall meet the values determined by Equation (85-33) illustrated in Figure 85-11." No PIC and the CA5 PIC does not refer to equation 85-33

Suggested Remedy
modify CA5 to include equation 85-33

Proposed Response
Response Status O

No SHALL statement for CA6, and it is not clear how EQ 85-16 fits into the requirement

Suggested Remedy
Add SHALL statement and clarify relationship to EQ 85-16

Proposed Response
Response Status O
### Comment 645

**Comment:** Dambrosia, John  
**Type:** TR  
**Status:** D

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<td>TR</td>
<td>D</td>
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**Comment Type:** TR  
**Status:** D

**Comment:** no corresponding SHALL statements to subclauses referenced for CA18

**Suggested Remedy:**
- add shall statements or clarify subclause references

**Proposed Response:**

**Response Status:** O

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### Comment 646

**Comment:** Dambrosia, John  
**Type:** TR  
**Status:** D

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

**Comment:** 4 SHALL statements in 85.84.3.2 and 85.84.3.3 with no corresponding PICS

**Suggested Remedy:**
- add PICS

**Proposed Response:**

**Response Status:** O

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### Comment 647

**Comment:** Dambrosia, John  
**Type:** TR  
**Status:** D

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<td>PIC SF2 is in regards to integration with management functions, but there is no corresponding SHALL statement - “A PMD is optionally connected to the management functions that may be accessible through the management interface defined in Clause 45.”</td>
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**Comment Type:** TR  
**Status:** D

**Comment:** PIC SF2 is in regards to integration with management functions, but there is no corresponding SHALL statement - “A PMD is optionally connected to the management functions that may be accessible through the management interface defined in Clause 45.”

**Suggested Remedy:**
- add SHALL statement

**Proposed Response:**

**Response Status:** O

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### Comment 648

**Comment:** Dambrosia, John  
**Type:** TR  
**Status:** O

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**Comment Type:** TR  
**Status:** O

**Comment:** What is the corresponding SHALL statement for this PIC? There is one SHALL statement that corresponds to SM3

**Suggested Remedy:**
- add SHALL statement

**Proposed Response:**

**Response Status:** O

---

### Comment 649

**Comment:** Dambrosia, John  
**Type:** ER  
**Status:** D

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

**Comment:** values for D, SF3 - SF5 are blank

**Suggested Remedy:**
- List values for D, SF3 - SF5

**Proposed Response:**

**Response Status:** O

---

### Comment 650

**Comment:** Dambrosia, John  
**Type:** TR  
**Status:** D

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**Comment Type:** TR  
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**Comment:** No corresponding SHALL statements to subclauses referenced for SM1

**Suggested Remedy:**
- add SHALL statement

**Proposed Response:**

**Response Status:** O
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<td>For SOM3 the value cited is for the test methodology, but not the limit that needs to be met, which is per limits given in Table 86-6</td>
<td>Add reference to limits being in Table 86-6 in Value comment for SOM3</td>
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**Type**: TR/technical required

**Comment Status**: D/dispatched

**Response Status**: O/open

**Sort Order**: Comment ID

**Page Number**: 117 of 159

**Date**: 12/29/2009 7:38:13 PM
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Cl 83A SC 83A.7.4 P 392 L 4 # 679
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
No supporting SHALL statements for any PICS in 83A.7.3

Suggested Remedy
add shall statements for NOL, RATE, IO, INT

Proposed Response Response Status O

Cl 83B SC 83B.4.3 P 407 L 5 # 680
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
The SHALL statement points to Tables 83B-2 and 83B-3, but then things are called out singularly in the PICS, and in some cases things that don't have a table entry have a corresponding SHALL statement (MC1); entries in table with no corresponding PICs - module output signal, minimum module differential output return loss, various De-emphasis entries in Table 83B-3; and different names - module input reflection should be minimum module differential input return loss).

Suggested Remedy
modify PIC to reflect SHALL statement - A module which uses XLAUI / CAUI to interface with a host shall meet the characteristics outlined in Table 83B--2 and Table 83B--3

Proposed Response Response Status O

Cl 83B SC 83B.4.4 P 407 L 40 # 681
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
The SHALL statement points to Tables 83B-4 and 83B-5, but then things are called out singularly in the PICS, and there are conflicts- missing items, or names changed

Suggested Remedy
modify PIC to reflect SHALL statement - A host which uses XLAUI / CAUI to interface with a module shall meet the characteristics outlined in Table 83B--4 and 83B--5

Proposed Response Response Status O

Cl 83B SC 83B.4.4 P 408 L 4 # 682
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
PIC HC12 has no corresponding SHALL statement

Suggested Remedy
add SHALL statement

Proposed Response Response Status O

Cl 83B SC 83B.4. P 407 L # 683
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
Missing Major capabilities / options subclause

Suggested Remedy
add major capabilities / options PICS subclause

Proposed Response Response Status O

Cl 86A SC 86A.8.4.3 P 442 L 44 # 684
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
missing shall statements for SEM2, SEM3, and SEM4

Suggested Remedy
Add SHALL statement

Proposed Response Response Status O

Cl 86A SC 86A.8.3 P 441 L 12 # 685
Dambrosia, John Force 10 Networks Inc

Comment Type TR Comment Status D
Missing shall statements for MO, HO, MD

Suggested Remedy
add shall statements

Proposed Response Response Status O
Cl 86A SC 86A.8.4.1 P 441 L 31 # 686
Dambrosia, John Force 10 Networks Inc
Comment Type TR  Comment Status D
Missing shall statements for SF2, d, sf3, AND sf4.
SuggestedRemedy
add shall statements
Proposed Response Response Status O

Cl 85 SC 85.8.3 P 244 L 26 # 687
Healey, Adam LSI Corporation
Comment Type T  Comment Status D
The rows corresponding to the "linear fit pulse" (circa line 24) and "min amplitudes(linear fit)" (circa line 27) are redundant and inconsistent. The appropriate requirement is that the peak amplitude of the linear fit pulse be no less than 0.63 times the estimated transmitter DC amplitude (computed as stated in note b).
SuggestedRemedy
Remove the row "min amplitudes(linear fit)" from Table 85-4. In 85.8.3.3 (page 247, line 13) remove the line "The peak value of the linear fit pulse from step 3, p, shall be greater than 240 mV."
Proposed Response Response Status O

Cl 85 SC 85.10.2 P 257 L 13 # 589
Healey, Adam LSI Corporation
Comment Type T  Comment Status D
The caption for Table 85-9 states these are "example" maximum cable assembly insertion loss requirements. This does not appear to be an example, they are the actual requirements as stated in the preceding paragraph.
SuggestedRemedy
Delete the word "Example" from the caption.
Proposed Response Response Status O

Cl 85 SC 85.10.7 P 260 L 46 # 590
Healey, Adam LSI Corporation
Comment Type T  Comment Status D
The phrase "...and Fast Fourier transform (FFT)..." does not seem to fit.
SuggestedRemedy
Change the sentence to read "Note that -3 dB transmit filter bandwidths fnt and fft are inversely proportional to the 20 to 80% rise and fall times Tnt and Tft respectively."
Proposed Response Response Status O

Cl 85 SC 85.10.7 P 260 L 46 # 591
Healey, Adam LSI Corporation
Comment Type T  Comment Status D
I would be useful to declare that sinc( x ) is sin( pi*x )/(pi*x) since there is some ambiguity as to whether this is the normalized sinc function or not.
SuggestedRemedy
Add a statement to this paragraph that defined sinc( x ).
Proposed Response Response Status O
The conversion factor 0.2365 assumes that fnt is expressed in Hz and Tnt is in seconds. At line 32, fnt is implied to be units of MHz and Table 85-10 states the units of Tnt are picoseconds which may lead to confusion.

**Suggested Remedy**
State that the conversion factor is for fnt in units of Hz and Tnt in units of seconds.

**Proposed Response**

The IEC numbers for the 100GBASE-CR10 connectors are missing.

**Suggested Remedy**
Supply the correct reference or add an editor's note that informs the reader when the correct reference is expected to be added.

**Proposed Response**

This paragraph states that "the cable assembly test fixture lanes not under test are terminated in 100 Ohms differentially." In fact, it seems the other lanes are connected to aggressor transmitters either associated with pattern generators (PEXT) or the device under test (NEXT). This intended to be a requirement on the terminating impedance presented by those transmitters. If so, the established return loss specifications should be used in their place.

**Suggested Remedy**
Remove this sentence. Supplement the requirements with the return loss requirement for the pattern generator (including far-end aggressors) as appropriate.

**Proposed Response**

Terminated in what impedance? Also "host transmitter" should be plural.

**Suggested Remedy**
Change last sentence to read "..., and host transmitters (HTx) and PGC terminated in 100 Ohms."
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<td>Change register addresses according to HB_05</td>
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<td>Change register address according to HB_06. Note that the register address is currently wrong.</td>
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<td>Change register addresses according to HB_07</td>
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<td>Change register address according to HB_08. Note that the register address is currently wrong.</td>
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<th>P 60</th>
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<th># 730</th>
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<td>Change register addresses according to HB_09</td>
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<td>45.2.1.97</td>
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<td>45</td>
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<td>63</td>
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<td>20</td>
<td>737</td>
<td>Cisco Systems, Inc.</td>
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**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

**Proposed Response**
- 

The names of registers 1.308 & 1.309 are reversed
Change register addresses according to HB_10. Note that the register address is currently wrong.

Change register address to 1.1400

Change register addresses according to HB_11
Change register addresses to 1.1401 to 1.1409

Change register address to 1.1500 (multiple instances)

Change register address to 1.1501 (multiple instances, note also reference in 45.2.1.95)

Change register addresses according to HB_15
Change register addresses to 1.1600 to 1.1609 (multiple instances)

Change register addresses to 1.1700 to 1.1709 (multiple instances)

Change names in table so that 1.308 is Square wave testing control and 1.309 is PRBS pattern testing control

Change register address according to HB_12
Change register address to 1.1500 (multiple instances)

Change register address according to HB_13
Change register address to 1.1501 (multiple instances, note also reference in 45.2.1.95)

Change register address according to HB_14
Change register address to 1.1502 (multiple instances, note also reference in 45.2.1.95)

Change register addresses according to HB_16
Change register addresses to 1.1700 to 1.1709 (multiple instances)

Change names in table so that 1.308 is Square wave testing control and 1.309 is PRBS pattern testing control

Change register address according to HB_17
Change register address to 1.1503 (multiple instances)

Change register addresses according to HB_18
Change register addresses to 1.1600 to 1.1609 (multiple instances)
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<tr>
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<th>P</th>
<th>L</th>
<th>Comment Type</th>
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<td>739</td>
<td>45</td>
<td>45.2.3.37</td>
<td>82</td>
<td>3</td>
<td>T</td>
<td>D</td>
<td>Change register address according to HB_17</td>
<td></td>
<td>O</td>
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<tr>
<td>740</td>
<td>45</td>
<td>45.2.3.38</td>
<td>82</td>
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<td>T</td>
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<td>Change register addresses according to HB_17</td>
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<td>O</td>
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<td>741</td>
<td>74</td>
<td>74.8</td>
<td>121</td>
<td>25</td>
<td>T</td>
<td>D</td>
<td>Change register addresses according to HB_02</td>
<td></td>
<td>O</td>
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<td>742</td>
<td>74</td>
<td>74.8</td>
<td>121</td>
<td>28</td>
<td>T</td>
<td>D</td>
<td>Change register addresses according to HB_03</td>
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<td>O</td>
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<tr>
<td>743</td>
<td>83</td>
<td>83.5.10</td>
<td>213</td>
<td>11</td>
<td>T</td>
<td>D</td>
<td>Change register addresses (currently 1.307) to 1.1500 - 7 instances. Also in Table 83-3, p.216</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>744</td>
<td>83</td>
<td>83.5.10</td>
<td>214</td>
<td>39</td>
<td>T</td>
<td>D</td>
<td>Change register addresses (currently 1.308) to 1.1501 - 2 instances. Also in Table 83-2, p.215</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>745</td>
<td>83</td>
<td>83.5.10</td>
<td>213</td>
<td>29</td>
<td>T</td>
<td>D</td>
<td>Change register addresses (currently 1.309) to 1.1502 - 12 instances. Also in Table 83-2, p.215</td>
<td></td>
<td>O</td>
</tr>
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Cl  83 SC  83.5.10 P 213 L 49 # 746
Barrass, Hugh Cisco Systems, Inc.

Comment Type T Comment Status D
Change register addresses according to HB_15

SuggestedRemedy
Change register addresses (currently 1.310-319) to 1.1600-1609. Also in Table 83-4, p.216

Proposed Response Response Status O

Cl  83 SC  83.5.10 P 214 L  8 # 747
Barrass, Hugh Cisco Systems, Inc.

Comment Type T Comment Status D
Change register addresses according to HB_16

SuggestedRemedy
Change register addresses (currently 1.320-219) to 1.1700-1709. Also in Table 83-4, p.217

Proposed Response Response Status O

Cl  82 SC  82.2.14 P 180 L 13 # 748
Barrass, Hugh Cisco Systems, Inc.

Comment Type TR Comment Status D
Change register addresses according to HB_17. Note that the register address range is currently wrong.

SuggestedRemedy
Change register addresses (currently 3.90-3.99) to 3.200-219. Also in Table 82-7, p.187

Proposed Response Response Status O
In accordance with comment HB_18, subclauses are required to define the PCS lane mapping registers.

**SuggestedRemedy**
Add subclause 45.2.3.40 - PCS lane mapping registers, lanes 1 through 19 (Register 3.401 through 3.419) - The definition of PCS lane mapping registers, lanes 1 through 19 is identical to that described for lane 0 in 45.2.3.39. The PCS lane mapping for lane 1 is in register 3.401; lane 2 is in register 3.402; etc.

**Comment Type:** T  **Response Status:** O

Proposed Response

In accordance with comment HB_18, it would be useful to include a set of PCS mapping registers for debug purposes.

**SuggestedRemedy**
Add the following paragraph: When the PCS alignment marker lock process achieves lock for a lane, it shall record the PMA service interface lane number that corresponds to the locked PCS lane in the appropriate PCS lane mapping register (3.400-3.419) see 45.2.3.39. - also update Table 82-7 and PICS.

**Comment Type:** T  **Response Status:** O

Proposed Response

Please use the approach agreed with staff in respect to inserts before existing first paragraph.

Change '45.2.1.4a 100G capable (1.4.9)' to read '45.2.1.4.1a 100G capable (1.4.9)'.
Change '45.2.1.4.b 40G capable (1.4.8)' to read '45.2.1.4.1b 40G capable (1.4.8)'.
Change '45.2.1.8.a PMD transmit disable 9 (1.9.10)' to read '45.2.1.8.1a PMD transmit disable 9 (1.9.10)'.
Change '45.2.1.8.2a PMD transmit disable 4, 5, 6, 7, 8 (1.9.5, 1.9.6, 1.9.7, 1.9.8, 1.9.9) to read '45.2.1.8.2b PMD transmit disable 4, 5, 6, 7, 8 (1.9.5, 1.9.6, 1.9.7, 1.9.8, 1.9.9)'.
Change '45.2.1.9.a PMD receive signal detect 9 (1.10.10) to read '45.2.1.9.1a PMD receive signal detect 9 (1.10.10)'.
Change '45.2.1.9.2a PMD receive signal detect 4, 5, 6, 7, 8 (1.10.5, 1.10.6, 1.10.7, 1.10.8, 1.10.9) to read '45.2.1.9.2b PMD receive signal detect 4, 5, 6, 7, 8 (1.10.5, 1.10.6, 1.10.7, 1.10.8, 1.10.9)'.
Change '45.2.3.15.1a Scrambled idle test-pattern enable (3.42.7)' to read '45.2.3.15.a Scrambled idle test-pattern enable (3.42.7)'.
<table>
<thead>
<tr>
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<th>Page</th>
<th>Line</th>
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<th>Comment Status</th>
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<td>755</td>
<td>244</td>
<td>26</td>
<td>TR</td>
<td>D</td>
<td>Line needs to be removed. Lines 22-24 replaced this</td>
<td>O</td>
</tr>
<tr>
<td>756</td>
<td>245</td>
<td>27</td>
<td>ER</td>
<td>D</td>
<td>Term ICN is too general, this is far-end integrated cross talk which is given the symbol sigma with subscript fx in the referenced section equation 85-31.</td>
<td>O</td>
</tr>
<tr>
<td>757</td>
<td>245</td>
<td>35</td>
<td>E</td>
<td>D</td>
<td>Other transmitters is too general and can lead to a reading that the Near end transmitters must be present.</td>
<td>O</td>
</tr>
<tr>
<td>758</td>
<td>247</td>
<td>13</td>
<td>TR</td>
<td>D</td>
<td>Lines 13-16 have been superceded by Table 85-4 lines 22-24 and page 245 lines 44 and 45</td>
<td>O</td>
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<tr>
<td>759</td>
<td>248</td>
<td>1</td>
<td>ER</td>
<td>D</td>
<td>How can 2 equations equal the same thing? (c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1)) is 1.29 and (c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1)) is 2.57</td>
<td>O</td>
</tr>
<tr>
<td>760</td>
<td>250</td>
<td>22</td>
<td>TR</td>
<td>D</td>
<td>The minimum loss channel is missing. This loss makes sure the RL can be met with realistic host IC's It is present in 86A and as such should be present in 85 that share the same port.</td>
<td>O</td>
</tr>
</tbody>
</table>
Comment Type: E
Comment Status: D
Test 1 and 2 are confusing. They are associated with long and short cable channel in other places and called out as high and low loss.

Suggested Remedy
Change Test 1 to Low Loss and Test 2 to High Loss

Proposed Response
Response Status: O

Comment Type: ER
Comment Status: D
"-" is confusing and this is not MDNEXT but "sigma subscript nx"

Suggested Remedy
Remove "-" and change MDNEXT to "sigma subscript nx"

Proposed Response
Response Status: O

Comment Type: T
Comment Status: D
There needs to be a management object that supports BIP errors.

Suggested Remedy
Insert a new subclause 30.5.1.1.11a after 30.5.1.1.11: aBIPErrorCount - ATTRIBUTE - APPROPRIATE SYNTAX: - A SEQUENCE of generalized non-resettable counters. Each counter has a maximum increment rate of 10 000 counts per second for 40 Gb/s implementations and 5 000 counts per second for 100 Gb/s implementations. - BEHAVIOUR DEFINED AS: - For 40/100GBASE-R PHYs, an array of BIP error counters. The counters will not increment for other PHY types. The indices of this array (0 to N - 1) denote the PCS lane number where N is the number of PCS lanes in use. Each element of this array contains a count of BIP errors for that PCS lane. - Increment the counter by one for each BIP error detected during alignment marker removal in the PCS for the corresponding lane. - If a Clause 45 MDIO Interface to the PCS is present, then this attribute will map to the BIP error counters (see 45.2.3.37 and 45.2.3.38); - also add the attribute to Table 30-1e (before aIdleErrorCount).

Proposed Response
Response Status: O
The editing instruction for subclause 45.2.1.82a reads 'Insert 45.2.1.82a and 45.2.1.82b for status register 2 & 3.' This doesn't make it totally clear where to place the new subclauses. According to the IEEE Standards Style Guide, a letter subclause such as this appears after the numbered so 45.2.1.82a would appear after 45.2.1.82. However, looking at the register numbers, it appears that these new subclauses should appear before 45.2.1.82.

45.2.1.81 10GBASE-KR LD status report register (Register 1.155)
45.2.1.82a BASE-R PMD status 2 register (Register 1.156)
45.2.1.82b BASE-R PMD status 3 register (Register 1.157)
45.2.1.82 1000BASE-KX control register (Register 1.160)
45.2.1.83 1000BASE-KX status register (Register 1.161)

I also note that the subclauses of 45.2.1.82b start at .5 as follows which I don't think is correct.

45.2.1.82b BASE-R PMD status 3 register (Register 1.157)
45.2.1.82b.5 Receiver status 4, 5, 6, 7 (1.157.0, 1.157.4)
45.2.1.82b.6 Frame lock 4, 5, 6, 7 (1.157.1, 1.157.5)
45.2.1.82b.7 Start-up protocol status 4, 5, 6, 7 (1.157.2, 1.157.6)
45.2.1.82b.8 Training failure 4, 5, 6, 7 (1.157.3, 1.157.7)

Suggested Remedy

Suggest the editorial instructions be changed to read 'Insert subclause 45.2.1.81a and 45.2.1.81b after subclause 45.2.1.81.'

Suggest that the subclauses be labelled as follows:

45.2.1.81a BASE-R PMD status 2 register (Register 1.156)
45.2.1.81a.1 Receiver status 4, 5, 6, 7 (1.156.0, 1.156.4, 1.156.8, 1.156.12)
45.2.1.81a.2 Frame lock 4, 5, 6, 7 (1.156.1, 1.156.5, 1.156.9, 1.156.13)
45.2.1.81a.3 Start-up protocol status 4, 5, 6, 7 (1.156.2, 1.156.6, 1.156.10, 1.156.14)
45.2.1.81a.4 Training failure 4, 5, 6, 7 (1.156.3, 1.156.7, 1.156.11, 1.156.15)
45.2.1.81b BASE-R PMD status 3 register (Register 1.157)
45.2.1.81b.1 Receiver status 8, 9 (1.157.0, 1.157.4)
45.2.1.81b.2 Frame lock 8, 9 (1.157.1, 1.157.5)
45.2.1.81b.3 Start-up protocol status 8, 9 (1.157.2, 1.157.6)
45.2.1.81b.4 Training failure 8, 9 (1.157.3, 1.157.7)

Suggested Remedy

Move the section after 85.8.3.5

Proposed Response

Ghiasi, Ali
Broadcom

Comment Type TR
Comment Status D
Document organization, it would a better fit to move 85.10.8 in to test fixture section

Suggested Remedy

Move the section after 85.8.3.5

Proposed Response

Ghiasi, Ali
Broadcom

Comment Type TR
Comment Status D
Document organization, it would a better fit to move 85.10.9 in to test fixture section

Suggested Remedy

Move the section after 85.8.3.5

Proposed Response

Ghiasi, Ali
Broadcom

Comment Type TR
Comment Status D
Document organization, it would a better fit to move 85.10.9 in to test fixture section

Suggested Remedy

Move the section after 85.8.3.5

Proposed Response
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<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
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</thead>
<tbody>
<tr>
<td>771</td>
<td>TR</td>
<td>D</td>
<td>Currently TP2/TP3 test fixture hangs in air</td>
<td>Please add host to the left of the TP2/TP3 test fixture. Replace the DC blocks and scope with rf port</td>
<td>O</td>
</tr>
<tr>
<td>772</td>
<td>TR</td>
<td>D</td>
<td>MLD can reorder lanes but figure 85-12 shows specific SL# connected to each pin of the MDI connector. Connecting lane 1 to lane one of the the MDI could compromise the signal integrity based on QSFP and CXP connector pin out. Unlike CL85, CL86 allows connecting any host lane to module lane for ease of flexiblity and SI</td>
<td>Current statement &quot;The Style-1 40GBASE-CR4 MDI connector contact assignment shall be as defined in Table 85-12.&quot; to &quot;Example Style-1 40GBASE-CR4 MDI connector contact assignment is shown in Table 85-12. Other wiring assignment is acceptable as long as Tx lane and Rx lane pairs are not broken and the polarity is maintained.&quot;</td>
<td>O</td>
</tr>
<tr>
<td>773</td>
<td>TR</td>
<td>D</td>
<td>MLD can reorder lanes but figure 85-12 shows specific SL# connected to each pin of the MDI connector. Connecting lane 1 to lane one of the the MDI could compromise the signal integrity based on QSFP and CXP connector pin out. Unlike CL85, CL86 allows connecting any host lane to module lane for ease of flexiblity and SI</td>
<td>Current statement &quot;The Style-1 40GBASE-CR4 MDI connector contact assignment shall be as defined in Table 85-12.&quot; to &quot;Example Style-1 40GBASE-CR4 MDI connector contact assignment is shown in Table 85-12. Other wiring assignment is acceptable as long as Tx lane and Rx lane pairs are not broken and the polarity is maintained.&quot;</td>
<td>O</td>
</tr>
<tr>
<td>774</td>
<td>TR</td>
<td>D</td>
<td>MLD can reorder lanes but figure 85-12 shows specific SL# connected to each pin of the MDI connector. Connecting lane 1 to lane one of the the MDI could compromise the signal integrity based on QSFP and CXP connector pin out. Unlike CL85, CL86 allows connecting any host lane to module lane for ease of flexiblity and SI</td>
<td>Current statement &quot;The Style-1 40GBASE-CR4 MDI connector contact assignment shall be as defined in Table 85-12.&quot; to &quot;Example Style-1 40GBASE-CR4 MDI connector contact assignment is shown in Table 85-12. Other wiring assignment is acceptable as long as Tx lane and Rx lane pairs are not broken and the polarity is maintained.&quot;</td>
<td>O</td>
</tr>
<tr>
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Cl 85 SC 85.84.3 P253 L38 #781
Ghiasi, Ali Broadcom

Comment Type TR Comment Status D

Fig 85-6 is missing load on the left side

SuggestedRemedy

Please add load to the left of the figure terminating all lanes

Proposed Response Response Status O

Cl 85 SC 85.84.3 P253 L38 #782
Ghiasi, Ali Broadcom

Comment Type TR Comment Status D

Fig 85-6 will improve if RX Under test show one lane under test as well as TX on the right all lanes active

SuggestedRemedy

Please implement the suggestion

Proposed Response Response Status O

Cl 85 SC 85.8.4.3.3 P254 L45 #783
Ghiasi, Ali Broadcom

Comment Type TR Comment Status D

The rise and fall time test pattern not provided and definition

SuggestedRemedy

Rise and fall times are measured with pattern of 8 ones and 8 zeros from 20-80%.

Proposed Response Response Status O

Cl 82 SC 82..2.18.3 P194 L26 #786
Ghiasi, Ali Broadcom

Comment Type TR Comment Status D

A good packet may get corrupted if followed by a runt packet across these 2 blocks if aligned as such. Note a runt packet (including S and T) that is 9 octets or greater is not a problem. Also having a minimum of 15 C's between packets is not a problem either. The first 8 octets comprise RTYPE = T, the next 8 octets comprise RTYPE_NEXT = E This causes Figure 82-15 to transition from RX_D to RX_E instead of RX_T. In effect, a good packet would be corrupted.

SuggestedRemedy

A possible solution is to define a block format to Figure 82-5, "R" to cover the runt packet. This would prevent this block from being labeled as an invalid or error block. Figure 82-15 could be updated in the transition from RX_D to RX_T to include "R", R_TYPE_NEXT = (S + C + R)

Proposed Response Response Status O
The CRU BW for the TDP measurement is defined to be 10 MHz and will result in higher power for more complex receiver. The argument for having higher CRU BW is to filter power supply and VCO noise, but noise sources are not scaling when operation speed increased from 10.3125 to 25.7 Gigabaud. So there is very little benefit of having higher CRU BW but a definite penalty. The 10 MHz burden will remain even in the case of future generations where ASIC/SerDes operate at 25 G with DFE receiver unless we require the CDR in the module to absorb the SJ with phase FIFO!

SuggestedRemedy
Propose to consider CRU BW 7 MHz instead of current 10 MHz. Higher CRU BW has very little benefit on the VCO noise and power supply noise but significant penalty on the receiver, see ghiasi_01_0110

Proposed Response

Transmitter eye diagram is measured CRU BW of 10 MHz will result to more complex higher power receiver implementations. D2.1 and comment 128 will result to more complex higher power receiver implementations. Increased CRU BW has very little benefit on the VCO noise. The 10 MHz burden will remain even in the case of future generations where ASIC/SerDes operate at 25 G with DFE receiver!

SuggestedRemedy
Propose CRU BW 7 MHz instead of current 10 MHz. Higher CRU BW has very little benefit on the VCO noise and power supply noise but significant penalty on the receiver, see ghiasi_01_0110

Proposed Response

Stress receiver sensitivity test for frequency greater than loop BW defines SJ in the range of 0.05 UI to 0.15 UI. Defining the stress receiver sensitivity with so much slop means the test will not be consistent and higher amount of SJ will penalize the receiver for no good reason. Why do we need to carry this 10 years old legacy when test equipment where arcade and CL86A already take advantage of this?

SuggestedRemedy
propose to limit max SJ to 0.05 UI, Figure 86A-10 and Table 86-7 can be used as guide line. Table 88-13 then becomes:

Proposed Response
Proposed Response

Comment Type  TR  Comment Status  D
Single mode objective was added late to the 802.3ba project per motion from barbieri_02_0308. Single mode 40GbE objective was added with broad market support from users, OEMs, and component suppliers. As a group however we failed to see early on that we need to extend nPPI so it can support 40GbE-LR4. The sheer size of the retimed interface forces the 40Gbase-LR4 into modules 4-10x the size of the QSFP module which is the choice for 40Gbase-SR4 PMD. The choices are to build a line card with high density and forgo single mode support or build a line card with <1/5 the aggregate BW possible with 40Gbase-SR4!

SuggestedRemedy

Extend the nPPI X4 to support 40Gbase-LR4, for detail implementation see comments on CL86 and 87 and king_01_0110

Proposed Response  Response Status  O

Comment Type  TR  Comment Status  D
To make a future 40GBASE-LR4 module with an unretimed interface feasible, the transmitter power levels of 40GBASE-LR4 are proposed to be increased by 0.3 dB, together with an increase of the maximum TDP by 0.3 dB.
A related comment proposes to change the J2 and J9 limits of the XLPPI interface. See king_01_0110.pdf

SuggestedRemedy

In Table 87-7 change:
- Total average launch power (max) from 8.3 to 8.6 dBm
- Average launch power, each lane (max) from 2.3 to 2.6 dBm
- Average launch power, each lane (min) from -7 to -6.7 dBm
- Optical Modulation Amplitude (OMA), each lane (max) from 3.5 to 3.8 dBm
- Optical Modulation Amplitude (OMA), each lane (min) from -4 to -3.7 dBm
- Launch power in OMA minus TDP, each lane (min) from -4.8 to -4.5 dBm
- Transmitter and dispersion penalty (TDP), each lane (max) from 2.3 to 2.6 dB
- RIN200MA (max) from -128 to -130 dB/Hz

In Table 87-8 change:
- Damage threshold (min) from 3.3 to 3.6 dBm
- Average receive power, each lane (max) from 2.3 to 2.6 dBm
- Average receive power, each lane (min) from -13.7 to -13.4 dBm
- Receive power, each lane (OMA) (max) from 3.5 to 3.8 dBm
- Receiver sensitivity (OMA), each lane (max) from -9.9 to -9.6 dBm
- Vertical eye closure penalty, each lane from 1.6 to 1.9 dB

In Table 87-9 change:
- Power budget (for max TDP) from 9 to 9.3 dB
- Allocation for penalties (for max TDP) from 2.3 to 2.6 dB

See king_01_0110.pdf for further details.
Note, there is a related comment to modify the J2 and J9 values for the XLPPI interfaces.

Proposed Response  Response Status  O
To make a future 40GBASE-LR4 module with an unretimed interface feasible, the J2 and J9 limits of the XLPPI interface are proposed to be slightly changed. A related comment proposes to modify the optical power levels of 40GBASE-LR4.

See king_01_0110.pdf

Suggested Remedy

In Table 86A-1 change "J2 Jitter output" to "J2 Jitter output for 100GBASE-R" and add a new row above for "J2 Jitter output for 40GBASE-R" with a value of 0.17 UI Max.

In Table 86A-2 change "J2 Jitter tolerance" to "J2 Jitter tolerance for 100GBASE-R" and add a new row for "J2 Jitter tolerance for 40GBASE-R" at "TP1a" with a value of 0.17 UI Max.

In Table 86A-3 change "J9 Jitter output" to "J9 Jitter output for 100GBASE-R" and add a new row above for "J9 Jitter output for 40GBASE-R" with a value of 0.64 UI Max.

In Table 86A-4 change "J9 Jitter tolerance" to "J9 Jitter tolerance for 100GBASE-R" and add a new row above for "J9 Jitter tolerance for 40GBASE-R" at "TP4" with a value of 0.64 UI Max.

See king_01_0110 for further details.

Note, there is a related comment to increase the optical power levels of 40GBASE-LR4

Comment Status: D

Response Status: O

Ghiasi, Ali Broadcom

No clear what PCB trace stress means is this electrical or mechanical stress or do I need to twist the PCB!

Suggested Remedy

Replace with "Frequency dependent attenuator **"
* PCB traces are example of Frequency dependent attenuator

Proposed Response Response Status: O

Ghiasi, Ali Broadcom

No clear what PCB trace stress means is this electrical or mechanical stress or do I need to twist the PCB!

Suggested Remedy

Replace with "Frequency dependent attenuator **"
* PCB traces are example of Frequency dependent attenuator

Proposed Response Response Status: O

Ghiasi, Ali Broadcom

Stress receiver sensitivity test for frequency greater than loop BW defines Sj in the range of 0.05 UI to 0.15 UI. Defining the stress receiver sensitivity with so much slop means the test will not be consistent and higher amount of SJ will penalize the receiver for no good reason. Why do we need to carry this 10 years old legacy when test equipment where arcade and CL86A already take advantage of this?

Suggested Remedy

propose to set SJ to 0.05 UI as illustrated by Figure 86A-10 and Table 86A-7

Proposed Response Response Status: O

Ghiasi, Ali Broadcom

Log scale hide the critical high freq attributes

Suggested Remedy

Change to linear scale

Proposed Response Response Status: O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
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<td>D</td>
<td>Log scale hide the critical high freq attributes</td>
<td>Change to linear scale</td>
<td>O</td>
</tr>
<tr>
<td>799</td>
<td>T</td>
<td>D</td>
<td>Log scale hide the critical high freq attributes</td>
<td>Change to linear scale</td>
<td>O</td>
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<tr>
<td>800</td>
<td>E</td>
<td>D</td>
<td>typo: &quot;style-2&quot;</td>
<td>Replace &quot;style-2&quot; with &quot;Style-2&quot;</td>
<td>O</td>
</tr>
<tr>
<td>801</td>
<td>E</td>
<td>D</td>
<td>typo: &quot;Clause85&quot;</td>
<td>Replace &quot;Clause85&quot; with &quot;Clause 85&quot;</td>
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<tr>
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<td>D</td>
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<td>Add a space after &quot;the&quot;</td>
<td>O</td>
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<tr>
<td>803</td>
<td>E</td>
<td>D</td>
<td>sentence structure difficult to read.</td>
<td>Replace &quot;Clause 85&quot; with &quot;Clause 85&quot;</td>
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<tr>
<td>Comment ID</td>
<td>Type</td>
<td>Comment Status</td>
<td>Suggested Remedy</td>
<td>Proposed Response</td>
<td>Response Status</td>
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</tr>
<tr>
<td>805</td>
<td>E</td>
<td>D</td>
<td>add footnote to 85.13 section title. See Clause 86 PICS (86.11.4) for an example of required footnote text and formatting</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>806</td>
<td>T</td>
<td>D</td>
<td>replace Figure 85-20 title with &quot;Example Style-2 MDI board receptacle&quot;</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>807</td>
<td>T</td>
<td>D</td>
<td>Add two rows to table (after XLAUI row) to indicate support for CR4 &amp; CR10 PMDs. First row: Item = &quot;CR4&quot;; Feature = &quot;40GBASE-CR4 PMD&quot;; Value/comment: &quot;Can operate as 40GBASE-CR4 PMD&quot;; status = &quot;O.1&quot; Second row: Item = &quot;CR10&quot;; Feature = &quot;100GBASE-CR10 PMD&quot;; Value/comment: &quot;Can operate as 100GBASE-CR10 PMD&quot;; status = &quot;O.1&quot; Change Status of the next four rows from &quot;M&quot; to &quot;CR4:M&quot; and &quot;CR10:M&quot; as appropriate i.e., 40GBASE-R PCS &amp; PMA are &quot;CR4:M&quot;; 100GBASE-R PCS &amp; PMA are &quot;CR10:M&quot;</td>
<td></td>
<td>O</td>
</tr>
</tbody>
</table>
PICs requires cable assembly to have all three connector types. Also pin assignment PICs for cables do not have Status or Support fields. This can be remedied by creating an Item for each cable assembly type to be used as conditions in 85.13.4.5

**SuggestedRemedy**

Add three rows to options table (85.13.4) to indicate cable assembly type.

First added row: Item = "*CA401"; Feature = "40GBASE-CR4 Style-1 cable assembly"; Value/comment: "Cable assembly supports 40GBASE-CR4 Style-1"; status= "CBL:O.3"

Second added row: Item = "*CA402"; Feature = "40GBASE-CR4 Style-2 cable assembly"; Value/comment: "Cable assembly supports 40GBASE-CR4 Style-2"; status= "CBL:O.3"

Third added row: Item = "*CA100"; Feature = "100BASE-CR10 cable assembly"; Value/comment: "Cable assembly supports 100BASE-CR4"; status= "CBL:O.3"

Change cable assembly PICS table (85.13.4.5) to use appropriate predicate items in Status field. Change the Status field for Items CA12 and CA13 to "CBL*CA401:M" Change the Status field for Items CA14 and CA15 to "CBL*CA402:M" Change the Status field for Items CA16 and CA17 to "CBL*CA100:M" Change Support field for CA13, CA15, and CA17 to match CA12 Support field. Option: The status "CBL*CA401:M" is redundant since CA401 only applies to CBL, thus you could drop the CBL predicate and only use CA401/CA402/CA100 in the above Status changes.

**Proposed Response**

**Response Status** O

---

What do the tildes mean in the Maximum (ns) column in Table 81-1? One use for a tilde is to mean approximately. If that is the case, how does one "meet the values specified in Table 81-1" specifically in the column using approximate values? Especially when the paragraph states the maximum cumulative delay shall meet the values specified in the table.

**SuggestedRemedy**

If the current use of tildes means approximately, then remove the tilde and use a maximum value, i.e. if the value is +/- 10 ns then add 10 ns and it will be a maximum.

**Proposed Response**

**Response Status** O

---

The min amplitude (linear fit) spec of 0.24V conflicts with Linear fit pulse spec on line 23-24.

**SuggestedRemedy**

Delete min amplitude (linear fit) spec.

**Proposed Response**

**Response Status** O

---

Deterministic jitter is not specified so saying DCD is considered part of it is meaningless.

**SuggestedRemedy**

In note e delete "Duty Cycle Distortion is considered part of the deterministic jitter distribution"

**Proposed Response**

**Response Status** O
During July 2009 plenary petrilla_01_0709 stated:

At TP4, for the combination of J2 (max = 0.46 UI) X1 = 0.11 UI and J9 (max = 0.63 UI), max TJ is estimated at 0.716 UI. This is higher than the expected 0.68 UI and may place too heavy a burden on the downstream receiver. Relief is proposed by reducing max J9 from 0.63 UI to 0.62 UI to yield a max TJ estimate of 0.704 UI.

The premise for the change was not to exceed TJ of 0.7 UI but the current J2=0.46 and J9=0.62 results in TJ of 0.66 UI, this will increase cost of the optics and will make 100Gbase-SR10 implementation more difficult due to the X10 connector. Please set the specification to what was intended.

Suggested Remedy:

Keep J2 but increase J9 to 0.4. TJ 1E-12 depends on the jitter distribution but for the case of max DJ (32 ps) to hit J2 then TJ=0.7 UI.

Ghiasi, Ali, Broadcom

Comment # 814

Comment Type: TR
Comment Status: D

Proposed Response

---

Suggested Remedy:

The "square wave test pattern" is not specified. The spec could be calling for alternating 1s and 0s, which will not work.

Suggested Remedy:

Change 6) to:

"The reference lane of the transmitter under test sends a square wave test pattern, consisting of 5 consecutive ones followed by five consecutive zeros, while all other lanes send either scrambled idle or PRBS-31."

Ghiasi, Ali, Broadcom

Comment # 815

Comment Type: TR
Comment Status: D

Proposed Response

---

Suggested Remedy:

Some explanation of the intent of the following procedure may make the procedure easier for the reader to understand.

Suggested Remedy:

Change:

"Instead the following process is defined for the verification of transmit equalizer performance at TP2."

to:

"Instead the effective channel characteristic between the equalizer function and TP2 is determined and then equalized to measure the transmit equalizer function directly. The process below accomplishes this."

Moore, Charles, Avago Technologies

Comment # 817

Comment Type: T
Comment Status: D

Proposed Response

---
### Proposed Response

#### Comment ID # 818

<table>
<thead>
<tr>
<th>Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR</td>
<td>D</td>
<td>The peak value of the linear fit pulse is out of alignment with table 85-1</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Change:

- “The peak value of the linear fit pulse from step 3, p, shall be greater than 240 mV.”
- “DC amplitude, the sum of linear fit pulse response, p(k), from step 3 divided by M from step 3, shall be greater than 0.34V and no greater than 0.6V. The peak of the linear fit pulse response from step 3 shall be greater than 0.63*DC amplitude.”

#### Comment ID # 819

<table>
<thead>
<tr>
<th>Type</th>
<th>Comment Status</th>
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</thead>
<tbody>
<tr>
<td>TR</td>
<td>D</td>
<td>Step 3 is referenced elsewhere and should be as clear as possible. I think that its clarity can be improved.</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Change:

- “Compute the linear fit to the captured waveform per 85.8.3.3.5”
- “Compute the linear fit pulse response, p(k),”

Make the same change to step 9 (line 35).

Also in steps 10 and 11 (lines 37-39) change:

- “linear fit pulse, p,”
- “linear fit pulse response, p(k),”

and in notes b and c to Table 85-4, change:

- “linear fit pulse”
- “linear fit pulse response p(k)”

#### Comment ID # 820

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<tr>
<td>TR</td>
<td>D</td>
<td>The text of 85.8.3.5 Test Fixture and Figure 85-5 Transmitter test fixture, are very unclear.</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Have 85.8.3.5 State:

- The test fixture shown in Figure 85-5 or its functional equivalent is required for all Transmitter tests and for receiver return loss measurement. It shall consist of a plug connecting either to a 40-GBASE-CR4 or 100GBASE-CR10 MDI connector as appropriate and all necessary signals connected to RF connectors and all other signals terminated with 100 Ohms differential. When mated with a cable assembly test fixture it shall meet the specifications of 85.10.9.*

I will provide a suggested drawing.

#### Comment ID # 821

<table>
<thead>
<tr>
<th>Type</th>
<th>Comment Status</th>
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</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>D</td>
<td>Receiver interference tolerance test is not actually performed at TP3 since there is no Test fixture. The Calibration of the Test channel is in effect done at TP4</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

In 85.8.4.2, change:

- “Receiver interference tolerance test at TP3”

#### Comment ID # 822

<table>
<thead>
<tr>
<th>Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR</td>
<td>D</td>
<td>85.8.4.2 does not make it clear that both tests must pass</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Change The paragraph in 85.8.4.2 To:

- “The receiver shall path both Test 1 (short channel) and Test 2 (long channel) using the interference tolerance parameters listed in Table 85-7.”

#### Comment ID # 823

<table>
<thead>
<tr>
<th>Type</th>
<th>Comment Status</th>
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<tbody>
<tr>
<td>TR</td>
<td>D</td>
<td>85.8.4.3 Termination parameters are not specified</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Change The paragraph in 85.8.4.3 To:

- “The termination parameters for Test 1 (short channel) and Test 2 (long channel) shall be listed in Table 85-7.”

#### Comment ID # 824

<table>
<thead>
<tr>
<th>Type</th>
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<tr>
<td>TR</td>
<td>D</td>
<td>85.8.4.4 Termination parameters are not specified</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Change The paragraph in 85.8.4.4 To:

- “The termination parameters for Test 1 (short channel) and Test 2 (long channel) shall be listed in Table 85-7.”

#### Comment ID # 825

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>TR</td>
<td>D</td>
<td>85.8.4.5 Termination parameters are not specified</td>
</tr>
</tbody>
</table>

**Suggested Remedy**

Change The paragraph in 85.8.4.5 To:

- “The termination parameters for Test 1 (short channel) and Test 2 (long channel) shall be listed in Table 85-7.”
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Module channel model is not production manufacturable.</th>
<th>Response Status</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>823</td>
<td>Still simulating the models and cannot provide input at thus time.</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>I believe that the IEEE Standards style guide states that a subclause that is inserted between existing subclauses should be labelled as [lower numbered subclause][a-z] for example to insert two subclauses between 43.2.1 and 43.2.2 the new subclauses would be numbered 43.2.1a and 43.2.1b and not 43.2.2a and 43.2.2b. New subclauses 45.2.3.16a and 45.2.3.16b are proceeded with the editing instructions 'Insert after 45.2.3.16 for high order counters' which meets the IEEE Standards style guide. New subclauses 45.2.3.17a however are preceded with the editing instructions 'Insert before 45.2.3.17 for PCS alignment status:' which seems contrary to the IEEE Standards style guide. This results in:</th>
<th>Response Status</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>824</td>
<td>I believe to meet the IEEE Standards style guide this should actually be:</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

| Comment ID | Change '45.2.3.17a Multi-lane BASE-R PCS alignment status 1 register (Register 3.50)' to read '45.2.3.16 Multi-lane BASE-R PCS alignment status 1 register (Register 3.50)'. Change subclauses '45.2.3.17a.1' through '45.2.3.17a.9' to read '45.2.3.16a.1' through '45.2.3.16a.9'. Change '45.2.3.17b Multi-lane BASE-R PCS alignment status 2 register (Register 3.51)' to read '45.2.3.16d Multi-lane BASE-R PCS alignment status 2 register (Register 3.51)'. Change subclauses '45.2.3.17b.1' through '45.2.3.17b.12' to read '45.2.3.16d.1' through '45.2.3.16d.12'. Change '45.2.3.17c Multi-lane BASE-R PCS alignment status 3 register (Register 3.52)' to read '45.2.3.16e Multi-lane BASE-R PCS alignment status 3 register (Register 3.52)'. Change subclauses '45.2.3.17c.1' through '45.2.3.17c.8' to read '45.2.3.16e.1' through '45.2.3.16e.8'. Change '45.2.3.17d Multi-lane BASE-R PCS alignment status 4 register (Register 3.53)' to read '45.2.3.16f Multi-lane BASE-R PCS alignment status 4 register (Register 3.53)'. | O               |                   |
Draft 3.0 Comments

IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments

Sponsor ballot

<table>
<thead>
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<td>P240</td>
<td>9</td>
<td>#828</td>
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<td>Dudek, Michael</td>
<td>QLogic Corporation</td>
<td></td>
<td></td>
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<td>Comment Status: D</td>
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</tr>
</tbody>
</table>

Comment: TP3 is not at the input end of the mated connector. It is at a specified loss from this point.

Suggested Remedy: Replace the input end of the mated connector TP3 with TP3 using the test fixture specified in 85.8.3.5

<table>
<thead>
<tr>
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</tbody>
</table>

Comment: Section 83.7.4 is labelled Global PMD From line 35 on the lane by lane signal detect is described and then section 84.7.5 which is the lane by lane function refers back to this.

Suggested Remedy: Move the information on lane by lane signal detect from 84.7.4 to 87.7.5. Also consider putting this very long winded text into a table format.

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Comment: The existing wording is very difficult to follow.

Suggested Remedy: Replace "to be difference in the value measured to prior to" with "to be the difference in the value measured prior to"

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<th>Proposed Response</th>
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<th>Proposed Response</th>
<th>Response Status</th>
<th>Comment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>831</td>
<td>T</td>
<td>D</td>
<td>Figure 85-5 is difficult to follow.</td>
<td>Add a box labelled DUT to the left of the diagram with an output with the mating connector to the TP2 or TP3 test fixture. Put a box around everything to the right of the TP2 or TP3 vertical line. Label this box Test Equipment. Move the label for the line TP2 or TP3 higher so that it is the highest line in the diagram.</td>
<td>O</td>
<td>D</td>
<td>Dudek, Michael, QLogic Corporation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>833</td>
<td>T</td>
<td>D</td>
<td>The insertion loss is now reference not maximum.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>832</td>
<td>TR</td>
<td>D</td>
<td>I don't think it is feasible to get 15dB return loss up to 5GHz from the test fixture including the connector and I don't think referring back to clause 72 helps.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>835</td>
<td>E</td>
<td>D</td>
<td>Poor English</td>
<td></td>
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<td>834</td>
<td>E</td>
<td>D</td>
<td>Poor English</td>
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<td>Suggested Remedy</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>Sponsor</td>
<td>Comment</td>
<td>Type: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID</td>
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<tr>
<td>CI 85</td>
<td>ER</td>
<td>Comment Status</td>
<td>D</td>
<td>Change the name ILcatmax to ILcatref here and on line 39</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td>Dudek, Michael</td>
<td>QLogic Corporation</td>
</tr>
<tr>
<td>CI 85</td>
<td>TR</td>
<td>Comment Status</td>
<td>D</td>
<td>No mention is made of what amplitude the Tx channels should be at.</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td>Dudek, Michael</td>
<td>QLogic Corporation</td>
</tr>
<tr>
<td>CI 86</td>
<td>T</td>
<td>Comment Status</td>
<td>D</td>
<td>The footnote appears to be left from an earlier time when the numbers were different. The difference between Min OMA and OMA - TDP min is now only 0.7dB</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td>Dudek, Michael</td>
<td>QLogic Corporation</td>
</tr>
<tr>
<td>CI 87</td>
<td>ER</td>
<td>Comment Status</td>
<td>D</td>
<td>It is strange to call the reference loss by a name including max</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td>Dudek, Michael</td>
<td>QLogic Corporation</td>
</tr>
<tr>
<td>CI 87</td>
<td>TR</td>
<td>Comment Status</td>
<td>D</td>
<td>The hit ratio for the eye mask is not defined.</td>
<td>Proposed Response</td>
<td>Response Status</td>
<td>O</td>
<td>Dudek, Michael</td>
<td>QLogic Corporation</td>
</tr>
</tbody>
</table>
Cl 87 SC 87.7.2 P 315 L 43 # 843
Dudek, Michael QLogic Corporation

Comment Type TR Comment Status D
Stressed Eye Jitter used in this clause appears to be the same as J2 used in clause 86. J2 is a more descriptive name.

Suggested Remedy
Change Stressed eye jitter to J2 throughout this clause.

Proposed Response Response Status O
[Editor's note: This comment is against 87.7.2, hence updated the subclause number field accordingly]

Cl 88 SC 88.5.4 P 341 L 46 # 846
Dudek, Michael QLogic Corporation

Comment Type T Comment Status D
There is no reference to the signal detect requirements

Suggested Remedy
Insert at the end of the first sentence. "that meet the requirements of table 88-4"

Proposed Response Response Status O
[Editor's note: This comment is against 88.5.4, hence updated the subclause number field accordingly]

Cl 87 SC 87.8.7 P 319 L 33 # 844
Dudek, Michael QLogic Corporation

Comment Type E Comment Status D
Two "tables"

Suggested Remedy delete one

Proposed Response Response Status O
[Editor's note: This comment is against 87.8.7, hence updated the subclause number field accordingly]

Cl 88 SC 88.8.5.2 P 349 L 30 # 847
Dudek, Michael QLogic Corporation

Comment Type TR Comment Status D
DGD is an important channel characteristic for longer fibers and the test channel DGD is not specified thereby potentially leading to varying test results.

Suggested Remedy
Add an extra column to table 88-12. DGD(max). Value to be 8ps for both lengths.

Proposed Response Response Status O
[Editor's note: This comment is against 88.8.5.2, hence updated the subclause number field accordingly]

Cl 83A SC 83A.3.3.1 P 380 L 25 # 848
Dudek, Michael QLogic Corporation

Comment Type TR Comment Status D
This is actually in 83A. "x is max rise/fall time in ps" is not explicit. (I don't know what it means!!)

Suggested Remedy
With one potential meaning change to "x is the rise or fall time in ps whichever is larger"

Proposed Response Response Status O
[Editor's note: This comment is against 83A.3.3.1, hence corrected clause/subclause number fields to 83A]
Comment ID # 849
Dudek, Michael QLogic Corporation

Comment Type T Comment Status D
This is actually 83A Ac common mode voltage and input rise and fall times are not characteristics of the receiver they are properties of the signal that the receiver must tolerate.

Suggested Remedy
Add "tolerance" to the parameters AC common mode voltage and input rise and fall time.

Proposed Response Response Status O
[Editor's note: This comment is against 83A.3.4, hence corrected clause/subclause number fields to 83A]

Comment ID # 850
Dudek, Michael QLogic Corporation

Comment Type E Comment Status D
This is actually 83A . Poor English

Suggested Remedy
Change "an Xlaui" to "a Xlaui"

Proposed Response Response Status O
[Editor's note: This comment is against 83A.4, hence corrected clause/subclause number fields to 83A]

Comment ID # 851
Dudek, Michael QLogic Corporation

Comment Type TR Comment Status D
This is actually 83B. The HCB now has a reference loss. It shouldn't say "Up to" for the HCB PCB

Suggested Remedy
Delete "Up to" for the HCB PCB.

Proposed Response Response Status O
[Editor's note: This comment is against 83B.2, hence corrected clause/subclause number fields to 83B]

Comment ID # 852
Dudek, Michael QLogic Corporation

Comment Type TR Comment Status D
This is actually in 83B. The MCB now has a reference loss. It shouldn't say "Up to" for the MCB PCB

Suggested Remedy
Delete "Up to" for the MCB PCB.

Proposed Response Response Status O
[Editor's note: This comment is against 83B.2, hence corrected clause/subclause number fields to 83B]

Comment ID # 853
Dudek, Michael QLogic Corporation

Comment Type TR Comment Status D
This is actually in 83B. "x is max rise/fall time in ps" is not explicit. (I don't know what it means!!)

Suggested Remedy
With one potential meaning change to "x is the rise or fall time in ps whichever is larger"

Proposed Response Response Status O
[Editor's note: This comment is against 83B.2.1, hence corrected clause/subclause number fields to 83B]
Proposed Response

#855
Cl 83B SC 83B.2.3 P 404 L 13 # 855
Dudek, Michael QLogic Corporation

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

This is actually in 83B. The figure doesn't show the correct eye mask and doesn't give the co-ordinates to be used.

**Suggested Remedy**: Replace "defined in figure 83A-9" with "illustrated in figure 83A-8 with the values for X1, X2, Y1 and Y2 given in Table 83B-3".

**Proposed Response**

**Response Status**: O

[Editor's note: This comment is against 83B.2.3, hence corrected clause/subclause number fields to 83B]

#856
Cl 85A SC 85A.2 P 415 L 40 # 856
Dudek, Michael QLogic Corporation

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

This is actually 85A. Clarification of the Jitter parameter test method would be helpful here.

**Suggested Remedy**: Add footnote c to the "max output jitter" row. Footnote c to say "Jitter is measured with emphasis off".

**Proposed Response**

**Response Status**: O

[Editor's note: This comment is against 85A.2, hence corrected clause/subclause number fields to 85A]

#857
Cl 85A SC 85A.4 P 416 L 35 # 857
Dudek, Michael QLogic Corporation

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

This is actually 85A. It would be less confusing if the sentence at line 15 were added at the end of the paragraph at line 5.

**Suggested Remedy**: Move the sentence.

**Proposed Response**

**Response Status**: O

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

#858
Cl 85A SC 85A.4 P 416 L 44 # 858
Dudek, Michael QLogic Corporation

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

This is actually 85A. ILpcb is not the maximum.

**Suggested Remedy**: Delete "maximum". Add a row that defines ILpcbmax.

**Proposed Response**

**Response Status**: O

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

#859
Cl 85A SC 85A.4 P 417 L 5 # 859
Dudek, Michael QLogic Corporation

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

This is actually 85A. It would be less confusing if the sentence at line 15 were added at the end of the paragraph at line 5.

**Suggested Remedy**: Move the sentence.

**Proposed Response**

**Response Status**: O

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

#860
Cl 85A SC 85A.4 P 417 L 13 # 860
Dudek, Michael QLogic Corporation

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

This is actually 85A. ILpcb is not the minimum.

**Suggested Remedy**: Change ILpcb to ILpcbmin.

**Proposed Response**

**Response Status**: O

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]
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: Comment ID

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**Comment 861**

Comment Type: T  Comment Status: D

This is actually 85A ILca is not the maximum

Suggested Remedy

Delete "maximum". Also delete the row on line 48 as this quantity is already defined here.

Proposed Response

Response Status: O

[Editor's note: This comment is against 85A.5, hence corrected clause/subclause number fields to 85A]

**Comment 862**

Comment Type: TR  Comment Status: D

This is actually 85A. This doesn't make sense. Where does the 0.2*max cable assembly loss come from? Why is the maximum host loss being used in an equation defining the minimum channel loss?

Suggested Remedy

Add a normative minimum cable loss requirement to table 85-9 and change the title to "Cable assembly insertion loss characteristics. Add one row. Minimum insertion loss at 5.156... 3.0dB. Then use this minimum insertion loss and the minimum host loss (instead of max) in the equation.

Proposed Response

Response Status: O

[Editor's note: This comment is against 85A.5, hence corrected clause/subclause number fields to 85A]

**Comment 863**

Comment Type: T  Comment Status: D

This is actually 85A. The wording is strange. "Determined using equation" sounds like a mathematical certitude.

Suggested Remedy

Replace "is determined using equation". With "is recommended to meet equation".

Proposed Response

Response Status: O

[Editor's note: This comment is against 85A.6, hence corrected clause/subclause number fields to 85A]

---

**Comment 865**

Comment Type: TR  Comment Status: D

This is actually 86A. The parameter name doesn't match the spec. The receiver does not have to tolerate an incoming signal BER of 1e-12.

Suggested Remedy

Change the parameter name to Bit Error Rate each lane.

Proposed Response

Response Status: O

[Editor's note: This comment is against 86A.4.2, hence corrected clause/subclause number fields to 86A]

**Comment 866**

Comment Type: T  Comment Status: D

This is actually 86A. The jitter values are now in a signal description section. They are no longer "tolerance"

Suggested Remedy

Delete "tolerance" 3 places.

Proposed Response

Response Status: O

[Editor's note: This comment is against 86A.4.2, hence corrected clause/subclause number fields to 86A]
**Comment ID # 867**

**Proposed Response**

This is actually 86A. The section on the set-up of the test (86A.5.3.8.5) refers to this table for the rise/fall times and amplitudes of the calibration crosstalk signal.

**Suggested Remedy**

Add rows to the end of this table. Crosstalk calibration signal amplitude TP1 700mV.
Crosstalk calibration signal transition times(20-80) TP1 34ps.

**[Editor's note: This comment is against 86A.4.2, hence corrected clause/subclause number fields to 86A]**

**Comment ID # 868**

**Proposed Response**

This is actually 86A. In context where this is following immediately after the loss equation for the Host PCB, connector and HCB it would clarify the statement to add "or HCB after "without connector"

**Suggested Remedy**

do as in comment.

**Comment ID # 869**

**Proposed Response**

Testing with a short cable rather than the intermediate cable used in test 1 is likely to be more stressful.

**Suggested Remedy**

Replace the Test 1 values for a1, a2, and a4 with 1.2, 0.021,0.02 and change the calibrated far end crosstalk for test 1 to 10mV (value comes from 85-33) Also (similar to another comment) add a minimum cable attenuation of 3dB at Nyquist to table 85-9.

**[Editor's note: This comment is against 85.8.4.2, hence updated the subclause number field accordingly]**
In Table 86-8 the values of J2 and J9 have been found difficult to simultaneously meet as called for in 86.8.4.7. This appears due to the lengthy DDJ distribution tails that occurs with a PRBS31 or similarly long-run-length, richly-structured test patterns after passing through a VCSEL and inducing VECP. In these cases a significant portion of the peak-to-peak DDJ in the signal is not included in J2 but is included in J9. This was not fully appreciated when the existing J2 and J9 values were proposed for the SRS condition. The J2 and J9 values for the SRS test should be changed to reflect actual operating conditions as well as being more readily implemented. The existing J2 and J9 values are based on a dual-Dirac - Gaussian combination where peak-to-peak DJ equals dual-Dirac DJ of 0.274 UI, RJ(@1E-12) = 0.229 UI and TJ(@1E-12) = 0.498 UI. The proposed new values are based on an approximate binominal - Gaussian combination where peak-to-peak DJ ~ 0.330 UI, RJ(@1E-12) ~ 0.225 UI and TJ(@1E-12) ~ 0.502 UI.

Suggested Remedy
In Table 86-8, change the value of J2 from 0.35 to 0.3.

Proposed Response
Response Status O

The existing eye diagram definition does not mention the other signal lanes and measurements may be made neglecting these sources of potential crosstalk. There's a similar lack of mention of activating potential crosstalk sources in 86A.5.3.6. Fortunately 86A.5.3.6 refers to 86.8.3.2 and an appropriate remedy for 86.8.3.2 will carry over to 86A.5.3.

Suggested Remedy
Insert at the end of the first paragraph in 86.8.3.2, "Whether electrical or optical eye diagrams, all co-propagating and counter-propagating signal lanes in the channel are active as crosstalk sources, using one of patterns 3, 5, or valid 40GBASE-R or 100GBASE-R signals. The input lanes of the item under test are receiving signals that are asynchronous to those being output."

Proposed Response
Response Status O

The existing jitter definitions for J2 and J9 do not mention the other signal lanes and measurements may be made neglecting these sources of potential crosstalk.

Suggested Remedy
For J2 and J9, insert into 86.8.3.3, "All co-propagating and counter-propagating signal lanes in the channel are active as crosstalk sources, using one of patterns 3, 5, or valid 40GBASE-R or 100GBASE-R signals. The input lanes of the item under test are receiving signals that are asynchronous to those being output."

Proposed Response
Response Status O

In item d), a reference receiver bandwidth of 6.1 GHz provides a better match (than 6.2 GHz) of the total link penalties between the test case and the worst case link at max reach.

Suggested Remedy
In item d), change the reference receiver bandwidth from 6.2 GHz to 6.1 GHz.

Proposed Response
Response Status O
Comment ID # 878

Cl 86 SC 86.8.4.7 P 295 L 27 # 878
Pettrilla, John Avago Technologies

Comment Type TR Comment Status D
Item f) belongs in 86.8.4.8

Suggested Remedy
Move item f) from 86.8.4.7 to 86.8.4.8.

Proposed Response Response Status O

Comment ID # 879

Cl 83A SC 83A.3.4.4 P 385 L 39 # 879
Pettrilla, John Avago Technologies

Comment Type E Comment Status D
The last line of the paragraph, "f is the frequency in GHz." is redundant with the first line of the paragraph and can be deleted.

Suggested Remedy
Delete the last line of the paragraph, "f is the frequency in GHz".

Proposed Response Response Status O

Comment ID # 880

Cl 83A SC 83A.3.4.5 P 386 L 28 # 880
Pettrilla, John Avago Technologies

Comment Type T Comment Status D
The declaration that 'AC-coupling is part of the receiver' can lead to AC-coupling means included on both ends of the XLAUI/CAUI link when an 83A receiver is connected to an 83B module since 83B.2.1 requires AC-coupling in modules for both Tx and Rx paths. AC-coupling on both ends of the link seems to have little utility and may likely degrade signal performance. The solution to this problem is better addressed in 83A than 83B since the host designer knows which 83A interfaces are not connected to 83B modules.

Suggested Remedy
Change "AC-coupling is considered to be part of the receiver for the purposes of this specification unless explicitly stated otherwise." to "AC-coupling is considered part of the receiver for the purposes of this specification except when interfacing with modules defined in 83B or explicitly stated otherwise."

Proposed Response Response Status O

Comment ID # 881

Cl 83A SC 83A.5.1 P 389 L 16 # 881
Pettrilla, John Avago Technologies

Comment Type ER Comment Status D
The last sentence of the paragraph, "All XLAUI/CAUI channels shall be active during transmit jitter testing to ensure any channel-channel crosstalk is included in the jitter evaluation." uses the word 'channel' where the word 'lane' would seem a better choice.

Suggested Remedy
Change "All XLAUI/CAUI channels shall be active during transmit jitter testing to ensure any channel-channel crosstalk is included in the jitter evaluation." to "All XLAUI/CAUI lanes shall be active during transmit jitter testing to ensure any lane-lane crosstalk is included in the jitter evaluation."

Proposed Response Response Status O

Comment ID # 882

Cl 83A SC 83A.5.2 P 389 L 29 # 882
Pettrilla, John Avago Technologies

Comment Type ER Comment Status D
There should not be any inferences that test setups and block diagrams are compulsory.

Suggested Remedy
Change "Figure 83A--15 depicts the XLAUI/CAUI Jitter Tolerance test setup." to "Figure 83A--15 depicts a XLAUI/CAUI Jitter Tolerance test setup."

Proposed Response Response Status O

Comment ID # 883

Cl 83B SC 83B.2.1 P 402 L 1 # 883
Pettrilla, John Avago Technologies

Comment Type E Comment Status D
Please try to pull note c into page 401.

Suggested Remedy
Please try to pull note c into page 401.

Proposed Response Response Status O
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Pettrilla, John</th>
<th>Avago Technologies</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>884</td>
<td></td>
<td></td>
<td>TR</td>
<td>The requirement, &quot;shall be conducted with a stressed input signal which is comprised of at least 0.25 UI peak-to-peak deterministic jitter&quot; is open-ended for stress and, as found with a similar statement in clause 52, very problematic. Experience with clause 52 stressed source definition has led to more careful definitions, e.g. SFF-8431 where target values are specified, Table 86-5 where values are used, or Table 86A-4 where specification values are used.</td>
</tr>
<tr>
<td>885</td>
<td></td>
<td></td>
<td>ER</td>
<td>There should not be any inferences that test setups and block diagrams are compulsory.</td>
</tr>
<tr>
<td>886</td>
<td></td>
<td></td>
<td>TR</td>
<td>The values of J2 and J9 are not well-aligned with the currently proposed TP4 output TJ(BER=1E-12) = 0.70 UI target. It also appears that lengthy DDJ distribution tails occur with a PRBS31 or similarly long-run-length, richly-structured test patterns after passing through a VCSEL and inducing VECG. In these cases a significant portion of the peak-to-peak DDJ in the signal is not included in J2 but is included in J9. This was not fully appreciated when the existing J2 and J9 values were proposed for TP4. Further, there's interest in adjusting nPPI requirements to accommodate 40GBASE-LR4 in small footprint form factors. The J2 and J9 values for TP4 should be changed to reflect expected jitter distributions and reasonably accommodate LR4. The existing J2 and J9 values are based on a dual-Dirac - Gaussian combination where peak-to-peak DJ equals dual-Dirac DJ of 0.328 UI, RJ(1E-12) = 0.332 UI and TJ(1E-12) = 0.661 UI. The proposed new values are based on an approximate binomial - Gaussian combination where peak-to-peak DJ = 0.362 UI, RJ(1E-12) = 0.332 UI and TJ(1E-12) = 0.694 UI. This also applies to J2 and J9 jitter tolerance requirements in Table 86A-4.</td>
</tr>
<tr>
<td>887</td>
<td></td>
<td></td>
<td>ER</td>
<td>Table 86A-4 declares a DDPWS tolerance for the host input. Unfortunately, DDPWS is only defined for PRBS9 which appears to have little relevance to the actual signal seen at this interface. Since this requirement appears to provide little utility and will likely add burden to the implementer, it should be dropped.</td>
</tr>
</tbody>
</table>
Comment Type: T  Comment Status: D
The definition for transition time measurements calls for observation through a 12 GHz low pass filter. To ease the burden on implementers, this requirement should be harmonized with that in 83A.5. "The signal waveform, eye, and jitter may be measured using a receiver with an equivalent minimum -3dB bandwidth of at least 18 GHz." This also applies to 86A.5.3.4, 86A.5.3.5 and 86A.5.3.6.

Suggested Remedy
Change from, "the waveform is observed through a 12 GHz low pass filter response." to "the waveform is observed using a receiver with an equivalent minimum -3dB bandwidth of at least 18 GHz." Repeat in 86A.5.3.4, 86A.5.3.5 and 86A.5.3.6.

Proposed Response  Response Status: O

Comment Type: T  Comment Status: D
The specification for 40GBASE-SR4 should be updated to align with any required change in 40GBASE-LR4 such that a common host implementation can be made.

Suggested Remedy
Change 31B.4.3 last row of table as follows:
*MIIc At operating speeds (strike through: above 100 Mb/s) of 1000 Mb/s
31B.4.3 Insert the following two rows to the end of table:
{Item} *MIId (Feature) At operating speeds of 10 Gb/s with PHY types other than 10GBASE-T (Subclause) 31B.3.7 (Status) Optional
{Item} *MIIe (Feature) At operating speeds of 10 Gb/s with PHY types of 10GBASE-T (Subclause) 31B.3.7 (Status) Optional

Proposed Response  Response Status: O

Comment Type: E  Comment Status: D
For better clarity Change "one per lane" to one per PCS lane" to be consistent with description in other places

Suggested Remedy
Change "one per lane" to one per PCS lane*

Proposed Response  Response Status: O
IEEE P802.3ba D3.0 40Gb/s and 100Gb/s Ethernet comments

Comment Type: T  Comment Status: D
Ganga, Ilango  Intel Corporation

Make the description of delay constraints for 40Gb/s, 100Gb/s consistent with definition in other 40/100G clauses (for e.g. see 82.5). Also add reference to definition in 80.4.

Suggested Remedy
Change sentence to read as follows: "The maximum delay contributed by the 40GBASE-R FEC (sum of transmit and receive delays at one end of the link) shall be no more than 24576 BT (or 48 pause quanta or 614.4 ns)". Change sentence to read as follows: "The maximum delay contributed by the 100GBASE-R FEC (sum of transmit and receive delays at one end of the link) shall be no more than 122880 BT (or 240 pause quanta or 1228.8 ns). Also add the following sentence to end of this subclause: A description of overall system delay constraints and the definitions for bit-times and pause_quantum can be found in 80.4 and its references. Make similar change to 10Gb/s as well to be consistent with the 40 and 100G text. Also the first paragraph of 74.6 could be deleted.

Proposed Response  Response Status: O

Comment Type: T  Comment Status: D
Ganga, Ilango  Intel Corporation

The Reverse gear box function is applicable to both PCS to FEC interface and the PMA to FEC interface when FEC is implemented in a PHY chip, so update the description accordingly.

Suggested Remedy
Change sentence to read as follows: "...and the 1-bit wide lane of the 40GBASE-R or 100GBASE-R PCS to FEC interface (or PMA to FEC interface) when FEC is implemented in a PHY chip, so update the description accordingly.

Proposed Response  Response Status: O

Comment Type: ER  Comment Status: D
PICS FE3 for Reverse gear box function needs to be updated to include option for 40Gb/s and 100Gb/s. The current option is for physical instantiation with XSBI option

Suggested Remedy
Insert new PICS FE3a for 40Gb/s and 100Gb/s options

Proposed Response  Response Status: O
Check and update the subclause numbering style for new subclauses inserted by 802.3ba, as appropriate, if applicable to this amendment. Especially the new subclauses inserted by 802.3ba: Clauses 45, 73, 74 etc.,

Suggested Remedy:
Update the numbering style for inserted subclauses if applicable to 802.3ba

Proposed Response: Response Status O

Check for style regarding the use of notes NOTE1 and NOTE2 embedded in the layer diagram figures, for example Figures 80-1 through 80-5 and 82-1, 83-1 etc.,

Suggested Remedy:
Update the notes embedded in the figures (if applicable) as per IEEE style requirements.

Proposed Response: Response Status O

The control function variables used in table 84-3 need to be defined in the corresponding subclause in Clause 84. The control function description in 84.7.12 refers to control function in Clause 72. However Clause 72 is applicable to single lane. So description to be added to 84.7.12 to state that the corresponding variables defined for single lane is enumerated to multiple lanes. For example rx_trained variable is enumerated to rx_trained_0 through rx_trained_3. Variable names with proper enumeration to be defined in Clause 80 so this can be mapped to registers in Clause 45.

Suggested Remedy:
Provide description of variables in appropriate subclause(s) in Clause 84.

Proposed Response: Response Status O

Check for style regarding the use of notes embedded in the tables, for example Tables 80-3 through 80-5.

Suggested Remedy:
Update the column notes in Tables (if applicable) as per IEEE style requirements.

Proposed Response: Response Status O

Check and update the subclause numbering style for new subclauses inserted by 802.3ba, as appropriate, if applicable to this amendment. Especially the new subclauses inserted by 802.3ba: Clauses 45, 73, 74 etc.,

Suggested Remedy:
Update the numbering style for inserted subclauses if applicable to 802.3ba

Proposed Response: Response Status O

Check for style regarding the use of notes NOTE1 and NOTE2 embedded in the layer diagram figures, for example Figures 80-1 through 80-5 and 82-1, 83-1 etc.,

Suggested Remedy:
Update the notes embedded in the figures (if applicable) as per IEEE style requirements.

Proposed Response: Response Status O