

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI **FM** SC **FM** P1 L1 # 18  
 Gardner, Andrew Linear Technology  
 Comment Type **E** Comment Status **D** Bucket  
 Remove change bars in the margins from clean version of the draft  
 SuggestedRemedy  
 see comment  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 The "clean" version has all text, figures, tables etc. as they would be for the published version without inserted or deleted text being shown using underline or strikethrough. Leaving the change bars in this version is deliberate since it is helpful in showing the location of changes but does not disrupt the text, figures or tables of the draft.

CI **FM** SC **FM** P4 L10 # 10  
 Smith, Daniel Seagate Technology  
 Comment Type **E** Comment Status **D** Bucket  
 spelling for 'arabic', throughout the Editor's note.  
 SuggestedRemedy  
 s/b: "Arabic" with a capital 'A'  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "arabic" to "Arabic" on line 9 and line 10.  
 [Editor's note: Clause and Subclause "front matter" changed to "FM"]

CI **FM** SC **FM** P8 L13 # 190  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type **E** Comment Status **D** Bucket  
 "200 Gb/s" is missing in Task Force name on line 13 through 19.  
 SuggestedRemedy  
 Insert "200 Gb/s and" after "P802.3bs" on line 13 through 19.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change:  
 "P802.3bs 400 Gb/s Ethernet" to:  
 "P802.3bs 200 Gb/s and 400 Gb/s Ethernet"  
 in 7 places on page 8.

CI **FM** SC **FM** P8 L19 # 560  
 Law, David HPE  
 Comment Type **E** Comment Status **D** Bucket  
 Please add Working Group voter list supplied in IEEE\_P802d3bs\_WG\_names\_DL\_240816.fm  
 SuggestedRemedy  
 See comment.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add the suggested list with the exception of "John D'Ambrosia" who is already listed as the Task Force Chair.  
 [Editor's note: Attachment is law\_3bs\_01\_0916.pdf in http://www.ieee802.org/3/bs/comments/P802d3bs\_D2p0\_attachments.zip]

CI **FM** SC **FM** P13 L8 # 1  
 Hajduczenia, Marek Charter Communicatio  
 Comment Type **E** Comment Status **D** Bucket  
 "IEEE Std 802.3bsT-201x" is not marked as Amendment 8  
 SuggestedRemedy  
 Add "Amendment 8-" ahead of "This amendment includes changes to IEEE Std 802.3-2015 and adds Clause 116 through Clause 124" statement  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The Working Group Chair has not announced the assumed order for amendments above Amendment 9. Text for Amendment 8 (IEEE Std 802.3bu-201x) will be added, but the assumed amendment number for IEEE Std 802.3bs-201x will not be added until it is announced by the Working Group Chair.  
 See also response to comment #50

CI **FM** SC **FM** P13 L8 # 2  
 Hajduczenia, Marek Charter Communicatio  
 Comment Type **E** Comment Status **D** Bucket  
 There is no IEEE Std 802.3bvT-201x  
 SuggestedRemedy  
 Please add text for "IEEE Std 802.3bvT-201x" as Amendment 9  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Now that the Working Group Chair has announced the assumed order of amendments up to Amendment 9, text for Amendment 8 (IEEE Std 802.3bu-201x) and Amendment 9 (IEEE Std 802.3bv-201x) will be added. See response to comment #50.

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Cl **FM** SC **FM** P **13** L **12** # **19**  
 Gardner, Andrew Linear Technology  
 Comment Type **E** Comment Status **D** Bucket  
 Since it seems likely that IEEE P802.3bu will be published before IEEE P802.3bs add it to the list of prior amendments.  
 SuggestedRemedy  
 see comment  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment #50

Cl **00** SC **0** P L # **64**  
 Anslow, Pete Ciena  
 Comment Type **E** Comment Status **D** Bucket  
 Now that the publication order for P802.3bu and P802.3bv has been decided, account for any changes to the base standard made by these two additional amendments.  
 SuggestedRemedy  
 Account for any changes to the base standard made by P802.3bu and P802.3bv as well as updates to any of the earlier amendments.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment #50

Cl **00** SC **0** P **1** L **2** # **50**  
 Zimmerman, George CME Consulting, Inc./  
 Comment Type **ER** Comment Status **D** Bucket  
 It is likely that 802.3bu and 802.3bv, both currently in sponsor ballot will be completed prior to this standard, which has just entered working group ballot. This effects the introduction, the header and may affect updates elsewhere in the draft (unclear without substantial cross-checking).  
 SuggestedRemedy  
 Consult 802.3 leadership to estimate order of publication. Change header to add "as amended by <list of amendments to be provided by staff prior to publication>", change line 28, to include IEEE Std 802.3bu-201x and IEEE Std 802.3bv-201x. Add 802.3bu and 802.3bv summaries after 802.3bz on page 13, and before 802.3bs, as well as any other amendments deemed likely to precede 802.3bs. Update table 45-3 (P41) and editing instruction to align with 802.3bv (bit 1.22 is no longer reserved), and editor to check and update draft to align with 802.3bv and 802.3bu and any other preceding standards indicated by leadership.

Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Now that the Working Group Chair has announced the assumed order of amendments up to Amendment 9, make the following changes:  
 On page 1, line 2 change:  
 "(Amendment of IEEE Std 802.3T-2015)" to:  
 "(Amendment of IEEE Std 802.3T-2015 as amended by [list to be populated during publication process])"  
 On page 1, line 27 add IEEE Std 802.3bu-201x and IEEE Std 802.3bv-201x to the list of amendments.  
 On page 13, add summary text for amendments 8 and 9 after that for Amendment 7.  
 Account for any changes to the base standard made by P802.3bu and P802.3bv as well as updates to any of the earlier amendments.  
 As the Working Group Chair announces the assumed order for further amendments ahead of the P802.3bs draft add these to the list and account for any changes they make to the base standard.

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Cl 00 SC 0 P1 L2 # 174  
Grow, Robert RMG Consulting

Comment Type E Comment Status D Bucket

In publication, this is where the list of amendments and corrigenda comprising the base document being amended is listed. (See IEEE Std 802.3bv page two or title page of P802.3bv/D3.0 for example.)

Based on current schedules, P802.3bs, could be be designated Amendment 10, 11 or 12. Questioning the schedule for P802.3cc when it is only at D1.0 argues against Amendment 12; and 802.3cb at the same ballot makes 10 or 11 a tossup, to the list certainly can be TBD. But, in addition, Corrigendum 1 will almost certainly be approved before this project is approved.

The SASB teleconference is 22 Sept, so if P802.3bs/D2.1 is not distributed before knowing the results, 802.3bn and 802.3bz might appropriately be 2016.

*SuggestedRemedy*

Could edit as in P802.3bv/D3.0 or indicate to be updated during publication preparation. If the list is added, delete the list at line 25.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
See response to comment #50

Cl 00 SC 0 P2 L46 # 175  
Grow, Robert RMG Consulting

Comment Type E Comment Status D Bucket

Draft uses both 201x and 20xx for yet to be approved standards and other year dates. While this project is unlikely to be subject to the uncertainty of the next decade, other projects getting started now face that possible uncertainty.

*SuggestedRemedy*

Use one form to simplify search by publication editor. I recommend 20xx as is used in IEEE boilerplate.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Change "20xx" to "201x" on Page 2, line 46 and Page 11, line 29.

Cl 00 SC 0 P8 L22 # 176  
Grow, Robert RMG Consulting

Comment Type E Comment Status D Bucket

The WG ballot group is now known. It is thoughtful to allow members to review the appearance of their names in case there is any error in the database.

*SuggestedRemedy*

Add list that the WG Chair can provide, (he will probably remind you not to duplicate officer names in the added list).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
See response to comment #560.

Cl 00 SC 0 P13 L6 # 177  
Grow, Robert RMG Consulting

Comment Type E Comment Status D Bucket

Update with current document descriptions.

*SuggestedRemedy*

I personally prefer adding the document list with draft numbers that were used when creating the draft in an Editor's note above this list as this is the first location where base text is drawn from preceding amendments and corrigenda. The Editor's note list on p. 32 does not provide good information for this purpose.

From my most recent review updates to the list are appropriate:

- p. 12, l. 42 hopefully publication editors will correct the grammar, other projects have deleted "for" to do that in their drafts;
- p. 13, l. 8 add Amendment 8 802.3bu and Amendment 9 802.3bv. Also consider adding Corrigendum 1 as it is likely to precede approval of this project.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
See response to comment #50  
On page 12, line 42, this is the text as per P802.3br D3.1. If the published version is different from this, then it will be updated. Making any change to the text prior to publication of IEEE Std 802.3br-2016 would be incorrect.

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Cl 00 SC 0 P 32 L 46 # 178  
 Grow, Robert RMG Consulting

Comment Type E Comment Status D Bucket

P802.3bp should no be longer running in parallel after September, also, it is not terribly helpful in knowing which doements the editors have considered in preparation of the draft.

*SuggestedRemedy*

Delete the editor's note, or add the list of considered published, approved and in ballot drafts.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The current text will not be incorrect when the P802.3bp project is terminated as the two projects did run in parallel. The purpose of the note is not to provide a list of documents that has been considered in preperation of the draft, it is to explain the format of the editing instructions.

Change:

"(e.g., IEEE P802.3bn and IEEE P802.3bp)" to:

"(e.g., IEEE P802.3bn and IEEE P802.3bv)"

Cl 00 SC 0 P 73 L 22 # 45  
 Ran, Adee Intel

Comment Type E Comment Status D Bucket

The term RS-FEC appears here (corrected and uncorrected codeword counters), but the subclause titles use "PCS FEC". "PCS FEC" also appears (as a distinct term from RS-FEC) in 30.5.1.1.17 and 30.5.1.1.18 which refer to these counters.

If "PCS FEC" is the chosen term it should be used consistently.

This applies to:

45.2.3.47e, P73 L21

45.2.3.47f, P73 L42

119.1.2, P141 L26

119A, P315 L11 and L28

120B.3.2, P332 L15

120D.3.2, P351 L21 and L22

120D.3.2.2, P352 L7, L21, L29

*SuggestedRemedy*

Change "RS-FEC" to "PCS FEC" in the listed places.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "RS-FEC" to "PCS FEC" in the following places:

45.2.3.47e, page 73 line 22

45.2.3.47f, page 73 line 42

119.1.2, page 141 line 26

119A, page 315 lines 11 and 28

120B.3.2, page 332 line 15

120D.3.2.1, page 351 lines 22 and 23

120D.3.2.2, page 352 lines 7, 21, and 29

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Cl 1 SC 1.1.3.2 P 33 L 22 # 537  
 Bouda, Martin Fujitsu

Comment Type E Comment Status D Bucket

"Two widths of (...) eighth-lane version (.) four-lane version" could be made easier to read by replacing either the word "width" by "type", or words "type" by "width"

SuggestedRemedy

In the sentence replace the two instances of "version" by "width".

Proposed Response Response Status W

PROPOSED REJECT.

This text follows the text in 1.1.3.2, item m:

"Two widths of CAUI-n are defined: a ten-lane version (CAUI-10) in Annex 83A and Annex 83B, and a four-lane version (CAUI-4) in Annex 83D and Annex 83E."

The suggested replacement text:

"Two widths of 200GAUI-n are defined: an eight-lane width (200GAUI-8) in Annex 120B and Annex 120C, and a four-lane width (200GAUI-4) in Annex 120D and Annex 120E." is not enough of an improvement to justify making this text different from the 100G definition.

Cl 1 SC 1.1.3.2 P 33 L 35 # 538  
 Bouda, Martin Fujitsu

Comment Type E Comment Status D Bucket

"Two widths of (...) sixteen-lane version (.) eight-lane version" could be made easier to read by replacing either the word "width" by "type", or words "type" by "width"

SuggestedRemedy

In the sentence replace the two instances of "version" by "width".

Proposed Response Response Status W

PROPOSED REJECT.

See response to comment #537

Cl 1 SC 1.3 P 33 L 44 # 179  
 Grow, Robert RMG Consulting

Comment Type E Comment Status D Bucket

Though unlikely with these two inserted references, they should be in alphanumeric order to minimize publication editor error in inserting.

SuggestedRemedy

Correct order.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Swap the order of the two inserted references.

Cl 1 SC 1.4 P 34 L 3 # 180  
 Grow, Robert RMG Consulting

Comment Type ER Comment Status D Bucket

The inserts as specified make worse the sort order mess that is currently the state of 1.4. 40GBASE terms in 2015 did not follow either the speed ordered port type list at the beginning of 1.4, nor insert after 2BASE-TL for at least the first digit being in sort order. 25GBASE terms were inserted by P802.3by before 40GBASE terms so at least the first digit of the port types somewhat sort. The insert order also violates the groupings of the current 1.4 by not inserting the interface terms together.

SuggestedRemedy

Either try to better group using existing groups (after 25G/40G with interfaces separately grouped, or at a minimum order the inserts of P802.3bs in proper letter by letter sort order (.0123456789abcdefghijklmnopqustuvwxyz) ignoring spaces and all other characters.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Re-order the new definitions being inserted by the p802.3bs draft after 1.4.72a 40GBASE-T according to the letter by letter sort order (.0123456789abcdefghijklmnopqustuvwxyz) ignoring spaces and all other characters. This results in:

- 1.4.72b 200GBASE-DR4
- 1.4.72c 200GBASE-FR4
- 1.4.72d 200GBASE-LR4
- 1.4.72e 200GBASE-R
- 1.4.72f 200 Gb/s Attachment Unit Interface (200GAUI-n)
- 1.4.72g 200 Gb/s Media Independent Interface (200GMII)
- 1.4.72h 200GMII Extender
- 1.4.72i 200GXS
- 1.4.72j 400GBASE-DR4
- 1.4.72k 400GBASE-FR8
- 1.4.72l 400GBASE-LR8
- 1.4.72m 400GBASE-R
- 1.4.72n 400GBASE-SR16
- 1.4.72o 400 Gb/s Attachment Unit Interface (400GAUI-n)
- 1.4.72p 400 Gb/s Media Independent Interface (400GMII)
- 1.4.72q 400GMII Extender
- 1.4.72r 400GXS

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Cl 1 SC 1.4 P 35 L 12 # 145  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type ER Comment Status D

The basic definition is limited, and speaks only to what it is, rather than the complete function it serves - to extend the reach of the 200GMII and allow communication with 200G PHYs that use a different PCS.

SuggestedRemedy

Change the definition to  
 The 200 Gb/s Media Independent Interface Extender extends the reach of the 200GMII and consists of two 200GXS sublayers with a 200GAUI-n between them. It is defined as a mechanism for communication with future 200 Gigabit Ethernet PHYs that utilize a PCS sublayer other than that defined in Clause 119. (See IEEE Std 802.3, Clause 118.)

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 1 SC 1.4 P 35 L 18 # 147  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type ER Comment Status D

In the definition of the 200GMII Extender, it is noted that the 200GXS is for future 200G PHYs and is identical to the 200GBASE-R PCS. It is likely that the reader will find this definition confusing. As noted in other comment, the Extender allows communication with future 200G PHYs using a PCS different than the existing 200GBASE-R PCS. It is not intuitive to merely say that the functionality of the 200GXS is the same as the 200GBASE-R PCS. Essentially, the 200GBASE-R PCS can be configured through the appropriate registers as a 200GXS in order to implement the 200GMI Extender.

SuggestedRemedy

Modify the definitionThe 200 Gb/s Extender Sublayer (200GXS) is part of the 200GMII Extender. In functionality, it is identical to the 200GBASE-R PCS Sublayer defined in Clause 119. (See IEEE Std 802.3, Clause 118.), but must be configured as a 200GXS through optional management registers.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"Its functionality is identical to the 200GBASE-R PCS Sublayer defined in Clause 119. (See IEEE Std 802.3, Clause 118.)" to:

"In functionality, it is identical to the 200GBASE-R PCS Sublayer defined in Clause 119, but it is configured as a 200GXS through different optional management registers. (See IEEE Std 802.3, Clause 118.)"

Cl 1 SC 1.4 P 35 L 22 # 146  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type ER Comment Status D

The basic definition is limited, and speaks only to what it is, rather than the complete function it serves - to extend the reach of the 400GMII and allow communication with 400G PHYs that use a different PCS.

SuggestedRemedy

Change the definition to  
 The 400 Gb/s Media Independent Interface Extender extends the reach of the 400GMII and consists of two 400GXS sublayers with a 400GAUI-n between them. It is defined as a mechanism for future 400 Gigabit Ethernet PHYs that utilize a PCS sublayer other than that defined in Clause 119. (See IEEE Std 802.3, Clause 118.)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change the definition to:

"The 400 Gb/s Media Independent Interface Extender extends the reach of the 400GMII and consists of two 400GXS sublayers with a 400GAUI-n between them. It is defined as a mechanism for communication with future 400 Gigabit Ethernet PHYs that utilize a PCS sublayer other than that defined in Clause 119. (See IEEE Std 802.3, Clause 118.)"

Cl 1 SC 1.4 P 35 L 26 # 137  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type ER Comment Status D

In the definition of the 400GMII Extender, it is noted that the 400GXS is for future 400G PHYs and is identical to the 400GBASE-R PCS. It is likely that the reader will find this definition confusing. As noted in other comment, the Extender allows communication with future 400G PHYs using a PCS different than the existing 400GBASE-R PCS. It is not intuitive to merely say that the functionality of the 400GXS is the same as the 400GBASE-R PCS. Essentially, the 400GBASE-R PCS can be configured through the appropriate registers as a 400GXS in order to implement the 400GMI Extender.

SuggestedRemedy

Modify the definitionThe 400 Gb/s Extender Sublayer (400GXS) is part of the 400GMII Extender. In functionality, it is identical to the 400GBASE-R PCS Sublayer defined in Clause 119. (See IEEE Std 802.3, Clause 118.), but must be configured as a 400GXS through optional management registers.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"Its functionality is identical to the 400GBASE-R PCS Sublayer defined in Clause 119. (See IEEE Std 802.3, Clause 118.)" to:

"In functionality, it is identical to the 400GBASE-R PCS Sublayer defined in Clause 119, but it is configured as a 400GXS through different optional management registers. (See IEEE Std 802.3, Clause 118.)"

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Cl 1 SC 1.4.72b P34 L 8 # 539  
 Bouda, Martin Fujitsu  
 Comment Type E Comment Status D Bucket  
 "Two widths of (...) eighth-lane version (.) four-lane version" could be made easier to read by replacing either the word "width" by "type", or words "type" by "width"  
 SuggestedRemedy  
 In the sentence replace the two instances of "version" by "width".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This text follows the text in 1.4.81:  
 "Two widths of CAUI-n are defined: a ten-lane version (CAUI-10) and a four-lane version (CAUI-4)"  
 The suggested replacement text:  
 "Two widths of 200GAUI-n are defined: an eight-lane width (200GAUI-8), and a four-lane width (200GAUI-4)."  
 is not enough of an improvement to justify making this text different from the 100G definition.

Cl 1 SC 1.4.72i P34 L 33 # 540  
 Bouda, Martin Fujitsu  
 Comment Type E Comment Status D Bucket  
 "Two widths of (...) sixteen-lane version (.) eight-lane version" could be made easier to read by replacing either the word "width" by "type", or words "type" by "width"  
 SuggestedRemedy  
 In the sentence replace the two instances of "version" by "width".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See response to comment #539

Cl 1 SC 1.4.107 P35 L 5 # 181  
 Grow, Robert RMG Consulting  
 Comment Type ER Comment Status D Bucket  
 P802.3cb is also modifying this definition, if timelines hold true, this instruction and base text is wrong.  
 SuggestedRemedy  
 Add an Editor's note to remind that 802.3cb is also modifying this definition and base text and editing instruction reference will have to be updated if 802.3cb is assigned a lower amendment number than 802.3bs.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 1 SC 1.4.132a P35 L 11 # 182  
 Grow, Robert RMG Consulting  
 Comment Type ER Comment Status D Bucket  
 I can discern no logical reason for inserting these terms after 1.4.132.  
 SuggestedRemedy  
 Sort with other terms that begin with a number.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 In the San Diego meeting a global change was made:  
 "CCMII Extender" was changed to "200GMII Extender"  
 "CCXS" was changed to "200GXS"  
 "CDMII Extender" was changed to "400GMII Extender"  
 "CDXS" was changed to "400GXS"  
 without the position of these definitions being changed.  
 See response to comment #180

Cl 1 SC 1.4.132a P35 L 13 # 65  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D Bucket  
 Now that:  
 CCMII Extender has become 200GMII Extender  
 CCXS ahs become 200GXS  
 CDMII Extender has become 400GMII Extender  
 CDXS ahs become 400GXS  
 these definitions are not in the correct place in 1.4  
 SuggestedRemedy  
 Move these definitions to the appropriate place in 1.4  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment #180

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Cl 1 SC 1.4.325 P 35 L 35 # 541  
 Bouda, Martin Fujitsu  
 Comment Type E Comment Status D Bucket  
 "(.) PCS distributes encoded data to multiple logical lanes, these logical lanes are called PCS lanes." should be broken into two sentences, removing the comma.  
 SuggestedRemedy  
 "(.) PCS distributes encoded data to multiple logical lanes. These logical lanes are called PCS lanes."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This text is part of the base standard. No change has been made in the P802.3bs amendment that requires such a change to this definition.

Cl 1 SC 1.4.325 P 35 L 36 # 542  
 Bouda, Martin Fujitsu  
 Comment Type E Comment Status D Bucket  
 Moving the word together to just after the word carried would make the following sentence easier to read: "One or more PCS lanes can be multiplexed and carried on a physical lane together at the PMA service interface."  
 SuggestedRemedy  
 "One or more PCS lanes can be multiplexed and carried together on a physical lane at the PMA service interface."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This text is part of the base standard. No change has been made in the P802.3bs amendment that requires such a change to this definition.

Cl 1 SC 1.5 P 35 L 39 # 183  
 Grow, Robert RMG Consulting  
 Comment Type E Comment Status D Bucket  
 Sort order of 1.5 is alphanumeric (with only a few errors).  
 SuggestedRemedy  
 Correct editing instruction to alphanumeric.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change:  
 "in alphabetical order" to:  
 "in alphanumeric order"  
 In the editing instruction for 1.3 change:  
 "in alphanumerical order" to:  
 "in alphanumeric order"

Cl 30 SC 30.3.2.1.2 P 37 L 17 # 543  
 Bouda, Martin Fujitsu  
 Comment Type ER Comment Status D Bucket  
 Insert a comma to separate Clause number from bitrate in "Clause 119 200 Gb/s"  
 SuggestedRemedy  
 "Clause 119, 200 Gb/s"  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 These rows are being added to an existing list which does not include such commas. For example:  
 "Clause 82 100Gb/s multi-PCS lane using 2-level PAM"

Cl 30 SC 30.3.2.1.2 P 37 L 18 # 544  
 Bouda, Martin Fujitsu  
 Comment Type ER Comment Status D Bucket  
 Insert a comma to separate Clause number from bitrate in "Clause 119 400 Gb/s"  
 SuggestedRemedy  
 "Clause 119, 400 Gb/s"  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 These rows are being added to an existing list which does not include such commas. For example:  
 "Clause 82 100Gb/s multi-PCS lane using 2-level PAM"



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**Cl 30**    **SC 30.3.2.1.3**    **P 37**    **L 27**    # **545**  
 Bouda, Martin    Fujitsu

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

Insert a comma to separate Clause number from bitrate in "Clause 119 200 Gb/s"

**SuggestedRemedy**  
 "Clause 119, 200 Gb/s"

**Proposed Response**    **Response Status W**  
 PROPOSED REJECT.  
 These rows are being added to an existing list which does not include such commas. For example:  
 "Clause 82 100Gb/s multi-PCS lane using 2-level PAM"

**Cl 30**    **SC 30.3.2.1.3**    **P 37**    **L 28**    # **546**  
 Bouda, Martin    Fujitsu

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

Insert a comma to separate Clause number from bitrate in "Clause 119 200 Gb/s"

**SuggestedRemedy**  
 "Clause 119, 200 Gb/s"

**Proposed Response**    **Response Status W**  
 PROPOSED REJECT.  
 These rows are being added to an existing list which does not include such commas. For example:  
 "Clause 82 100Gb/s multi-PCS lane using 2-level PAM"

**Cl 45**    **SC 45.2.1**    **P 41**    **L 7**    # **184**  
 Grow, Robert    RMG Consulting

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

P802.3bv Amendment 9 should be the base text.

**SuggestedRemedy**  
 Cite IEEE Std 802.3bv-20xx instead of 802.3bz. Delete row for 1.22. Change last row to "1.23 through" (strikethrough)

**Proposed Response**    **Response Status W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the editing instruction to:  
 "Change the reserved row for 1.23 through 1.29 in Table 45-3 (as modified by IEEE Std 802.3bv-201x) as follows (unchanged rows not shown):"  
 Remove the row for bit 1.22  
 In the bottom row, change "1.22 through" to "1.23 through"

**Cl 45**    **SC 45.2.1.6**    **P 44**    **L 53**    # **185**  
 Grow, Robert    RMG Consulting

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

P802.3bv Amendment 9 defines the six bit number 110100. I'll submit a comment on P802.3bv to change the base text as suggested in the Editor's note. Resulting in base text of "110101 = reserved" plus the definition of 110100 as shown in P802.3bv/D3.0.

**SuggestedRemedy**  
 Change the P802.3bv editing instruction to include IEEE Std 802.3bv-20xx. Split line 35 into 0110101 = reserved and 0110100 = BASE-H PMA/PMD (underscore the leftmost 0). It may be helpful to add an Editors note stating that P802.3cb is defining 0111100 and 0111011 and P802.3cc is defining 0110110 and 0110101, in case either is assigned a lower amendment number.

**Proposed Response**    **Response Status W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add IEEE Std 802.3bv-201x to the list of amendments in the editing instruction and update the table to account for the changes being made by the P802.3bv draft.

**Cl 45**    **SC 45.2.1.10**    **P 51**    **L 3**    # **186**  
 Grow, Robert    RMG Consulting

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

P802.3bz (1.11.14) and P802.3bv (1.11.15) both define values requiring update to the base text from IEEE Std 802.3by.

**SuggestedRemedy**  
 Delete the first row of the table changes. Add a strikethrough Reserved and Value always 0 to the row for 1.11.13. P802.3bz/D3.3 submitted to RevCom has the word zero instead of the more common digit 0, but since it is strikethrough and publication editors might change to the digit for consistency, which is used might be considered worrying about nits.

**Proposed Response**    **Response Status W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the editing instruction to:  
 "Change the row for 1.11.13 in Table 45-14 (as modified by IEEE Std 802.3bz-201x) as follows (unchanged rows not shown):"  
 Remove the row for 1.11.15:13  
 Show the changes to the row for bit 1.11.13 with respect to the row in P802.3bz D3.3

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

**Cl 45**    **SC 45.2.1.10**    **P 51**    **L 12**    # **3**  
Hajduczenia, Marek    Charter Communicatio

**Comment Type E**    **Comment Status D**    *Bucket*  
"1.11.15:14" should be shown in underline - it is an inserted text

*SuggestedRemedy*  
Per comment

**Proposed Response**    **Response Status W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Overtaken by events.  
As pointed out by comment #186, P802.3bz is creating a reserved row for bit 1.11.13, so the row that is the subject of this comment is removed by the response to comment #186.

**Cl 45**    **SC 45.2.1.10.aaa**    **P 51**    **L 23**    # **187**  
Grow, Robert    RMG Consulting

**Comment Type ER**    **Comment Status D**    *Bucket*  
P802.3bz includes this subclause number for description of bit 1.11.14.

*SuggestedRemedy*  
Renummer to fit between the bit 13 subclause 45.2.10.aa description of 802.3by and the bit 14 subclause 45.2.10.aaa of 802.3bz. I think that makes it 45.2.10.ab. Make corresponding changes to the PICS.

**Proposed Response**    **Response Status W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Change editing instruction to:  
"Insert 45.2.1.10.aab after 45.2.1.10.aaa (as inserted by IEEE Std 802.3bz-201x) and before 45.2.1.10.aa (as inserted by IEEE Std 802.3by-2016) as follows:"  
Re-number the subclause defining bit 1.11.13 to 45.2.1.10.aab

**Cl 45**    **SC 45.2.1.116b**    **P 55**    **L 1**    # **188**  
Grow, Robert    RMG Consulting

**Comment Type ER**    **Comment Status D**    *Bucket*  
P802.3bv Amendment 9 inserts Table 45-90a for register 1.900.

*SuggestedRemedy*  
Renummer all 45-90x tables being inserted to be 45-90ax (x being the existing letter).  
Make corresponding changes to the PICS.

**Proposed Response**    **Response Status W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Change Tables 45-90a, 45-90b and 45-90c to 45-90aa, 45-90ab and 45-90ac.

**Cl 45**    **SC 45.2.1.123**    **P 60**    **L 20**    # **547**  
Bouda, Martin    Fujitsu

**Comment Type ER**    **Comment Status D**    *Bucket*  
"(.) PHY types that implement square wave testing and PRBS testing in the PMA." should be made inclusive of the newly added patterns of bits 1.1500.6 through 1.1500.15.

*SuggestedRemedy*  
"(.) PHY types that implement SSPRQ, JP03A, square wave, PRBS13Q or PRBS testing ability in the PMA."

**Proposed Response**    **Response Status W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Change:  
"for PHY types that implement square wave testing and PRBS testing in the PMA" to:  
"for PHY types that implement SSPRQ, JP03A, square wave, and PRBS testing in the PMA"  
with the added words underlined and deleted words in strikethrough.  
[Editor's note: Line changed from 60 to 20]

**Cl 45**    **SC 45.2.1.123**    **P 61**    **L 21**    # **4**  
Hajduczenia, Marek    Charter Communicatio

**Comment Type T**    **Comment Status D**    *Bucket*  
"and this register is implemented" - typically, register numbers are referenced explicitly

*SuggestedRemedy*  
Change "and this register is implemented" to "and register 1.500 is implemented" in newly added text and text existing already in 45.2.1.123

**Proposed Response**    **Response Status W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Change "and this register is implemented" to "and register 1.1500 is implemented" in newly added text and existing text in 45.2.1.123

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CI 45 SC 45.2.1.124 P 62 L 32 # 29  
 Healey, Adam Broadcom Ltd.

Comment Type T Comment Status D  
 JP03A is a jitter test pattern. Such testing would be more rigorous if aggressor lanes (i.e., active lanes other than the lane under test) could transmit a more spectrally rich test pattern while the lane under test transmits JP03A. To accomplish this, the per-lane management model used for the square wave test pattern (see 45.2.1.125) should also be applied to JP03A. A modification to the jitter specification that requires aggressor lanes to transmit "random" test patterns is the subject of a separate comment.

SuggestedRemedy  
 Remove "JP03A pattern enable" bit from register 1.1501 (Table 45-93). Create a "JP03A control" register modeled after 1.1510 (see 45.2.1.125) in an appropriate place within the management register space and generate a new subclause accordingly. In this register, provide lane 0 through lane 7 JP03A enable bits (the remainder are reserved). As in 45.2.1.125, state in the new subclause that "lanes for which JP03A is not enabled act as determined by other registers".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Implement the suggested remedy with the exception of the removal of the "JP03A pattern enable" bit from register 1.1501 (Table 45-93) since that bit is used by existing implementations of 100GBASE-KP4.

This response may be affected by the response to comment #131 which proposes to remove the need for the JP03A pattern.

CI 45 SC 45.2.1.125 P 64 L 24 # 548  
 Bouda, Martin Fujitsu

Comment Type ER Comment Status D Bucket  
 The footnote of Table 45-94 does not need to include "RO=Read only" anymore since all of the bits have become R/W.

SuggestedRemedy  
 Replace the footnote with "aR/W = Read/Write"

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Show the ", RO = Read only" part of the footnote in strikethrough font.

CI 45 SC 45.2.3.1.5 P 66 L 48 # 60  
 Anslow, Pete Ciena

Comment Type E Comment Status D Bucket  
 The changes to 45.2.3.1.5 shown in P802.3bs D2.0 are an extension of the changes shown in P802.3by D2.1.  
 However, comment #7 against P802.3by D2.1 resulted in the removal of the changes to 45.2.3.1.5 from the P802.3by draft.  
 See [http://www.ieee802.org/3/by/public/comments/8023by\\_D21\\_comment\\_final\\_responses\\_by\\_clause.pdf#page=5](http://www.ieee802.org/3/by/public/comments/8023by_D21_comment_final_responses_by_clause.pdf#page=5)  
 Without any changes being made by IEEE Std 802.3by-2016, there is no need for the changes shown in the P802.3bs draft.

SuggestedRemedy  
 Remove 45.2.3.1.5 from the P802.3bs draft (and therefore leave 45.2.3.1.5 as it is in the base standard).

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.3.6 P 68 L 36 # 5  
 Hajduczenia, Marek Charter Communicatio

Comment Type E Comment Status D Bucket  
 In Table 45-123, column for bit 3 uses much larger font than columns for bits 0, 1, and 2

SuggestedRemedy  
 Please use the same font for all columns: 0, 1, 2, and 3

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the column for bit 3 from 10 pt to 9 pt

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 45 SC 45.2.3.47a P 70 L 49 # 189  
 Grow, Robert RMG Consulting

Comment Type ER Comment Status D Bucket

P802.3bv Amendment 9 inserts 45.2.3.47a through 45.2.3.47g and Tabled 45-160a through 45-160g.

SuggestedRemedy

Renumber subclauses and tables to begin at 45.2.3.47h and 45-160h respectively. Make corresponding changes to the PICS.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change editing instruction to:

"Insert 45.2.3.47h through 45.2.3.47p after 45.2.3.47g (as inserted by IEEE Std 802.3bv-201x) as follows:"

Renumber subclauses from 45.2.3.47h and tables from Table 45-160h

Cl 45 SC 45.2.3.47a P 70 L 51 # 95  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

With the checker board distribution of RS-symbols into PCS lanes, the PCS FEC Symbol error counters don't provide a 1-1 mapping of physical lane to counter. So you have 2 physical lanes providing error counts into the same PCS FEC lane counter. This doesn't supply the intent of the counter to assist in identifying the lanes that are running at worse SER rates than others.

SuggestedRemedy

Presentation to be supplied

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Cl 45 SC 45.2.3.47d.2 P 72 L 50 # 41  
 Ran, Adeee Intel

Comment Type TR Comment Status D

This bit can be left unspecified (so that any value is allowed), but to reduce confusion it would be better to specify it. A value of 1 makes sense, as it indicates an undesirable situation.

The bit \_value\_ can't be "undefined" - a value of a bit is either 0 or 1.

("undefined" is sometimes used in clause 45 when a read value is irrelevant or a register is undefined, but the value of this register affects the encoding of the transmitted bit stream.)

SuggestedRemedy

Change "The value of bit 3.801.4 is undefined" to "This bit is set to one".

Alternatively, change to "unspecified" or "implementation dependent".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"The value of bit 3.801.4 is undefined if" to:

"The value of bit 3.801.4 is unspecified if"

Cl 45 SC 45.2.3.47i P 75 L 5 # 104  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

When defining the interval you should limit this to intervals that make sense for the FEC engine. For example for Clause 119 because there's two FEC decoders running in parallel this interval should not be an odd number since it'll be a pain to add in symbol counts for 4 or 8 of the lanes and then start the next interval with the sum of the error counts from the other lanes

SuggestedRemedy

Add the following to the definition of the register. "The least significant bit of this registers shall be ignored by by the 200G/400G PCS (119) since it operates on two codewords at a time."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Requirements on the Clause 119 PCS should not be placed in the optional MDIO clause.

In 119.2.5.3 (Page 162, line 18) change:

"in consecutive non-overlapping blocks of FEC\_degraded\_SER\_interval (see 119.3) codewords." to:

"in consecutive non-overlapping blocks of FEC\_degraded\_SER\_interval (see 119.3) codewords, where the least significant bit of FEC\_degraded\_SER\_interval is ignored (evaluated as 0) to make the number of codewords even."

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Cl 45 SC 45.2.5.4.a P 89 L 24 # 191  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

"DTE-XS" has an extra hyphen.

SuggestedRemedy

Change "DTE-XS" with "DTE XS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Change "DTE-XS" to "DTE XS".

Cl 45 SC 45.2.5.4.b P 89 L 29 # 192  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

"DTE-XS" has an extra hyphen.

SuggestedRemedy

Change "DTE-XS" with "DTE XS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Change "DTE-XS" to "DTE XS".  
 [Editor's note: Subclause changed from 45.2.5.4.a to 45.2.5.4.b]

Cl 78 SC 78.5 P 100 L 41 # 49  
 Zimmerman, George CME Consulting, Inc./

Comment Type E Comment Status D Bucket

Table 78-4 has gotten separated from its editing instruction.

SuggestedRemedy

Beat on frame and put Table 78-4 after its editing instruction on line 41 and before the next subclause.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Table 78-4 will not fit at the foot of page 100 after the editing instruction.  
 Since it does not affect the number of pages in the draft, change the settings so that Table 78-4 appears directly after the editing instruction.

Cl 93A SC 93A.1 P 313 L 40 # 492  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

200GAUI-n and 400GAUI-n are not physical layers.

SuggestedRemedy

Change "Physical Layer" with "Electrical interface" in the title of Table 93A-2 and in the header row of Table 93A-2.

Proposed Response Response Status W

PROPOSED REJECT.  
 Table 93A-2 contains a mixture of internal "AUI" interfaces and PMDs such as 100GBASE-CR4. These are all "Physical Layer" specifications as per the existing title of the table.

Cl 116 SC 116.1.2 P 105 L 12 # 6  
 Hajduczenia, Marek Charter Communicatio

Comment Type E Comment Status D Bucket

"in Annex 120B, or Annex 120C" - no need for ","

SuggestedRemedy

Change to "in Annex 120B or Annex 120C"  
 The same change in lines 16

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 On line 12, change:  
 "in Annex 120B, or Annex 120C" to:  
 "in Annex 120B or Annex 120C"  
 On line 16, this is a list with 4 items. IEEE Editorial style manual says:  
 "In a series of three or more terms, use a comma immediately before the coordinating conjunction (usually and, or, or nor)."

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 116 SC 116.1.4 P 106 L 24 # 549  
 Bouda, Martin Fujitsu

Comment Type ER Comment Status D Bucket

A nomenclature is a system of naming things, rather than specific instances of a systematic naming. Therefore, the word "Nomenclature" should be replaced by "PHY" in the sentence "Table 116-3 and Table 116-4 specify the correlation between nomenclature and clauses."

SuggestedRemedy

"Table 116-3 and Table 116-4 relate PHYs to applicable clauses."

Proposed Response Response Status W

PROPOSED REJECT.

A dictionary definition for nomenclature is:

"A system or set of terms or symbols especially in a particular science, discipline, or art".

These are a set of terms in a particular discipline, so the existing wording seems to be appropriate. It is also consistent with the wording in Clause 80 and Clause 105.

Cl 116 SC 116.1.4 P 106 L 28 # 550  
 Bouda, Martin Fujitsu

Comment Type ER Comment Status D Bucket

A nomenclature is a system of naming things, rather than specific instances of a systematic naming. Therefore, the word "Nomenclature" should be replaced by "Name", as in Table 116-2 for instance, or by "PHY".

SuggestedRemedy

Replace all occurrences of "Nomenclature" by "PHY".

Proposed Response Response Status W

PROPOSED REJECT.

A dictionary definition for nomenclature is:

"A system or set of terms or symbols especially in a particular science, discipline, or art".

These are a set of terms in a particular discipline, so the existing wording seems to be appropriate. It is also consistent with the wording in Clause 80 and Clause 105.

Cl 116 SC 116.1.4 P 107 L 4 # 551  
 Bouda, Martin Fujitsu

Comment Type ER Comment Status D Bucket

A nomenclature is a system of naming things, rather than specific instances of a systematic naming. Therefore, the word "Nomenclature" should be replaced by "Name", as in Table 116-2 for instance, or by "PHY".

SuggestedRemedy

Replace all occurrences of "Nomenclature" by "PHY".

Proposed Response Response Status W

PROPOSED REJECT.

A dictionary definition for nomenclature is:

"A system or set of terms or symbols especially in a particular science, discipline, or art".

These are a set of terms in a particular discipline, so the existing wording seems to be appropriate. It is also consistent with the wording in Clause 80 and Clause 105.

Cl 116 SC 116.2.3 P 108 L 1 # 144  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type ER Comment Status D

The full functionality of the respective PCS's are not captured, as they can be configured as the respective 200GXS or 400GXS to help implement the respective extender sublayers

SuggestedRemedy

add sentence - The 200GBASE-R PCS has the same functionality as the 200GXS, and therefore may be configured as the respective layer in order to implement the optional 200GMII Extender Sublayer. The 400GBASE-R PCS has the same functionality as the 400GXS, and therefore may be configured as the respective layer in order to implement the optional 400GMII Extender Sublayer.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add the following at the end of 116.2.3:

"The 200GBASE-R PCS has almost the same functionality as the 200GXS, and therefore may be configured as a 200GXS in order to implement part of the optional 200GMII Extender (see Clause 118). The 400GBASE-R PCS has almost the same functionality as the 400GXS, and therefore may be configured as a 400GXS in order to implement part of the optional 400GMII Extender (see Clause 118)."

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Cl 116 SC 116.3.2 P 109 L 13 # 193  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

PMA service interface is called not only by PCS but also called by another PMA, DTE 200GXS or DTE 400GXS sublayer.

SuggestedRemedy

Change "b) PMA: ." with the following:

b) PMA: -- for primitives issued on the interface between the PMA sublayer and one of PCS, DTE 200GXS, DTE 400GXS, or another PMA sublayer that is above the PMA sublayer.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change item b) to:

"PMA:-for primitives issued on the interface between the PMA sublayer and the PCS , DTE 200GXS, DTE 400GXS, or PMA sublayer above called the PMA service interface."

Cl 116 SC 116.3.2 P 109 L 15 # 195  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

DTE 200GXS and DTE 400GXS do not provide the service interface to PMA, because PMA is below DTE 200GXS and DTE 400GXS.

The upper interface of DTE 200GXS and DTE400GXS is 200GMII or 400GMII.

Only PHY 200GXS and PHY 400GXS provide the service interface to PMA above.

Also, we do not need separate prefixes. A single prefix of "PHY XS" is enough.

SuggestedRemedy

Change the definition of "c) 200GXS" and "d) 400GXS)" as follows:

c) PHY XS -- for primitives issued on the interface between the PHY 200GXS or PHY 400GXS sublayer and the PMA sublayer called the PHY XS service interface.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace "c) 200GXS" and "d) 400GXS" with:

"c) PHY\_XS:-for primitives issued on the interface between the PMA sublayer and the PHY 200GXS sublayer or PHY 200GXS sublayer called the PHY XS service interface.

Cl 116 SC 116.3.2 P 109 L 19 # 194  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

The abstract prefix "inst" for the service interface is used but not defined.

SuggestedRemedy

Add the following prefix of the service interface:

inst: -- for primitives issued on the interface between the PMA sublayer and one of PMD, PHY 200GXS, PHY 400GXS, or another PMA sublayer that is below the PMA sublayer.

or

inst: -- abstract prefix representing PMD, PMA, or PHY XS.

Proposed Response Response Status W

PROPOSED REJECT.

The only place in the draft that "inst" is used is Clause 120 where its meaning is explained on page 188 line 1.

Cl 116 SC 116.5 P 114 L 34 # 196  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

SP6 is defined at the output of the PMA closest to the PCS, but it is not clear if there is PMA above PCS with 200GXS or 400GXS.

SuggestedRemedy

Insert "below and" in front of "closest to the PCS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"SP6 on the 200GAUI-n/400GAUI-n interface, at the output of the PMA closest to the PCS." to:

"SP6 on the 200GAUI-n/400GAUI-n interface, at the output of the PMA closest to the 200GBASE-R/400GBASE-R PCS or DTE 200GXS/400GXS."

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CI 116 SC 116.5 P 117 L 23 # 197  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Table 116-8 gives max skew variation in PMD UI only for 26.5625 Gbd PMD lane, but there is also PMD lane operating at 53.125 Gbd for 400Gb/s PHY.

SuggestedRemedy

Add a new column of "Maximum Skew Variation for 53.125 Gbd PMD lane (UI)" with the following values:

- SP1 ~ 11
- SP2 ~ 21
- SP3 ~ 32
- SP4 ~ 181
- SP5 ~ 191
- SP6 ~ 202
- PCS ~ 213

Add the following note to the new column:

The symbol ~ indicates approximate equivalent of maximum Skew Variation in UI based on 1UI equals 18.82353 ps at PMD lane signaling rate of 53.125 Gbd.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The only skew points that can have signals at 53.125 GBd are SP3 and SP4.

Add a new column for "Maximum Skew Variation for 53.125 GBd PMD lane (UI)" with the following values:

- SP1 = N/A
- SP2 = N/A
- SP3 = 32
- SP4 = 181
- SP5 = N/A
- SP6 = N/A
- PCS = N/A

Add a new footnote to the inserted "(UI)" of:

"The symbol = indicates approximate equivalent of maximum Skew Variation in UI based on 1 UI equals 18.82353 ps at PMD lane signaling rate of 53.125 GBd."

where "=" in the above is the curly equals used in Table 116-8.

CI 116 SC 116.7 P 118 L 20 # 198  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

"200 Gigabit" is missing.

SuggestedRemedy

Insert "200 Gigabit and" after "Each of the".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #7

CI 116 SC 116.7 P 118 L 21 # 7  
 Hajduczenia, Marek Charter Communicatio

Comment Type T Comment Status D Bucket

PICS in 116.7 covers 200G and 400G, so the statement "Each of the 400 Gigabit Ethernet PICS conforms to the same notation and conventions used in 21.6." is only partially complete

SuggestedRemedy

Change to "Each of the 200 Gigabit and 400 Gigabit Ethernet PICS conforms to the same notation and conventions used in 21.6."

Proposed Response Response Status W

PROPOSED ACCEPT.

See also comments #155 and 198

CI 116 SC 116.7 P 118 L 21 # 155  
 Dudek, Mike Cavium

Comment Type E Comment Status D Bucket

Clause 116 covers both 200G and 400G. The notation and conventions used in 21.6 should be applied to the 200G pics.

SuggestedRemedy

Replace "400 Gigabit" with "200 Gigabit or 400 Gigabit"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #7



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Cl 117 SC 117.1.7 P 121 L 33 # 199  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

The reference to 81.1.6 is inappropriate, because 81.1.6 is XLGMII/CGMII structure. It should be a reference to 81.1.7 that is Mapping of XLGMII/CGMII signals to PLS service primitives.

SuggestedRemedy

Change the reference to 81.1.6 with a reference to 81.1.7.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change the reference to 81.1.7

Cl 117 SC 117.4 P 121 L 48 # 200  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is not easy to find "PMA stop signaling" in clause 81.4.

SuggestedRemedy

Change the sentence as follows:

LPI assertion and detection function identically to the CGMII specified in 81.4, with the single exception that the PMA stop signaling described in 81.4.4 is not applicable.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 117 SC 117.5.3 P 123 L 5 # 201  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Item "XGE" is referenced by FS1 in p 125, but not defined.

SuggestedRemedy

Add a new row as follows:

Item: \*XGE  
 Feature: PHY support of either 200GMII or 400GMII  
 Subclause: 117.2, 117.3  
 Value: (blank)  
 Status: O  
 Support: Yes  No

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove \*PHY200, \*PHY400, \*RS200, \*RS400.

These are not used elsewhere.

Add in \*MII

Feature: PHY support of either 200GMII or 400GMII

Subclause: 117.2, 117.3

Value: (blank)

Status: O

Support: Yes  No

Change all PICS entries that use RS:, XGE:, and PHY: to MII:

Cl 117 SC 117.5.3 P 123 L 11 # 202  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

At least one of RS200 or RS400 must be supported, because RS is mandatory.

SuggestedRemedy

Change the status of RS200 from "O" to "O.1".

Change the status of RS400 from "O" to "O.1".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #201

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 117 SC 117.5.3 P 123 L 16 # 253  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Item "LPI" is referenced from items "L1" and "L2" in 117.5.4.6.  
 SuggestedRemedy  
 Insert "\*" (asterisk) in front of "LPI" in the item column.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 117 SC 117.5.4.2 P 124 L 6 # 203  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Status should not be conditional for "RS", because RS is mandatory. RS is not defined in the major capabilities/options as well.  
 SuggestedRemedy  
 Change the status column for PL1 through PL13 from "RS:M" to "M".  
 Remove "N/A []" from the support column for PL1 through PL13.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See the response to comment #201.  
 RS is mandatory, but MII is not.

Cl 117 SC 117.5.4.2 P 124 L 9 # 204  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Reference to 117.1.7 for PL2 is not helpful, because there is no much detail description in 117.1.7.  
 SuggestedRemedy  
 Change the subclause column for PL2 from "117.1.7" to "117.1.7, 81.1.7.1.4".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 12 # 205  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Reference to 117.1.7 for PL3 is not helpful, because there is no much detail description in 117.1.7.  
 SuggestedRemedy  
 Change the subclause column for PL3 from "117.1.7" to "117.1.7, 81.1.7.1.4".  
 Proposed Response Response Status W  
 PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 15 # 206  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Reference to 117.1.7 for PL4 is not helpful, because there is no much detail description in 117.1.7.  
 SuggestedRemedy  
 Change the subclause column for PL4 from "117.1.7" to "117.1.7, 81.1.7.1.4".  
 Proposed Response Response Status W  
 PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 117 SC 117.5.4.2 P 124 L 17 # 207  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL5 is not helpful, because there is no much detail description in 117.1.7.

*SuggestedRemedy*

Change the subclause column for PL5 from "117.1.7" to "117.1.7, 81.1.7.1.4".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 21 # 208  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL6 is not helpful, because there is no much detail description in 117.1.7.

*SuggestedRemedy*

Change the subclause column for PL6 from "117.1.7" to "117.1.7, 81.1.7.2.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 24 # 209  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL7 is not helpful, because there is no much detail description in 117.1.7.

*SuggestedRemedy*

Change the subclause column for PL7 from "117.1.7" to "117.1.7, 81.1.7.2.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 28 # 210  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL8 is not helpful, because there is no much detail description in 117.1.7.

*SuggestedRemedy*

Change the subclause column for PL8 from "117.1.7" to "117.1.7, 81.1.7.2.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

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Cl 117 SC 117.5.4.2 P 124 L 32 # 211  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL9 is not helpful, because there is no much detail description in 117.1.7.

SuggestedRemedy

Change the subclause column for PL9 from "117.1.7" to "117.1.7, 81.1.7.2.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 35 # 212  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL10 is not helpful, because there is no much detail description in 117.1.7.

SuggestedRemedy

Change the subclause column for PL10 from "117.1.7" to "117.1.7, 81.1.7.5.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 37 # 213  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL11 is not helpful, because there is no much detail description in 117.1.7.

SuggestedRemedy

Change the subclause column for PL11 from "117.1.7" to "117.1.7, 81.1.7.5.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.2 P 124 L 42 # 214  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.1.7 for PL12 is not helpful, because there is no much detail description in 117.1.7.

SuggestedRemedy

Change the subclause column for PL12 from "117.1.7" to "117.1.7, 81.1.7.5.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.1.7 (see comment #199) together with any exceptions that are there now or may be added in later versions of the draft.



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CI 117 SC 117.5.4.3 P 125 L 13 # 220  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.2 for DS4 is not helpful, because there is no much detail description in 117.2.

SuggestedRemedy

Change the subclause column for DS4 from "117.2" to "117.2, 81.2.4".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.2 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 22 # 221  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS1 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS1 from "117.3" to "117.3, 81.3.1.1".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 25 # 222  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS2 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS2 from "117.3" to "117.3, 81.3.1.1".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 27 # 223  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS3 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS3 from "117.3" to "117.3, 81.3.1.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 27 # 224  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

FS3 depends on XGE (not RS), because it is mandatory only if either 200GMII or 400GMII is supported. RS is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for FS3 from "RS:M" to "XGE:M".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #201

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 117 SC 117.5.4.4 P 125 L 29 # 225  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS4 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS4 from "117.3" to "117.3, 81.3.1.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 32 # 226  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS5 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS5 from "117.3" to "117.3, 81.3.1.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 32 # 227  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

FS5 depends on XGE (not RS), because it is mandatory only if either 200GMII or 400GMII is supported. RS is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for FS5 from "RS:M" to "XGE:M".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #201

CI 117 SC 117.5.4.4 P 125 L 34 # 228  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS6 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS6 from "117.3" to "117.3, 81.3.1.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 36 # 229  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS7 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS7 from "117.3" to "117.3, 81.3.1.4".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 36 # 230  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

FS7 (start alignment) is a feature of RS that is mandatory, not optional. RS is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for FS7 from "RS:M" to "M".  
 Remove "N/A []" from the support column for FS7.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #201

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 117 SC 117.5.4.4 P 125 L 39 # 231  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS8 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS8 from "117.3" to "117.3, 81.3.2.1".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 43 # 233  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS10 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS10 from "117.3" to "117.3, 81.3.2.1".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 41 # 232  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS9 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS9 from "117.3" to "117.3, 81.3.2.1".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 46 # 235  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for FS11 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS11 from "117.3" to "117.3, 81.3.2.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

CI 117 SC 117.5.4.4 P 125 L 43 # 234  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

FS10 depends on XGE (not PHY), because it is mandatory only if either 200GMII or 400GMII is supported. PHY is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for FS10 from "PHY:M" to "XGE:M".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See the response to Comment #201

CI 117 SC 117.5.4.4 P 125 L 46 # 236  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

FS11 depends on XGE (not PHY), because it is mandatory only if either 200GMII or 400GMII is supported. PHY is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for FS11 from "PHY:M" to "XGE:M".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See the response to comment #201



IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

**Cl 117**    **SC 117.5.4.4**    **P 125**    **L 48**    # **237**  
Hidaka, Yasuo    Fujitsu Lab of America

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

Reference to 117.3 for FS12 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*  
Change the subclause column for FS12 from "117.3" to "117.3, 81.3.2.2".

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

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

**Cl 117**    **SC 117.5.4.4**    **P 126**    **L 6**    # **240**  
Hidaka, Yasuo    Fujitsu Lab of America

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

Reference to 117.3 for FS14 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*  
Change the subclause column for FS14 from "117.3" to "117.3, 81.3.2.3".

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

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

**Cl 117**    **SC 117.5.4.4**    **P 126**    **L 3**    # **239**  
Hidaka, Yasuo    Fujitsu Lab of America

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

FS13 depends on XGE (not RS), because it is mandatory only if either 200GMII or 400GMII is supported. RS is not defined in the major capabilities/options as well.

*SuggestedRemedy*  
Change the status column for FS13 from "RS:M" to "XGE:M".

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

See the response to comment #201

**Cl 117**    **SC 117.5.4.4**    **P 126**    **L 8**    # **241**  
Hidaka, Yasuo    Fujitsu Lab of America

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

Reference to 117.3 for FS15 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*  
Change the subclause column for FS13 from "117.3" to "117.3, 81.3.3.1".

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

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

**Cl 117**    **SC 117.5.4.4**    **P 126**    **L 3**    # **238**  
Hidaka, Yasuo    Fujitsu Lab of America

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

Reference to 117.3 for FS13 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*  
Change the subclause column for FS13 from "117.3" to "117.3, 81.3.2.3".

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

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

**Cl 117**    **SC 117.5.4.4**    **P 126**    **L 8**    # **242**  
Hidaka, Yasuo    Fujitsu Lab of America

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

FS15 (received error control character) is a feature of RS that is mandatory, not optional. RS is not defined in the major capabilities/options as well.

*SuggestedRemedy*  
Change the status column for FS15 from "RS:M" to "M".  
Remove "N/A []" from the support column for FS15.

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

See the response to comment #201

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 117 SC 117.5.4.4 P 126 L 10 # 244  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

FS16 (DATA\_VALID assertion) is a feature of RS that is mandatory, not optional. RS is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for FS16 from "RS:M" to "M".  
Remove "N/A []" from the support column for FS16.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See the response to comment #201

Cl 117 SC 117.5.4.4 P 126 L 10 # 243  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Reference to 117.3 for FS16 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for FS16 from "117.3" to "117.3, 81.3.3.3".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.5 P 126 L 20 # 245  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Status should not be conditional for "RS", because RS is mandatory. RS is not defined in the major capabilities/options as well.

SuggestedRemedy

Change the status column for LF1 through LF5 from "RS:M" to "M".  
Remove "N/A []" from the support column for LF1 through LF5.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See the response to comment #201

Cl 117 SC 117.5.4.5 P 126 L 20 # 246  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Reference to 117.3 for LF1 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for LF1 from "117.3" to "117.3, 81.3.4".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.5 P 126 L 22 # 247  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for LF2 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for LF2 from "117.3" to "117.3, 81.3.4.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

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Cl 117 SC 117.5.4.5 P 126 L 25 # 248  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for LF3 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*

Change the subclause column for LF3 from "117.3" to "117.3, 81.3.4.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.5 P 126 L 28 # 249  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for LF4 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*

Change the subclause column for LF4 from "117.3" to "117.3, 81.3.4.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.5 P 126 L 31 # 250  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for LF5 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*

Change the subclause column for LF5 from "117.3" to "117.3, 81.3.4.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

Cl 117 SC 117.5.4.6 P 126 L 40 # 251  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for L1 is not helpful, because there is no much detail description in 117.3.

*SuggestedRemedy*

Change the subclause column for L1 from "117.3" to "117.3, 81.3.1.2".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 117 SC 117.5.4.6 P 126 L 43 # 252  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 117.3 for L2 is not helpful, because there is no much detail description in 117.3.

SuggestedRemedy

Change the subclause column for L2 from "117.3" to "117.3, 81.3.2.4".

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 81.3 together with any exceptions that are there now or may be added in later versions of the draft.

Cl 118 SC 118.1 P 127 L 29 # 254  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

In Figure 118-1, DTE 200GXS and PHY 200GXS are not distinguished. DTE 400GXS and PHY 400GXS are not distinguished as well. Although their specifications are mostly identical, there have clear difference due to the location in the protocol stack. I think we should not omit the prefix "DTE" or "PHY" whenever their distinction is important or effective so as to remind readers of their distinction and labeling.

SuggestedRemedy

Make the following changes in Figure 118-1:

- Change the upper "200GXS" with "DTE 200GXS".
- Change the lower "200GXS" with "PHY 200GXS".
- Change the upper "400GXS" with "DTE 400GXS".
- Change the lower "400GXS" with "PHY 400GXS".
- Add "DTE = DATA TERMINAL EQUIPMENT" at the bottom.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

- Make the following changes to Figure 118-1:
- Change the upper "200GXS" to "DTE 200GXS".
  - Change the lower "200GXS" to "PHY 200GXS".
  - Change the upper "400GXS" to "DTE 400GXS".
  - Change the lower "400GXS" to "PHY 400GXS".
  - Add "DTE = DATA TERMINAL EQUIPMENT" and "PHY = PHYSICAL LAYER DEVICE" to the list of abbreviations at the foot of the figure.

Cl 118 SC 118.1.2 P 128 L 15 # 255  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

200GXS and 400GXS must be different from 200GBASE-R PCS and 400GBASE-R PCS regarding to IS\_SIGNAL.indication. However, such a difference is not described anywhere.

SuggestedRemedy

Change the paragraph in 118.1.2 to include the exception about SIGNAL.indication.

Add a new subclause for IS\_SIGNAL.indication for 200GXS/400GXS sublayer. For PHY 200GXS and PHY 400GXS, the direction of IS\_SIGNAL.indication is opposite to PCS. For DTE 200GXS and DTE 400GXS, the direction of IS\_SIGNAL.indication is same as PCS.

Or, add a new subclause to define the PHY XS service interface that is identical to the PMA service interface except the direction of IS\_SIGNAL.indication that the PMA service interface.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

While it is recognised that the SIGNAL.indication behavior of a PHY XS sublayer is somewhat different from that of a PCS sublayer, suitable text to describe the precise difference is requested.

Cl 118 SC 118.1.3 P 128 L 21 # 256  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is odd to call 200GAUI-n as physical instantiation of the 200GAUI-n.

SuggestedRemedy

Change "physical instantiations of the 200GAUI-n" with "physical instantiations of the PMA service interface".

Proposed Response Response Status W

PROPOSED REJECT.

Statement is correct as is.

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Cl 118 SC 118.1.3 P 128 L 28 # 257  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is odd to call 400GAUI-n as physical instantiation of the 400GAUI-n.

SuggestedRemedy

Change "physical instantiations of the 400GAUI-n" with "physical instantiations of the PMA service interface".

Proposed Response Response Status W

PROPOSED REJECT.

Statement is correct as is.

Cl 118 SC 118.2 P 128 L 37 # 38  
 Ran, Adee Intel

Comment Type ER Comment Status D

This paragraph probably means to say that if FEC degrade optional feature is implemented, then:

1. The DTE XS should behave as specified in clause 119\_plus additional requirements in 118.2.1\_
2. the PHY XS should behave as specified in 118.2.2

But the way it is written makes it really difficult to understand what is required, and gives no clue to that it can be used for.

In addition, it is not specified what tx\_am\_sf and rx\_am\_sf should include if the option is not implemented. It makes sense that the rx\_am\_sf should still forward any indication that comes from the PHY... but it's not clear from the text that this part is not optional.

SuggestedRemedy

Rewrite this paragraph in plain standard language. Make it clear what \_shall\_ be done when the option is implemented and when it isn't. (Sorry but I can't think of a good replacement text)

Proposed Response Response Status W

PROPOSED REJECT.

Lack of specific remedy.

Cl 118 SC 118.2 P 128 L 41 # 105  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

When the degrade features is not-supported or enabled in the XS layer, I would think we'd want it to just echo the PCS value all the way back to the RS.

SuggestedRemedy

Add text stating tx\_am\_sf is a copy of rx\_am\_sf when degrade is not enabled or supported.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending a presentation within the task force.

[Editor's note: page changed from 8 to 128]

Cl 118 SC 118.2 P 130 L 27 # 52  
 Laubach, Mark Broadcom Limited

Comment Type E Comment Status D Bucket

Add period to end of sentence.

SuggestedRemedy

As per comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.2.1 P 128 L 44 # 36  
 Ran, Adee Intel

Comment Type ER Comment Status D Bucket

Cross reference seems incorrect - 118.3 does not mention FEC\_degraded\_SER\_enable.

Also in 118.2.2, P129 L5.

Should it be 118.4? This subclause only lists the MDIO mapping, but does not describe the variable - the full description is only available in 45.2.4.11j.1, which is hard to find. So this cross-reference is not useful.

SuggestedRemedy

Either add the description from clause 45 to 118.4 and change the cross reference to 118.4, or point directly to clause 45, or remove the cross reference.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comments #262 and #263

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Cl 118 SC 118.2.1 P 128 L 45 # 262  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

118.3 is referred for FEC\_degraded\_SER\_enable, but there is no description of FEC\_degraded\_SER\_enable in 118.3.

SuggestedRemedy

Change "see 118.3" with "see 118.4".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.2.1 P 128 L 45 # 117  
 Ofelt, David Juniper Networks

Comment Type ER Comment Status D Bucket

Reference to 118.3 should be 118.4 since 118.4 is where the MDIO mapping tables live.

SuggestedRemedy

Change 118.3 to 118.4.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #262

Cl 118 SC 118.2.1 P 128 L 52 # 8  
 Hajduczenia, Marek Charter Communicatio

Comment Type E Comment Status D Bucket

Text "5.801.6 of the DTE XS FEC status register" uses font smaller than the rest of the text

SuggestedRemedy

Please use the consistent font size

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.2.2 P 128 L 19 # 39  
 Ran, Adeee Intel

Comment Type TR Comment Status D

The text on the left says

"When the PHY 200GXS or PHY 400GXS detects FEC degrade, the signal is propagated to the adjacent PCS, which can propagate that signal as local degrade"

How can it propagate that signal?

I would expect that the PHY "adjacent PCS" (facing the partner, so that it is *\_not\_* a part of the PHY XS) *\_should\_* propagate a degradation detected by the DTE XS. But the signaling of that PCS is specified in 119.2.4.4 using only the variable FEC\_degraded\_SER (which is defined in clause 119), without any input from the PHY XS PCS. Clause 119 does not assume clause 118.

A similar problem exists in the receive direction (right side). Degradation detected by the "adjacent PCS" should be propagated to the DTE XS, but how?

Also in P129, lines 38 and 43, the text says "the adjacent PCS sublayer indicates" - how does it indicate?

It seems that some interface between the PCS in the PHY XS and the adjacent PCS (in both directions) is missing. The figure only has "200GMII or 400GMII" which does not have a way to encode the "degradation" indication.

SuggestedRemedy

For propagation in the TX direction, perhaps specify in 119.2.4.4 that the FEC\_degraded\_SER variable can be set and cleared not only by the conditions specified, but also by an adjacent XS in an implementation-dependent manner (regardless of whether the PCS has the feature enabled or not).

For propagation in the RX direction, perhaps specify in 118.2.2 that adjacent\_pcs\_local\_degraded and adjacent\_pcs\_rm\_degraded can be set and cleared by the adjacent PCS in an implementation-dependent manner.

Alternatively, add service interface primitives between the adjacent "PHY PCS" and "PHY XS" to convey this information.

Proposed Response Response Status W

PROPOSED REJECT.

It was purposely left to the designer to provide the signaling path.

[Editor's note: page changed from 128 to 129]

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CI 118 SC 118.2.2 P 129 L 5 # 118  
 Ofelt, David Juniper Networks  
 Comment Type ER Comment Status D Bucket  
 Reference to 118.3 should be 118.4 since 118.4 is where the MDIO mapping tables live.  
 SuggestedRemedy  
 Change 118.3 to 118.4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to Comment #263

CI 118 SC 118.2.2 P 129 L 5 # 263  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 118.3 is referred for FEC\_degraded\_SER\_enable, but there is no description of FEC\_degraded\_SER\_enable in 118.3.  
 SuggestedRemedy  
 Change "see 118.3" with "see 118.4".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 118 SC 118.2.2 P 129 L 19 # 51  
 Laubach, Mark Broadcom Limited  
 Comment Type E Comment Status D Bucket  
 As I view in the PDF at 100%: the bottom of the right vertical arrow appears to collide/overlap with the second "0" of "400GXS" in Figure 118-2. Same for Figure 118-3 on page 130. Suggest creating a little more white space separation between the bottom of the arrow and the text.  
 SuggestedRemedy  
 As per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 118 SC 118.2.2 P 129 L 30 # 61  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D Bucket  
 Figures 118-2 and 118-3 are missing the acronym expansion key as per other diagrams such as Figure 118-1  
 SuggestedRemedy  
 Add an acronym expansion key to Figures 118-2 and 118-3.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 118 SC 118.2.2 P 129 L 34 # 264  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 declared  
 SuggestedRemedy  
 asserted  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 118 SC 118.2.2 P 129 L 39 # 265  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D  
 its  
 SuggestedRemedy  
 it is  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change:  
 Boolean variable that is asserted true when the adjacent PCS sublayer indicates it has FEC local degraded active (its equivalent to the FEC\_degraded\_SER variable is asserted or its equivalent to the rx\_local\_degraded variable is asserted).  
 To:  
 Boolean variable that is asserted true when the adjacent PCS sublayer indicates it has FEC local degraded active. This indicates the adjacent PCS has its equivalent to the FEC\_degraded\_SER or rx\_local\_degraded variable asserted.

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Cl 118 SC 118.2.2 P 129 L 44 # 266  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D  
its

SuggestedRemedy  
it is

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

Change:  
Boolean variable that is asserted true when the adjacent PCS sublayer indicates it has FEC remote degraded active (its equivalent to the rx\_rm\_degraded variable is asserted).  
To:  
Boolean variable that is asserted true when the adjacent PCS sublayer indicates it has FEC remote degraded active. This indicates the adjacent PCS has its equivalent to the rx\_rm\_degraded variable asserted

Cl 118 SC 118.2.2 P 130 L 26 # 267  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D  
It seems that "PHY XS" should be "DTE XS".

SuggestedRemedy  
Change "PHY XS" with "DTE XS".

Proposed Response Response Status W  
PROPOSED REJECT.

Correct as is.

Cl 118 SC 118.3 P 131 L 8 # 62  
Anslow, Pete Ciena

Comment Type E Comment Status D Bucket  
Figure 118-4 has the PMA layers shaded, but this clause is about the 200GXS or 400GXS

SuggestedRemedy  
Remove the shading from the PMA layers and apply to the XS layers

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 118 SC 118.4 P 130 L 15 # 97  
Slavick, Jeff Broadcom

Comment Type TR Comment Status D  
Remove all references to Rx Test Mode since we removed the Rx checker from PCS (comment #46 from D1.1). Rx just operates in functional mode when Tx is in Test mode since it looks just like mission data

SuggestedRemedy  
Remove references to rx\_test\_mode from Table 118-1, Table 118-3, Table 119-4, MDIO register 5.42.2, 119.2.1

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

Remove the 3 references from the tables and bits 3.42.2, 4.42.2, and 5.42.2.

In 119.2.1 change:  
The PCS transmit channel and receive channel can each operate in normal mode or test-pattern mode.  
to:  
The PCS transmit channel can operate in normal mode or test-pattern mode.

On page 144 line 29, change:  
When the receive channel is in normal or test-pattern mode, the PCS Synchronization process continuously monitors  
to:  
The PCS Synchronization process continuously monitors

On page 144 line 44, change:  
"The PCS shall provide transmit test-pattern mode for the scrambled idle pattern (see 119.2.4.9), and shall provide receive test-pattern mode for the scrambled idle pattern. Test-pattern mode is activated separately for transmit and receive. The PCS shall support transmit test-pattern mode and receive test-pattern mode operating simultaneously so as to support loopback testing."  
to:  
"The PCS shall provide transmit test-pattern mode for the scrambled idle pattern (see 119.2.4.9)."

On Page 165 line 36 remove:  
"r\_test\_mode  
Boolean variable that is asserted true when the receiver is in test-pattern mode."

On page 172 line 2, change:  
"reset+ r\_test\_mode + !align\_status"  
to:  
"reset + !align\_status"



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Cl 118 SC 118.4 P 130 L 40 # 268  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 "MDIO" is used twice.  
 SuggestedRemedy  
 Change "MDIO PHY XS and DTE XS MDIO status bits" with "MDIO PHY XS and DTE XS status bits".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.4 P 132 L 7 # 269  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Table 118-1 has a column of "PCS register name", although this is a table for PHY XS.  
 SuggestedRemedy  
 Change "PCS register name" in the header row of Table 118-1 with "PHY XS register name".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.4 P 132 L 35 # 270  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Table 118-2 has a column of "PCS register name", although this is a table for PHY XS.  
 SuggestedRemedy  
 Change "PCS register name" in the header row of Table 118-2 with "PHY XS register name".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.4 P 132 L 49 # 271  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 No prefix of "PHY XS". Inconsistent from other rows.  
 SuggestedRemedy  
 Change "FEC corrected codewords" in the column of MDIO status variable with "PHY XS FEC corrected codewords".  
 Proposed Response Response Status W  
 PROPOSED REJECT.

The MDIO variable name is "FEC corrected codewords". See Table 45-171j

Cl 118 SC 118.4 P 132 L 51 # 272  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 No prefix of "PHY XS". Inconsistent from other rows.  
 SuggestedRemedy  
 Change "FEC uncorrected codewords" in the column of MDIO status variable with "PHY XS FEC uncorrected codewords".  
 Proposed Response Response Status W  
 PROPOSED REJECT.

The MDIO variable name is "FEC uncorrected codewords". See Table 45-171k

Cl 118 SC 118.4 P 133 L 4 # 273  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Table 118-2 has a column of "PCS register name", although this is a table for PHY XS.  
 SuggestedRemedy  
 Change "PCS register name" in the header row of Table 118-2 with "PHY XS register name".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Duplicate of comment #270 since a single heading row is repeated on the next page.

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Cl 118 SC 118.4 P 133 L 24 # 274  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

Table 118-3 has a column of "PCS register name", although this is a table for DTE XS.

SuggestedRemedy

Change "PCS register name" in the header row of Table 118-3 with "DTE XS register name".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.4 P 134 L 4 # 275  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

Table 118-4 has a column of "PCS register name", although this is a table for DTE XS.

SuggestedRemedy

Change "PCS register name" in the header row of Table 118-4 with "DTE XS register name".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.4 P 134 L 18 # 276  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

No prefix of "DTE XS". Inconsistent from other rows.

SuggestedRemedy

Change "FEC corrected codewords" in the column of MDIO status variable with "DTE XS FEC corrected codewords".

Proposed Response Response Status W

PROPOSED REJECT.

The MDIO variable name is "FEC corrected codewords". See Table 45-182j

Cl 118 SC 118.4 P 134 L 20 # 277  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

No prefix of "DTE XS". Inconsistent from other rows.

SuggestedRemedy

Change "FEC uncorrected codewords" in the column of MDIO status variable with "DTE XS FEC uncorrected codewords".

Proposed Response Response Status W

PROPOSED REJECT.

The MDIO variable name is "FEC uncorrected codewords". See Table 45-182k

Cl 118 SC 118.5.3 P 136 L 6 # 278  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

A reference to 118.1 may be helpful for item "CCE200".

SuggestedRemedy

Change the subclause column for CCE200 from "117, 119.1.4.1" to "117, 118.1, 119.1.4.1".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #282

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Cl 118 SC 118.5.3 P 136 L 6 # 282  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

The item name "CCE200" is inconsistent with PICS in other clauses.

The following item names are used for GMII support in other clauses:

- XGE XGMII is supported (Clause 48)
- XGE XGMII is supported (Clause 49)
- XGE XGMII is supported (Clause 55)
- XGE40 XLGMII is supported (Clause 82)
- XGE100 CGMII is supported (Clause 82)
- 25GE 25GMII is supported (Clause 107)

*SuggestedRemedy*

Change the item column for CCE200 from "CCE200" to "200GE".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace CCE200 and CDE400 with:

- MII
- Feature: 200GMII or 400GMII logical interface
- Subclause: 117, 118.1
- Value: Logical interface is supported
- Status: O
- Support: Yes  No

Cl 118 SC 118.5.3 P 136 L 6 # 53  
 Laubach, Mark Broadcom Limited

Comment Type E Comment Status D Bucket

The two subclauses for items CCE200 and CDE400 use a comma for separation. While in 118.5.4.3 Page 138, Line 6-11, the two subclauses for items C1 and C2 use "and" for separation. Suggest changing the subclauses for C1 and C2 to comma as looking at the PICS for the other clauses, the use of comma is dominant.

Looking ahead at 119.6.4.3 (page 179, line 6-11), same observation.

*SuggestedRemedy*

As per comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.5.3 P 136 L 6 # 92  
 Trowbridge, Steve Nokia

Comment Type E Comment Status D Bucket

The "Support" column is ragged - the first few rows have the entries centered, the last few have them left aligned. Similar issue with the receive function table further on in this clause

*SuggestedRemedy*

Use a consistent alignment for the support column

Proposed Response Response Status W

PROPOSED ACCEPT.

[Editor's note: Column should be right aligned per 802.3 template]

Cl 118 SC 118.5.3 P 136 L 8 # 279  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

A reference to 118.1 may be helpful for item "CDE400".

*SuggestedRemedy*

Change the subclause column for CCE200 from "117, 119.1.4.1" to "117, 118.1, 119.1.4.1".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #282

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Cl 118 SC 118.5.3 P 136 L 8 # 283  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

The item name "CDE400" is inconsistent with PICS in other clauses.

The following item names are used for GMII support in other clauses:

- XGE XGMII is supported (Clause 48)
- XGE XGMII is supported (Clause 49)
- XGE XGMII is supported (Clause 55)
- XGE40 XLGMII is supported (Clause 82)
- XGE100 CGMII is supported (Clause 82)
- 25GE 25GMII is supported (Clause 107)

*SuggestedRemedy*

Change the item column for CDE400 from "CDE400" to "400GE".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #282

Cl 118 SC 118.5.3 P 136 L 11 # 280  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

A reference to 119.1.1 may be inappropriate for item "200GXS".

*SuggestedRemedy*

Change the subclause column for 200GXS from "119.1.1" to "118.1".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.5.3 P 136 L 13 # 281  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

A reference to 119.1.1 may be inappropriate for item "400GXS".

*SuggestedRemedy*

Change the subclause column for 400GXS from "119.1.1" to "118.1".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.5.3 P 136 L 14 # 284  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

We need items to distinguish distinctive feature of PHY XS and DTE XS.

*SuggestedRemedy*

Insert the following two items after 400GXS:

Item: \*PHYXS  
 Feature: PHY 200GXS or PHY 400GXS  
 Subclause: 118.1  
 Value/Comment: (blank)  
 Status: O/2  
 Support: Yes  No

Item: \*DTEXS  
 Feature: DTE 200GXS or DTE 400GXS  
 Subclause: 118.1  
 Value/Comment: (blank)  
 Status: O/2  
 Support: Yes  No

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 118 SC 118.5.3 P 136 L 25 # 285  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Reference to 118.5.5 for JTM is inappropriate, because 118.5.5 is a PICS clause.

*SuggestedRemedy*

Change the subclause column for JTM from "118.5.5" to "119.2.1, 119.2.4.9".

Proposed Response Response Status W

PROPOSED ACCEPT.





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Cl 118 SC 118.5.5.1 P 139 L 26 # 386  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 It is odd to have "118.5.5.1 Bit order" as a sub clause of "118.5.5 Test-pattern modes".  
 SuggestedRemedy  
 Raise the level of subclause "118.5.5.1 Bit order", and renumber subclauses.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.5.1 P 139 L 32 # 299  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 B1 is mandatory.  
 SuggestedRemedy  
 Remove "No []" in the support column for B1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6 P 139 L 44 # 298  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Mapping of MDIO register bits are mandatory.  
 SuggestedRemedy  
 Insert the following items after M1:  
 Item: M2  
 Feature: Mapping of MDIO control bits and MDIO status bits for PHY 200GXS or PHY 400GXS  
 Sub clause: 118.4  
 Value/Comment: Table 118-1 and Table 118-2  
 Status: MD\*PHYXS:M  
 Support: Yes []  
 Item: M3  
 Feature: Mapping of MDIO control bits and MDIO status bits for DTE 200GXS or DTE 400GXS  
 Sub clause: 118.4  
 Value/Comment: Table 118-3 and Table 118-4  
 Status: MD\*DTEXS:M  
 Support: Yes []  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.1 P 140 L 7 # 300  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 SM1 is mandatory for 200GXS.  
 SuggestedRemedy  
 Change "No []" in the support column for SM1 with "N/A []".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 118 SC 118.5.6.1 P 140 L 10 # 324  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 SM2 is mandatory for 400GXS.  
 SuggestedRemedy  
 Change "No []" in the support column for SM2 with "N/A []".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.2 P 140 L 33 # 329  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 L2 is mandatory.  
 SuggestedRemedy  
 Remove "No []" in the support column for L2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.1 P 140 L 13 # 325  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 The SLIP functions evaluates all possible block "positions" rather than all possible "blocks".  
 SuggestedRemedy  
 Change the feature column for SM3 from "The SLIP function evaluates all possible blocks" to "The SLIP function evaluates all possible block positions".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.2 P 140 L 34 # 327  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 When the 200GXS or 400GXS is in loopback, it shall ignore all data presented to it by the PMA sublayer.  
 SuggestedRemedy  
 Insert the following item after L2:  
 Item: L3  
 Feature: When in loopback, ignore all data presented by the PMA sublayer.  
 Subclause: 119.4  
 Status: M  
 Support: Yes []  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.1 P 140 L 13 # 326  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 SM3 through SM6 are mandatory.  
 SuggestedRemedy  
 Remove "No []" in the support column for SM3 through SM6.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.3 P 140 L 43 # 330  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 TIM1 is conditional mandatory only if 200GXS is supported.  
 SuggestedRemedy  
 Change "No []" with "N/A []" in the support column for TIM1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 118 SC 118.5.6.2 P 140 L 29 # 328  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 L1 is mandatory.  
 SuggestedRemedy  
 Remove "No []" and "N/A []" in the support column for L1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.



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Cl 118 SC 118.5.6.3 P 140 L 46 # 331  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 TIM2 is conditional mandatory only if 400GXS is supported.  
 SuggestedRemedy  
 Change "No []" with "N/A []" in the support column for TIM2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.1.1 P 141 L 39 # 54  
 Laubach, Mark Broadcom Limited  
 Comment Type E Comment Status D Bucket  
 Add a period to end of sentence each for b) and c).  
 SuggestedRemedy  
 As per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.1.3 P 141 L 40 # 100  
 Slavick, Jeff Broadcom  
 Comment Type E Comment Status D Bucket  
 Featurs of PCS doesn't denote it converts data from 257 -> 66 but it does say it does the inverse for data octect generation and fec data.  
 SuggestedRemedy  
 Change b) to read: "Transcoding from 66-bit blocks to (from) 257-bit blocks"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.1.3 P 141 L 40 # 93  
 Trowbridge, Steve Nokia  
 Comment Type E Comment Status D Bucket  
 Most elements in the list indicate both directions of processing, e.g., encoding/decoding, however this only lists "Transcoding from 66B blocks to 257B blocks"  
 SuggestedRemedy  
 Change to either "Transcoding between 66B blocks and 257B blocks" or "Transcoding of 66B blocks to/from 257B blocks"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #100

Cl 119 SC 119.1.4 P 141 L 54 # 332  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Since a transfer on a PCS lane is always done by 1 bit per transfer, Gb/s is more easy to understand Gtransfer/s.  
 SuggestedRemedy  
 Change "26.5625 Gtransfer/s on each of 8 PCS lanes" with "26.5625 Gb/s on each of 8 PCS lanes" at L54 on P141.  
 Also change "26.5625 Gtransfer/s on each of 16 PCS lanes" with "26.5625 Gb/s on each of 16 PCS lanes" at L30 on P142.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This terminology is consistent with previous speeds.

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Cl 119 SC 119.1.4.1 P 142 L 39 # 333  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The PCS client is not the Reconciliation Sublayer, if there is an optional 200GMII Extender or 400GMII Extender.

SuggestedRemedy

Change "The PCS client is the Reconciliation Sublayer." with the following:

If there is no optional 200GMII Extender or 400GMII Extender, the PCS client is the Reconciliation Sublayer.

If there is an optional 200GMII Extender, the PCS client is a PHY 200GXS Sublayer.

If there is an optional 400GMII Extender, the PCS client is a PHY 400GXS Sublayer.

Proposed Response Response Status W

PROPOSED REJECT.

Correct as is. The PCS defined in clause 119 would not be the PCS adjacent to the XS. That would be a new future PCS.

Cl 119 SC 119.2.3.7 P 146 L 27 # 334  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

There is a reference to 82.2.3.8 which may need a maintenance.

In the second sentence of 82.2.3.8, it is written as the /T/ can occur on any octet of the XLGMII/CGMII and "within" any character of the block. This sentence is inappropriate, because it implicates that the /T/ can occur on "any bit" of the block, although the packet must be always an integer multiple of octets.

It is recommended to avoid a reference to 82.2.3.8.

The following clauses have the same problem:

- 49.2.4.9
- 55.3.2.2.12
- 82.2.3.8
- 113.3.2.2.12 (802.3bq)

SuggestedRemedy

Copy the paragraph of 82.2.3.8 here.  
Remove "within" in front of "any character".  
Change "XLGMII/CGMII" with "200GMII/400GMII".

Proposed Response Response Status W

PROPOSED REJECT.

It is correct as is. It says within any character of the block, not at any bit of any character of the block.

Cl 119 SC 119.2.4.1 P 146 L 52 # 335  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

A reference for the transmit state diagram is missing.

SuggestedRemedy

Insert "shown in Figure 119-14" after "the transmit state diagram".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.4.2 P 147 L 28 # 336  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

"from" does not make sense.

91.5.2.5 has the same problem.

SuggestedRemedy

Change "from" with "form".

Proposed Response Response Status W

PROPOSED REJECT.

Correct as is. With the subordinate clause omitted, this is "Omit tx\_coded\_c<9:6> from tx\_xcoded per the following expressions."

Cl 119 SC 119.2.4.3 P 149 L 3 # 337  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is not good to call tx\_xcoded<256:0> as "payload", because tx\_xcoded<0> is a tag bit and the actual "payload" is tx\_xcoded<256:1>.

SuggestedRemedy

Change "payload" with "transcoded 257-bit block".

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 119 SC 119.2.4.3 P 149 L 3 # 352  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Scrambler is a mandatory feature for S1 of PICS, but "shall" is missing.

SuggestedRemedy  
 Change "is scrambled" with "shall be scrambled".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.3 P 149 L 4 # 338  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The scrambler in 49.2.6 scrambles only the payload of the block, whereas the scrambler in this clause scrambles the whole 257-bit block, not only the payload.

SuggestedRemedy  
 Replace the second sentence in 119.2.4.3 as follows:

The scrambler is identical to the scrambler used in Clause 49 excepting that the whole 257-bit block is scrambled instead of the payload. See 49.2.6 for the definition of the scrambler.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Replace the second sentence in 119.2.4.3 with:  
 "The scrambler polynomial is identical to that in Clause 49, see Equation (49-1) for the definition of the ploynomial."

Cl 119 SC 119.2.4.4 P 149 L 9 # 339  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D

The first paragraph of 119.2.4.4 is not well written. It is hard to follow, because a reference to 91.5.2.6 is useless (it is so different) and there is unnecessarily detail from the third sentence.

SuggestedRemedy  
 Remove the two sentences "In order . 91.5.2.6", and insert a new paragraph at the beginning of 119.2.4.4 which is a modified version of the first paragraph of 91.5.2.6. Avoid a reference to 91.5.2.6. The following is an example:

In order to support deskew and reordering of the individual PCS lanes at the receive PCS, alignment markers corresponding to PCS lanes are periodically inserted after being processed by the alignment marker mapping function.

The alignment marker mapping function compensates for the operation of the symbol distribution function defined in 119.2.4.7 and rearranges the alignment marker bits so that they appear on the FEC lanes intact and in the desired sequence. This preserves the properties of the alignment markers (e.g. DC balance, transition density) and provides a deterministic pattern for the purpose of synchronization. The RS-FEC receive function uses knowledge of this mapping to determine the FEC lane that is received on a given lane of the PMA service interface, to compensate for skew between FEC lanes, and to identify RS-FEC codeword boundaries.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change:  
 In order to support deskew and reordering of the individual PCS lanes at the receive PCS, alignment markers are added periodically for each PCS lane. The alignment marker for each PCS lane is composed of a fixed 96-bit block interleaved with fixed 24-pad bits to achieve alignment marker field positioning identical to that defined in 91.5.2.6.

To:  
 In order to support deskew and reordering of the individual PCS lanes at the receive PCS, alignment markers corresponding to PCS lanes are periodically inserted after being processed by the alignment marker mapping function.

The alignment marker mapping function compensates for the operation of the symbol distribution function and rearranges the alignment marker bits so that they appear on the PCS lanes intact and in the desired sequence. This preserves the properties of the alignment markers (e.g. DC balance, transition density) and provides a deterministic pattern for the purpose of synchronization.

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Cl 119 SC 119.2.4.4 P 149 L 11 # 101  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

Since both 96b pattern and the "24-pad bits" are fixed. Why not just state the AM is a fixed 120b pattern.

SuggestedRemedy

Change "96-bit block interleaved with fixed 24-pad bits" to read "120-bit block"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to #339

[Editor's note: page changed to 149 from 147]

Cl 119 SC 119.2.4.4 P 149 L 12 # 119  
 Ofelt, David Juniper Networks

Comment Type E Comment Status D

Text describes the alignment marker structure for each lane and refers to the "field positioning identical to that defined in 91.5.2.6". It is unclear to me what that actually means- the alignment marker structure in that section seems to be different from what we have in 200/400GbE

SuggestedRemedy

Clarify the meaning

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to #339

Cl 119 SC 119.2.4.4 P 149 L 39 # 340  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

The first 48 bits are not identical, because the first 48 bits include UP0 that is different between PCS lanes.

SuggestedRemedy

Change "the first 48 bits" with "CM0 through CM5".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.4.4 P 149 L 41 # 341  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

When this clause is referenced from XS, this is not the PMA service interface in the context of PHY XS, because PMA is the upper sublayer that receives the service, not the lower sublayer that provides the service.

SuggestedRemedy

Change "at the PMA service interface" with "the service interface between PMA and PCS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

The format shown in Table 119-1 defines how the alignment markers appear on the PCS lanes at the PMA service interface.

To:

The format shown in Table 119-1 defines how the alignment markers appear on a given PCS lane.

Cl 119 SC 119.2.4.4 P 152 L 19 # 102  
 Slavick, Jeff Broadcom

Comment Type E Comment Status D Bucket

Can Table 119-1 and Table 119-2 use fixed width font so everything lines up nicely?

SuggestedRemedy

See comment

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.4.4 P 152 L 20 # 98  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

Make all the UM for 200G PCS lanes 1-7 the same for as 400G. UM for lane 0 is unique. This will ensure no false link ups of 200G or 400G but minimize the patterns needed to be checked.

SuggestedRemedy

Make entries for PCS lanes 1-7 of Table 119-1 be the same as Table 119-2 PCS lanes 1-7

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending a discussion within the task force.

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Cl 119 SC 119.2.4.4 P 152 L 20 # 99  
Slavick, Jeff Broadcom

Comment Type TR Comment Status D

Shift tx\_am\_sf to be the first nibble of the UP0 for lane 0. Make the 2nd nibble of UP0 for lane 0 be it's inverse. Then 802.3cd can insert it in the single lane implementations in the same "spot".

SuggestedRemedy

Change tx\_am\_sf to be {1,degrade,0,0} and update definition of UP0 to be tx\_am\_sf,-tx\_am\_sf for PCS lane 0.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Expecting a presentation in the task force to cover the details of the proposed changes.

Cl 119 SC 119.2.4.4.1 P 150 L 31 # 342  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is not clear where am\_mapped<1027:0> is inserted to.

SuggestedRemedy

Insert "to the output stream" after "inserted".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:  
shall be inserted so it appears every  
to:  
shall be inserted so it appears in the output stream every

Cl 119 SC 119.2.4.4.1 P 150 L 34 # 344  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

Two ways should be written in a parallel form.

SuggestedRemedy

Make a new paragraph starting at "For a 10280-bit block".  
Remove an empty line after "group inserted:" to make it a single paragraph.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.4.4.2 P 151 L 33 # 343  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is not clear where am\_mapped<1027:0> is inserted to.

SuggestedRemedy

Insert "to the output stream" after "inserted".

Proposed Response Response Status W

Change:  
shall be inserted so it appears every  
to:  
shall be inserted so it appears in the output stream every

Cl 119 SC 119.2.4.4.2 P 151 L 35 # 345  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

Two ways should be written in a parallel form.

SuggestedRemedy

Make a new paragraph starting at "For a 10280-bit block".  
Remove an empty line after "group inserted:" to make it a single paragraph.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.4.4.2 P 153 L 37 # 13  
Gorshe, Steve Microsemi Corp

Comment Type ER Comment Status D

Figure 119-5 is incorrect in that it shows all the AM values within a single FEC word. In fact, per Figure 119-10, the AM values are split across the FEC words output from encoders A and B.

SuggestedRemedy

Rather than showing a single FEC block for Figure 119-5, use two blocks side-by-side showing how the AM values divide across the two. A proposed revised figure will be sent to the editor in a separate file.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending presentation and discussion in the task force.

[Editor's note:

Attachment is gorshe\_3bs\_01\_0916.pdf in  
[http://www.ieee802.org/3/bs/comments/P802d3bs\\_D2p0\\_attachments.zip](http://www.ieee802.org/3/bs/comments/P802d3bs_D2p0_attachments.zip)]

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Cl 119 SC 119.2.4.4.2 P 153 L 37 # 11  
Gorshe, Steve Microsemi Corp

Comment Type E Comment Status D

In Figure 119-5, the transmission order of the 10-bit symbols is not obvious. With careful reading of the text, it becomes apparent that the transmission is by column and then by row. Since telecommunications systems standards typically illustrate transmission by row and then by column, it would be very helpful to the reader to add arrows to indicate the transmission order being used here.

*SuggestedRemedy*

Add some arrows to Figure 119-5 to illustrate the symbol transmission order. A proposed revised figure will be sent to the editor in a separate file.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending presentation and discussion in the task force.

[Editor's note: Attachment is gorshe\_3bs\_01\_0916.pdf in  
[http://www.ieee802.org/3/bs/comments/P802d3bs\\_D2p0\\_attachments.zip](http://www.ieee802.org/3/bs/comments/P802d3bs_D2p0_attachments.zip)]

Cl 119 SC 119.2.4.4.2 P 154 L 2 # 14  
Gorshe, Steve Microsemi Corp

Comment Type ER Comment Status D

Figure 119-6 is incorrect in that it shows all the AM values within a single FEC word. In fact, per Figure 119-11, the AM values are split across the FEC words output from encoders A and B.

*SuggestedRemedy*

Rather than showing a single FEC block for Figure 119-6, use two blocks side-by-side showing how the AM values divide across the two. A proposed revised figure will be sent to the editor in a separate file.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending presentation and discussion in the task force.

[Editor's note: Attachment is gorshe\_3bs\_01\_0916.pdf in  
[http://www.ieee802.org/3/bs/comments/P802d3bs\\_D2p0\\_attachments.zip](http://www.ieee802.org/3/bs/comments/P802d3bs_D2p0_attachments.zip)]

Cl 119 SC 119.2.4.4.2 P 154 L 2 # 12  
Gorshe, Steve Microsemi Corp

Comment Type E Comment Status D

In Figure 119-6, the transmission order of the 10-bit symbols is not obvious. With careful reading of the text, it becomes apparent that the transmission is by column and then by row. Since telecommunications systems standards typically illustrate transmission by row and then by column, it would be very helpful to the reader to add arrows to indicate the transmission order being used here.

*SuggestedRemedy*

Add some arrows to Figure 119-6 to illustrate the symbol transmission order. A proposed revised figure will be sent to the editor in a separate file.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending presentation and discussion in the task force.

[Editor's note: Attachment is gorshe\_3bs\_01\_0916.pdf in  
[http://www.ieee802.org/3/bs/comments/P802d3bs\\_D2p0\\_attachments.zip](http://www.ieee802.org/3/bs/comments/P802d3bs_D2p0_attachments.zip)]

Cl 119 SC 119.2.4.4.2 P 154 L 41 # 529  
Nicholl, Gary Cisco Systems

Comment Type TR Comment Status D

The text and curly bracket is technically incorrect.

*SuggestedRemedy*

The curly bracket should be changed to only include the 257-bit blocks "between" the AM blocks, and the text should be changed to read "81 919 x 257-bit blocks between AM insertions" or "81 919 x 257-bit blocks between alignment markers" The second option is consistent with CL82.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to #562

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Cl 119 SC 119.2.4.4.2 P 154 L 44 # 562  
 Wertheim, Oded Mellanox Technologie

Comment Type E Comment Status D

The drawing in Figures 119-7, 119-8 is correct but the description in 119-7 "81 920 x 257-bit blocks between AM insertions" may be misinterpreted since there are  $(81\,920 - 4) \times 257$ -bit blocks between insertions.

SuggestedRemedy

Change the text in Figure 119-7 to "81 920 x 257-bit blocks between the beginning of successive AMs"  
 Change the text in Figure 119-8 to "163 840 x 257-bit blocks between the beginning of successive AMs"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.4.2 P 155 L 23 # 530  
 Nicholl, Gary Cisco Systems

Comment Type TR Comment Status D

The text and curly bracket is technically incorrect.

SuggestedRemedy

The curly bracket should be changed to only include the 257-bit blocks "between" the AM blocks, and the text should be changed to read "163 839 x 257-bit blocks between AM insertions" or "163 839 x 257-bit blocks between alignment markers". The second option is consistent with CL82.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to #562

Cl 119 SC 119.2.4.5 P 155 L 32 # 346  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Distributing the data to two FEC code words is a mandatory feature for TF5 of PICS.

SuggestedRemedy

Change "performs" in front of "a 10-bit symbol round robin distribution" with "shall perform".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.5 P 155 L 37 # 46  
 Ran, Adee Intel

Comment Type T Comment Status D

The variables m\_A and m\_B appear here without definition or explanation of what they mean.

The text in the first paragraph explains the process but does not use the terms m\_A and m\_b. This makes it somewhat difficult to connect the text with the "equation".

A reference to figure 119-10 would also be helpful.

SuggestedRemedy

In the first paragraph, change "...to form two 514-symbol FEC messages, which are subsequently each encoded by the RS FEC."

to "...to form two 514-symbol FEC messages, m\_A and m\_B, which are subsequently each encoded by the PCS FEC, as illustrated in Figure 119-10."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In the first paragraph, change "...to form two 514-symbol FEC messages, which are subsequently each encoded by the RS FEC."

to "...to form two 514-symbol FEC messages, m\_A and m\_B, which are subsequently each encoded by the RS FEC"

Cl 119 SC 119.2.4.8 P 159 L 1 # 47  
 Ran, Adee Intel

Comment Type E Comment Status D Bucket

This subclause and the figure describe not only the transmit bit ordering, but also the various bit distribution and interleaving.

SuggestedRemedy

In the subclause and figure titles and the text, change "bit ordering" to "bit ordering and distribution".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In the subclause and figure titles change "bit ordering" to "bit ordering and distribution".

On line 3 change:

"transmit bit ordering is illustrated" to:

"transmit bit ordering and distribution are illustrated"

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Cl 119 SC 119.2.4.8 P 159 L 24 # 531  
 Nicholl, Gary Cisco Systems  
 Comment Type ER Comment Status D Bucket  
 MAk-1. Since we are using a fixed RS(544,514) FEC, then the value of k is known and fixed, i.e k=514.It would be easier to read/understand if 514 was substituted for k in the diagram, i.e. MAk-1 becomes MA513, etc.  
 SuggestedRemedy  
 Substitute k=514 in the diagram.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.8 P 160 L 24 # 534  
 Nicholl, Gary Cisco Systems  
 Comment Type ER Comment Status D Bucket  
 MAk-1. Since we are using a fixed RS(544,514) FEC, then the value of k is known and fixed, i.e k=514.It would be easier to read/understand if 514 was substituted for k in the diagram, i.e. MAk-1 becomes MA513, etc.  
 SuggestedRemedy  
 Substitute k=514 in the diagram.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.8 P 159 L 32 # 532  
 Nicholl, Gary Cisco Systems  
 Comment Type ER Comment Status D Bucket  
 Should show CA543=MA513, CA542=MA512, etc .  
 SuggestedRemedy  
 Show CA543=MA513, CA542=MA512, etc throughout diagram  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.8 P 160 L 32 # 535  
 Nicholl, Gary Cisco Systems  
 Comment Type ER Comment Status D Bucket  
 Should show CA543=MA513, CA542=MA512, etc .  
 SuggestedRemedy  
 Show CA543=MA513, CA542=MA512, etc throughout diagram  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.8 P 159 L 35 # 533  
 Nicholl, Gary Cisco Systems  
 Comment Type ER Comment Status D Bucket  
 CA2t-1. We are using a single FEC in this clause and the value of t is known. It would be easier to read/understand if 15 was substituted for t throughout the diagram, i.e. CA2t-1 becomes cA29 and PA2t-1 becomes PA29.  
 SuggestedRemedy  
 Substitute t=15 in the diagram.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.4.8 P 160 L 35 # 536  
 Nicholl, Gary Cisco Systems  
 Comment Type ER Comment Status D Bucket  
 CA2t-1. We are using a single FEC in this clause and the value of t is known. It would be easier to read/understand if 15 was substituted for t throughout the diagram, i.e. CA2t-1 becomes cA29 and PA2t-1 becomes PA29.  
 SuggestedRemedy  
 Substitute t=15 in the diagram.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.



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Cl 119 SC 119.2.4.9 P 161 L 3 # 347  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Generating a scrambled idle test pattern is a mandatory feature for JT1 of PICS.

SuggestedRemedy

Change "PCS has" with "PCS shall have".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.4.9 P 161 L 6 # 348  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

It is not clear whether the alignment markers are inserted or not in the test-pattern mode.  
 I think it should be so that the receive PCS can align and deskew the PCS lanes.

SuggestedRemedy

Change "transcoded, scrambled and encapsulated by the FEC" with "transcoded, scrambled, inserted with alignment makers, and encapsulated by the FEC".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

This is sent continuously and is transcoded, scrambled and encapsulated by the FEC.

To:

The test pattern is sent continuously and is transcoded, scrambled, alignment markers are inserted and finally encapsulated by the FEC.

Cl 119 SC 119.2.5.2 P 161 L 37 # 349  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

It is not clear what is "proper order".

SuggestedRemedy

Change "in the proper order" with "in the proper order based on PCS\_lane\_mapping<x> assigned in 2\_GOOD state of the alignment marker lock state diagram (see Figure 119-12)".

Proposed Response Response Status W

PROPOSED REJECT.

It is clear as currently worded.

Cl 119 SC 119.2.5.3 P 161 L 45 # 48  
 Ran, Adees Intel

Comment Type TR Comment Status D

There is no RS-FEC sublayer in this amendment. This is part of the decoder functionality.

Also in the fifth paragraph, P162 L6.

SuggestedRemedy

Change "The RS-FEC sublayer" to "the FEC decoder", in both places.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change :

The RS-FEC sublayer shall

to:

The Reed-Solomon decoder shall

And Change:

the RS-FEC sublayer to reduce

to:

the Reed-Solomon decoder to reduce

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CI 119 SC 119.2.5.3 P 161 L 52 # 34  
 Ran, Adeo Intel

Comment Type TR Comment Status D

"it shall ensure that (...) the synchronization header for all 66-bit blocks (...) is set to 11"

In this architecture the FEC is part of the PCS, not a separate sublayer, so the synchronization header is internal to the PCS and does not appear on any interface. Thus, the normative requirement is on unobservable behavior.

The observable behavior is that all 200GMII/400GMII blocks included in the received codeword are replaced with EBLOCK\_R. The "shall" should refer to this behavior.

Similarly in the 5th paragraph of this subclause.

*SuggestedRemedy*

Replace this paragraph (3rd) with the following:

"If the bypass indication feature is not supported or not enabled, when the Reed-Solomon decoder determines that a codeword contains errors that were not corrected, it shall cause the PCS receive function to mark all 160 200GMII/400GMII blocks that contain data from either the uncorrected codeword or the codeword it is interleaved with, as error (set to EBLOCK\_R). This may be achieved by setting the synchronization header to 11 for all 66-bit blocks created from these codewords by the 256B/257B to 64B/66B transcoder."

Replace the 5th paragraph with the following:

"If the bypass indication feature is supported and enabled, additional error monitoring is performed to reduce the likelihood that errors in a packet are not detected. The Reed-Solomon decoder counts the number of symbol errors detected in consecutive non-overlapping blocks of 8192 codewords. When the number of symbol errors in a block of 8192 codewords exceeds 5560, the Reed-Solomon decoder shall cause the PCS receive function to mark all 200GMII/400GMII blocks as error (set to EBLOCK\_R) for a period of 60 ms to 75 ms."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

The Reed-Solomon decoder indicates errors to the 64B/66B decoder by intentionally corrupting 66-bit block synchronization headers. When the Reed-Solomon decoder determines that a codeword contains errors that were not corrected (and the bypass indication feature is not supported or not enabled), it shall ensure that, for every 257-bit block within the two associated codewords, the synchronization header for all 66-bit blocks at the output of the 256B/257B to 64B/66B transcoder, rx\_coded\_j<1:0> for j=0 to 3, is set to 11. This causes the PCS to mark (set to EBLOCK\_R) all blocks that contain data from the uncorrected codeword.

To:

If bypass error indication is not supported or not enabled, when the Reed-Solomon

decoder determines that a codeword contains errors that were not corrected, it shall cause the PCS receive function to set every 66-bit block within the two associated codewords to an error block (set to EBLOCK\_R). This may be achieved by setting the synchronization header to 11 for all 66-bit blocks created from these codewords by the 256B/257B to 64B/66B transcoder.

And change:

When FEC\_bypass\_indication\_enable is asserted, additional error monitoring is performed by the RS-FEC sublayer to reduce the likelihood that errors in a packet are not detected.

The Reed-Solomon decoder counts the number of symbol errors detected on all PCS lanes in consecutive non-overlapping blocks of 8192 codewords. When the number of symbol errors in a block of 8192 codewords exceeds 5560, the Reed-Solomon decoder shall cause synchronization header rx\_coded<1:0> of each subsequent 66-bit block that is delivered to the PCS decoder to be assigned a value of 11 for a period of 60 ms to 75 ms.

To:

When FEC\_bypass\_indication\_enable is asserted, additional error monitoring is performed by the Reed-Solomon decoder to reduce the likelihood that errors in a packet are not detected. The Reed-Solomon decoder counts the number of symbol errors detected on all PCS lanes in consecutive non-overlapping blocks of 8192 codewords. When the number of symbol errors in a block of 8192 codewords exceeds 5560, the Reed-Solomon decoder shall cause the PCS receive function to set every 66-bit block to an error block (set to EBLOCK\_R) for a period of 60 ms to 75 ms. This may be achieved by setting the synchronization header to 11 for all 66-bit blocks created by the 256B/257B to 64B/66B transcoder for this time period.

CI 119 SC 119.2.5.3 P 162 L 14 # 156  
 Dudek, Mike Cavium

Comment Type E Comment Status D

I believe this is the first use of SER in this clause. SER isn't listed in the abbreviations in sub clause 1.5.

*SuggestedRemedy*

Replace "SER" with "RS-FEC symbol error ratio(SER)" here. Add SER - RS-FEC Symbol Error Ratio to the abbreviations in sub clause 1.5

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #35

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CI 119 SC 119.2.5.3 P 162 L 14 # 35  
 Ran, Adee Intel

Comment Type T Comment Status D

SER is not a defined acronym and "symbol error ratio" is not defined anywhere. In previous clauses, "ser" was only used in as part of variable name and in corresponding register names. Compare to 91.5.3.3, 91.6.5, 108.5.3.2 and 108.6.6.

It would be preferable to avoid using the term "symbol error ratio" and instead describe the intended functionality, as done in other features here and in the referenced precedent subclauses. The actual behavior is specified in the next paragraph anyway

*SuggestedRemedy*

Change  
 "The Reed-Solomon decoder may optionally provide a FEC degrade function with the ability to signal the presence of a degraded SER."  
 to  
 "The Reed-Solomon decoder may optionally provide the ability to signal a degradation of the received signal."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 119 SC 119.2.5.3 P 162 L 15 # 96  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

Missing 3rd sentence of the "optional feature" template for degrade\_SER

*SuggestedRemedy*

Add the end of the paragraph that introduces FEC\_degrade\_SER feature. "When the option is provided it is enabled by the assertion of the FEC\_degraded\_SER\_enable variable (see 119.3)" and remove the (see 119.3) from the next paragraph for the FEC\_degraded\_SER\_enable

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 119 SC 119.2.5.3 P 162 L 17 # 44  
 Ran, Adee Intel

Comment Type T Comment Status D

The current "FEC degrade" function provides only a binary indication of exceeding a threshold, and its behavior depends on setting of multiple parameters. Analysis of its expected performance detailed use cases were not demonstrated.

Even if we assume stationary noise conditions, exceeding a threshold is a random event, and with settings intended to identify "degradation" this may happen occasionally in healthy links and cause false alarms. In practice noise conditions may be far from stationary and cause very erratic behavior. Accurate analysis may be impractical.

It is desirable to provide more detailed symbol error statistics that would enable online indication of received signal "health" to the link partner. Criteria for defining "degradation" can then be more robust, and this would enable various application-specific methods.

*SuggestedRemedy*

A detailed presentation is planned.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

No Remedy is proposed, pending presentaiton in the task force.

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CI 119 SC 119.2.5.3 P 162 L 17 # 40  
 Ran, Adeel Intel

Comment Type TR Comment Status D

FEC\_degraded\_SER\_interval, FEC\_degraded\_SER\_assert\_threshold and FEC\_degraded\_SER\_deassert\_threshold defined here do not have default values. In addition, all three are 32-bit long.

This enables a huge number of combinations of interval and threshold values. Only a small part of these combinations makes sense; for example, any threshold larger than 544\*FEC\_degraded\_SER\_interval would be inherently invalid. Additionally, both threshold values should be less than 15\*FEC\_degraded\_SER\_interval, otherwise the indication of degradation would only occur after at least one complete codeword in the period is uncorrectable; and the assert threshold should be higher than the deassert threshold.

There should be default values for all three variables, and a recommendation for setting them together.

Also, the parameters and scenarios should be analyzed to show the mean time to assert/deassert, and check whether this feature is useful or not. I am planning a presentation for that.

SuggestedRemedy

Specify default values as follows:

- FEC\_degraded\_SER\_interval: default 8192 (as when indication is bypass)
- FEC\_degraded\_SER\_assert\_threshold: default 5560 (MTTFPA or uncorrectable codeword concern).
- FEC\_degraded\_SER\_deassert\_threshold: default 5000 (very healthy link)

Add text to indicate that unless the threshold values are set such that the assert threshold is higher than the deassert threshold, the behavior is unspecified (or degradation always asserted - see other comment)

Add as a note (informative) that in typical use, both values should be lower than the interval value.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending a presentation in the task force.

CI 119 SC 119.2.5.3 P 162 L 17 # 103  
 Slavick, Jeff Broadcom

Comment Type TR Comment Status D

For the FEC\_degrade\_SER function assumed you want to assert the indicator as soon as you exceed the threshold, but clear on the first interval that's below. Also the text does not align with the MDIO registers names

SuggestedRemedy

When FEC\_degraded\_SER\_enable is asserted, additional error monitoring is performed by the PCS. The Reed-Solomon decoder counts the number of symbol errors detected on all PCS lanes in consecutive non-overlapping blocks of FEC\_degraded\_SER\_interval (see 119.3) codewords. When the number of symbol errors exceeds the threshold set in FEC\_degraded\_SER\_activate\_threshold (see 119.3) the FEC\_degraded\_SER bit (see 119.3) is set. At the end of each interval, if the number of symbol errors is less than FEC\_degraded\_SER\_deactivate\_threshold the FEC\_degraded\_SER bit is cleared. If either FEC\_degraded\_SER\_ability or FEC\_degraded\_SER\_enable is de-asserted than FEC\_degraded\_SER bit is cleared.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change this:

When FEC\_degraded\_SER\_enable (see 119.3) is asserted, additional error monitoring is performed by the PCS. The Reed-Solomon decoder counts the number of symbol errors detected on all PCS lanes in consecutive non-overlapping blocks of FEC\_degraded\_SER\_interval (see 119.3) codewords. When the number of symbol errors in this interval exceeds the threshold set in FEC\_degraded\_SER\_assert\_threshold (see 119.3) and the FEC\_degraded\_SER bit (see 119.3) is clear, the Reed-Solomon decoder asserts the FEC\_degraded\_SER bit. If the FEC\_degraded\_SER bit is set and there are fewer than FEC\_degraded\_SER\_deassert\_threshold (see 119.3) symbol errors in the interval, then the FEC\_degraded\_SER bit is cleared. If the FEC degraded option is not present, the FEC\_degraded\_SER bit is cleared.

To this:

When FEC\_degraded\_SER\_enable is asserted, additional error monitoring is performed by the PCS. The Reed-Solomon decoder counts the number of symbol errors detected on all PCS lanes in consecutive non-overlapping blocks of FEC\_degraded\_SER\_interval (see 119.3.1) codewords. When the number of symbol errors exceeds the threshold set in FEC\_degraded\_SER\_activate\_threshold (see 119.3.1), the FEC\_degraded\_SER bit (see 119.3.1) is set. At the end of each interval, if the number of symbol errors is less than FEC\_degraded\_SER\_deactivate\_threshold, the FEC\_degraded\_SER bit is cleared. If either FEC\_degraded\_SER\_ability or FEC\_degraded\_SER\_enable is de-asserted then the FEC\_degraded\_SER bit is cleared.

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Cl 119 SC 119.2.5.3 P 162 L 17 # 37  
 Ran, Adee Intel

Comment Type ER Comment Status D

Cross reference seems incorrect - 119.3 does not mention FEC\_degraded\_SER\_enable.

Also in lines 19, 20, 21, 23 (other variables).

Should it be 119.3.1? This subclause only lists the MDIO mapping, but does not describe the variables. The descriptions are given only in clause 45 and are hard to find.

SuggestedRemedy

Either add the descriptions from clause 45 to 119.3.1 and change the cross reference to 119.3.1, or point directly to the relevant subclauses of clause 45, or remove the cross references.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to #103

Cl 119 SC 119.2.5.5 P 162 L 34 # 561  
 Wertheim, Oded Mellanox Technologie

Comment Type E Comment Status D Bucket

The alignment markers removal is performed after the post FEC interleaving, and therefore it's more clear to base the description on transcoding blocks and not codewords as done in the alignment markers insertion (119.2.4.4) and depicted in figures 119-7 / 119-8.

SuggestedRemedy

Replace: "For the 200GBASE-R PCS, every 4096th codewords"  
 With: "For the 200GBASE-R PCS, every 81920 x 257-bit blocks (corresponds to 4096 codewords)"

Replace: "For the 400GBASE-R PCS, every 8192nd codewords"  
 With: "For the 400GBASE-R PCS, every 163840 x 257-bit blocks (corresponds to 8192 codewords)"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.5.6 P 162 L 50 # 350  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

It is not good to call rx\_xcoded<256:0> as "payload", because rx\_xcoded<0> is a tag bit and the actual "payload" is rx\_xcoded<256:1>.

SuggestedRemedy

Change "payload" with "received 257-bit block".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.5.6 P 162 L 50 # 353  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Descrambler is a mandatory feature for S2 of PICS, but "shall" is missing.

SuggestedRemedy

Change "is descrambled" with "shall be descrambled".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.2.5.6 P 162 L 53 # 351  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The descrambler in 49.2.10 descrambles only the payload of the block, whereas the descrambler in this clause descrambles the whole 257-bit block, not only the payload.

SuggestedRemedy

Replace the second sentence in 119.2.5.6 as follows:

The descrambler is identical to that used in Clause 49 excepting that the whole 257-bit block is descrambled instead of the payload. See 49.2.10 for the definition of the descrambler.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

The descrambler is identical to that used in Clause 49, see 49.2.10 for the definition.

To:

The scrambler polynomial is identical to that in Clause 49, see Equation (49-1) for the definition of the polynomial.

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CI 119 SC 119.2.5.8 P 163 L 51 # 42  
 Ran, Adee Intel

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

Style manual: "use of the word must is deprecated and shall not be used when stating mandatory requirements; must is used only to describe unavoidable situations"

This is a mandatory requirement, not an unavoidable situation, and it is easily verifiable.

*SuggestedRemedy*

Change "must" to "shall", add PICS item.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See the response to #94

CI 119 SC 119.2.5.8 P 163 L 51 # 94  
 Trowbridge, Steve Nokia

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

There are circumstances where the Rx PCS does not insert any idles when removing AMs, e.g., when no rate matching is necessary such as delivering packets to an NPU, or when the reduction in bit-rate from rate matching exceeds the amount of space occupied by the AMs.

*SuggestedRemedy*

Change "The receive PCS must insert idle control characters to compensate for the removal of alignment markers" to "The receive PCS may insert idle control characters to compensate for the removal of alignment markers"

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 119 SC 119.2.5.9 P 164 L 5 # 43  
 Ran, Adee Intel

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

(nonexistent subclause)

A "receive ordering" subclause and especially a matching diagram is missing here (as in Figure 91-7, Figure 108-5).

*SuggestedRemedy*

Create suitable figures for 200G and 400G received bit ordering and add them in a new subclause.

Proposed Response Response Status **W**

PROPOSED REJECT.

Since receive ordering is the exact reverse of transmit this is not necessary.

CI 119 SC 119.2.6.2.2 P 165 L 11 # 354  
 Hidaka, Yasuo Fujitsu Lab of America

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

"The PCS alignment process" is not defined.

*Bucket*

*SuggestedRemedy*

Change "the PCS alignment process" with "the PCS synchronization process".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 119 SC 119.2.6.2.2 P 165 L 12 # 355  
 Hidaka, Yasuo Fujitsu Lab of America

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

"The deskew process" is not defined.

*Bucket*

*SuggestedRemedy*

Change "the deskew process" with "the PCS synchronization process".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

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Cl 119 SC 119.2.6.2.2 P 165 L 31 # 364  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D  
 A variable PCS\_lane\_mapping<x> is used in 2\_GOOD state of alignment marker lock state diagram, but it is not defined.

SuggestedRemedy  
 Add a definition of PCS\_lane\_mapping<x> after pcs\_lane something like:

PCS\_lane\_mapping<x>  
 A variable that holds the value of pcs\_lane.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.6.2.2 P 165 L 42 # 357  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 It seems that this is not to reset the synchroization process.

SuggestedRemedy  
 Change "reset the synchronization process" with "restart the alignment marker lock process".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.6.2.2 P 165 L 42 # 356  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 "The PCS alignment process" is not defined.

SuggestedRemedy  
 Change "the PCS alignment process" with "the PCS synchronization process".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.6.2.2 P 166 L 8 # 358  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 SLIP is not requested by "the synchronization state diagram", but requested by "the alignment marker lock state diagram".

SuggestedRemedy  
 Change "the synchronization state digaram" with "the alignment marker lock state diagram".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.2.6.2.3 P 166 L 34 # 359  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D  
 It is not correct to send tx\_coded<65:2> to the scrambler or to bypass the sync header.

SuggestedRemedy  
 Change "of which tx\_coded<65:2> is sent to the scrambler. The two bits of the sync header bypass the scrambler." with "which is sent to the 64B/66B to 256B/257B transcoder".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change:  
 Encodes the 72-bit vector returning tx\_coded<65:0> of which tx\_coded<65:2> is sent to the scrambler. The two bits of the sync header bypass the scrambler.  
 To:  
 Encodes the 72-bit vector returning tx\_coded<65:0>.

Cl 119 SC 119.2.6.3 P 168 L 6 # 360  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 It may be discouraged to write "the number of the PCS lane", because it is easy to be confused with "the number of the PCS lanes", which I believe not correct.

SuggestedRemedy  
 Change "the number of PCS lane" with "the PCS lane number".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

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CI 119 SC 119.2.6.3 P 168 L 13 # 361  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

There is no synchronization lock. Also, what is restarted is "process", not "lock".

SuggestedRemedy

Change "Synchronization lock, along with alignment marker lock, are restarted" with "Synchronization process, along with alignment marker lock process, are restarted".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

Synchronization lock, along with alignment marker lock, are restarted

To:

The synchronization process, along with the alignment marker lock process, are restarted

CI 119 SC 119.2.6.3 P 168 L 17 # 362  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

It is not clear which block is processed, e.g. 64B66B block or 256B257B block.

SuggestedRemedy

Change "for each transmit block processed" with "for each transfer on the 200GMII/400GMII interface in the transmit direction".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

The Transmit state diagram shown in Figure 119-14 controls the encoding of transmitted blocks. It makes

exactly one transition for each transmit block processed.

To:

The Transmit state diagram shown in Figure 119-14 controls the encoding of 66-bit transmitted blocks. It makes

exactly one transition for each 66-bit transmit block processed.

CI 119 SC 119.2.6.3 P 168 L 22 # 363  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

It is not clear which block is processed, e.g. 64B66B block or 256B257B block.

SuggestedRemedy

Change "for each transmit block processed" with "for each transfer on the 200GMII/400GMII interface in the receive direction".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

It makes exactly one transition for each receive block processed.

To:

It makes exactly one transition for each receive 66-bit block processed.

CI 119 SC 119.2.6.3 P 169 L 1 # 67  
 Gustlin, Mark Xilinx

Comment Type T Comment Status D

Currently the alignment marker lock SM does not continuously monitor the AMs after reaching the locked state, instead lock is restarted only when 3 FEC codewords in a row are not correctable. This leaves the SM vulnerable to a case where the Ethernet signal is transported by an OTN network, and under some fault conditions on the far end of the network the AM location might change and not be detected by the receiver. This can lead to continuously corrupted data being received.

SuggestedRemedy

The proposed changes to figure 119-13 are included in gustlin\_3bs\_01\_0916. We now look for correct AMs on all lanes after lock, and if 5 are found to not match expectations (pre FEC correction) on a given lane, then lock is restarted.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending the presentation in the task force.



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Cl 119 SC 119.2.6.3 P 169 L 39 # 115  
 Chacon, Geoffrey HPE

Comment Type E Comment Status D  
 Variable PCS\_lane\_mapping<x> does not have a definition in 119.2.6.2 State Variables

SuggestedRemedy  
 Add a definition for PCS\_lane\_mapping. This variable does not seem to be used anywhere else, but it is needed by the lane reorder logic.

PCS\_lane\_mapping<x>  
 A variable that holds the index of the for the lane received by the alignment marker state machine x to be used by the PCS lane reorder function.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to #364

[Editor's note: Subclause changed from 119-12 to 119.2.6.3]

Cl 119 SC 119.3 P 173 L 4 # 55  
 Laubach, Mark Broadcom Limited

Comment Type E Comment Status D Bucket  
 Missing a period at end of sentence. Add the period.

SuggestedRemedy  
 As per comment.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.3 P 173 L 4 # 365  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 A grammer error.

SuggestedRemedy  
 Change "be provided" with "is provided".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.3.1 P 174 L 23 # 366  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 A range of the lane number should not include an unspecified index variable "i".

SuggestedRemedy  
 Change "lane 0 to i" with "lane 0 to 15" in the column of MDIO status variable and the column of PCS register name.

Proposed Response Response Status W  
 PROPOSED REJECT.

It is left as 'i' since it represents 7 (for 200G) and 15 (for 400G).

Cl 119 SC 119.6.3 P 177 L 6 # 87  
 Trowbridge, Steve Nokia

Comment Type E Comment Status D Bucket  
 The "Support" column is ragged. The first few rows have the entries centered, and later on they are left aligned.

SuggestedRemedy  
 Use a consistent alignment for the support column

Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 119 SC 119.6.3 P 177 L 6 # 367  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

The item name "CDE200" is inconsistent with PICS in other clauses.

The following item names are used for GMII support in other clauses:

- XGE XGMII is supported (Clause 48)
- XGE XGMII is supported (Clause 49)
- XGE XGMII is supported (Clause 55)
- XGE40 XLGMII is supported (Clause 82)
- XGE100 CGMII is supported (Clause 82)
- 25GE 25GMII is supported (Clause 107)

*SuggestedRemedy*

Change the item column for CDE200 from "CDE200" to "200GE".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace CDE200 and CDE400 with:

- MII
- Feature: 200GMII or 400GMII logical interface
- Subclause: 117, 119.1.4.1
- Value: Logical interface is supported
- Status: O
- Support: Yes  No

Cl 119 SC 119.6.3 P 177 L 8 # 368  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

The item name "CDE400" is inconsistent with PICS in other clauses.

The following item names are used for GMII support in other clauses:

- XGE XGMII is supported (Clause 48)
- XGE XGMII is supported (Clause 49)
- XGE XGMII is supported (Clause 55)
- XGE40 XLGMII is supported (Clause 82)
- XGE100 CGMII is supported (Clause 82)
- 25GE 25GMII is supported (Clause 107)

*SuggestedRemedy*

Change the item column for CDE400 from "CDE400" to "400GE".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #367

Cl 119 SC 119.6.3 P 177 L 24 # 369  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

A reference to 119.6.5 is inappropriate, because 119.6.5 is a PICS clause.

*SuggestedRemedy*

Change the subclause column for JTM from "119.6.5" to "119.2.1".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.6.3 P 177 L 25 # 370  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

JTM is mandatory.

*SuggestedRemedy*

Remove "No

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.6.4.2 P 178 L 22 # 371  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

RF5 is mandatory only if BI is supported.

*SuggestedRemedy*

Add "N/A

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 119 SC 119.6.4.2 P 178 L 27 # 372  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

RF6 is mandatory only if BI is supported.

*SuggestedRemedy*

Change "No

Proposed Response Response Status W

PROPOSED ACCEPT.



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Cl 119 SC 119.6.4.4 P 179 L 37 # 378  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Scrambler is mandatory.  
 SuggestedRemedy  
 Remove "No []" from the support column for S1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.4.5 P 180 L 12 # 382  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 AM3 is mandatory only if MD is supported.  
 SuggestedRemedy  
 Change "No []" with "N/A []" in the support column for AM3.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.4.4 P 179 L 39 # 379  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Descrambler is mandatory.  
 SuggestedRemedy  
 Remove "No []" from the support column for S2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.4.5 P 180 L 13 # 383  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D  
 Alignment marker shall be removed prior to descrambling (119.2.5.5, P162, L46).  
 SuggestedRemedy  
 Insert the following item after AM3:  
  
 Item: AM4  
 Feature: Alignment marker removal  
 Subclause: 119.2.5.5  
 Value/Comment: Alignment markers are removed prior to descrambling as described in 119.2.5.5  
 Status: M  
 Support: Yes []  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.4.5 P 180 L 7 # 380  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 AM1 is mandatory.  
 SuggestedRemedy  
 Remove "No []" from the support column for AM1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.5 P 180 L 21 # 384  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 JT1 is mandatory.  
 SuggestedRemedy  
 Remove "No []" and "N/A []" from the support column for JT1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.4.5 P 180 L 10 # 381  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 AM2 is mandatory.  
 SuggestedRemedy  
 Remove "No []" from the support column for AM2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 119 SC 119.6.5.1 P 180 L 26 # 387  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 It is odd to have "119.6.5.1 Bit order" as a sub clause of "119.6.5 Test-pattern modes".  
 SuggestedRemedy  
 Raise the level of subclause "119.6.5.1 Bit order", and renumber subclauses.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6.1 P 181 L 7 # 390  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 SM1 is mandatory for PCS200.  
 SuggestedRemedy  
 Change "No []" in the support column for SM1 with "N/A []".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.5.1 P 180 L 32 # 385  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 B1 is mandatory.  
 SuggestedRemedy  
 Remove "No []" from the support column for B1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6.1 P 181 L 10 # 391  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 SM2 is mandatory for PCS400.  
 SuggestedRemedy  
 Change "No []" in the support column for SM2 with "N/A []".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6 P 180 L 44 # 388  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Mapping of MDIO register bits are mandatory.  
 SuggestedRemedy  
 Insert the following items after M1:  
 Item: M2  
 Feature: Mapping of MDIO control bits and MDIO status bits  
 Sub clause: 119.3.1  
 Value/Comment: Table 119-4 and Table 119-5  
 Status: MD:M  
 Support: Yes [] N/A []  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6.1 P 181 L 13 # 389  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 The SLIP functions evaluates all possible block "positions" rather than all possible "blocks".  
 SuggestedRemedy  
 Change the feature column for SM3 from "The SLIP function evaluates all possible blocks" to "The SLIP function evaluates all possible block positions".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6.1 P 181 L 13 # 392  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 SM3 through SM6 are mandatory.  
 SuggestedRemedy  
 Remove "No []" in the support column for SM3 through SM6.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 119 SC 119.6.6.2 P 181 L 29 # 394  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 L1 is mandatory.  
 SuggestedRemedy  
 Remove "No []" and "N/A []" in the support column for L1.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6.2 P 181 L 33 # 395  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 L2 is mandatory.  
 SuggestedRemedy  
 Remove "No []" in the support column for L2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119 SC 119.6.6.2 P 181 L 34 # 393  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 When the PCS is in loopback, it shall ignore all data presented to it by the PMA sublayer.  
 SuggestedRemedy  
 Insert the following item after L2:  
 Item: L3  
 Feature: When in loopback, ignore all data presented by the PMA sublayer.  
 Subclause: 119.4  
 Status: M  
 Support: Yes []  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 119A SC 119A P 315 L 18 # 159  
 Dudek, Mike Cavium  
 Comment Type E Comment Status D Bucket  
 extra words.  
 SuggestedRemedy  
 Replace "stream of stream of" with "stream of"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change:  
 "resulting is a continuous stream of stream of" to:  
 "resulting in a continuous stream of"

Cl 119A SC 119A P 315 L 36 # 493  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 The sentence starting with "Immediately before the tx\_scrambled" until  
 "S<0:57>=24e6959d0fa5dbd" should appear earlier, because the scramble is done prior to  
 alignment marker insertion.

SuggestedRemedy  
 Move the sentence starting with "Immediately before the tx\_scrambled" until  
 "S<0:57>=24e6959d0fa5dbd" before the paragraph starting with "In this example" on line  
 22.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Remove the sentence starting with "Immediately before the tx\_scrambled" up to  
 "S<0:57>=24e6959d0fa5dbd"

On line 22 change:  
 "In this example, an alignment marker is due for insertion."  
 to:  
 "In this example, an alignment marker is due for insertion and the the scrambler seed (see  
 49.2.6) just before the first 257-bit block was scrambled was:

S<0:57> = 24e6959d0fa5dbd."

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**Cl 120**    **SC 120.1.2**                      **P 182**            **L 28**            # **396**  
Hidaka, Yasuo                                      Fujitsu Lab of America

**Comment Type**    **E**                      **Comment Status**    **D**                      *Bucket*  
A period is missing.

*SuggestedRemedy*  
Add a period.

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

**Cl 120**    **SC 120.1.4**                      **P 183**            **L 34**            # **397**  
Hidaka, Yasuo                                      Fujitsu Lab of America

**Comment Type**    **T**                      **Comment Status**    **D**  
MMD addresses 11 is also available for PMA.

*SuggestedRemedy*  
Change "1, 8, 9, and 10" with "1, 8, 9, 10, and 11".

**Proposed Response**                      **Response Status**    **W**  
PROPOSED REJECT.  
IEEE Std 802.3ba requires more PMA sublayers than P802.3bs: given the PPI, there is the possibility for the lowest PMA not to be co-packaged with the PMD, and there is the possibility of a separated FEC sublayer. The largest reasonable number of PMA sublayers for a P802.3bs implementation including the extender sublayer is four.

**Cl 120**    **SC 120.1.4**                      **P 183**            **L 39**            # **398**  
Hidaka, Yasuo                                      Fujitsu Lab of America

**Comment Type**    **T**                      **Comment Status**    **D**                      *Bucket*  
"Towards the PCS" is ambiguous, because some PMA for XS is between RS and PCS.

*SuggestedRemedy*  
Change "towards the PCS" with "towards the RS".

**Proposed Response**                      **Response Status**    **W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Change "toward the PCS" with "toward the MAC".  
Make the equivalent change in:  
45.2.1.116d page 55, line 35  
45.2.1.116e page 57, line 48  
120.5.3.4 page 191, line 40  
120.5.6.3 page 192, line 6

**Cl 120**    **SC 120.1.4**                      **P 183**            **L 41**            # **399**  
Hidaka, Yasuo                                      Fujitsu Lab of America

**Comment Type**    **T**                      **Comment Status**    **D**                      *Bucket*  
A description for 200GAUI-n is missing.

*SuggestedRemedy*  
Change "MMD 8 addressing the PMA sublayer above the 400GAUI-8 below the 400GAUI-16" with "MMD 8 addressing the PMA sublayer above the 200GAUI-4 below the 200GAUI-8 or above the 400GAUI-8 below the 400GAUI-16".

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

**Cl 120**    **SC 120.1.4**                      **P 184**            **L 47**            # **400**  
Hidaka, Yasuo                                      Fujitsu Lab of America

**Comment Type**    **T**                      **Comment Status**    **D**                      *Bucket*  
Maximum 5 PMA's (i.e MMD 1, 8, 9, 10, and 11) are addressable.

*SuggestedRemedy*  
Change "maximum of four" with "maximum of five".

**Proposed Response**                      **Response Status**    **W**  
PROPOSED REJECT.  
See comment 397

**Cl 120**    **SC 120.2**                                      **P 184**            **L 52**            # **401**  
Hidaka, Yasuo                                      Fujitsu Lab of America

**Comment Type**    **T**                      **Comment Status**    **D**                      *Bucket*  
The word "signals" in the sentence may be unnecessary and/or inappropriate.

*SuggestedRemedy*  
Remove "signals".

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

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CI 120 SC 120.2 P 184 L 53 # 402  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
A bit mux function is applied to input/output lanes, not input/output lane counts.  
SuggestedRemedy  
Change "lane counts" with "lanes".  
Proposed Response Response Status W  
PROPOSED REJECT.  
This sentence is describing the fact that the bit mux function is generic across all lane counts, i.e. it is the same function for an 8-lane PMA as it is for a 4-lane PMA. It is not saying that it is applied across all lanes.

CI 120 SC 120.2 P 185 L 1 # 403  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
If the input and the output have the same number of lanes, PMA does not have to employ any mux.  
SuggestedRemedy  
Change "employs" with "may employ".  
Proposed Response Response Status W  
PROPOSED ACCEPT.

CI 120 SC 120.2 P 185 L 48 # 404  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D Bucket  
A period is missing in a note in Figure 120-4.  
SuggestedRemedy  
Add a period after "an output PCSL position".  
Proposed Response Response Status W  
PROPOSED REJECT.  
This is not a note, it is text in a diagram.  
See Figure 83-4, in force since 2010.

CI 120 SC 120.2 P 186 L 9 # 405  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
Instead of PCS, the PMA may be adjacent to DTE 200GXS or DTE 400GXS.  
SuggestedRemedy  
Change "adjacent to the PCS" with "adjacent to the PCS, DTE 200GXS, or DTE 400GXS".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change "adjacent to the PCS" to "adjacent to the PCS or DTE XS"

CI 120 SC 120.2 P 186 L 10 # 406  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
Instead of PMD, the PMA may be adjacent to PHY 200GXS or PHY 400GXS.  
SuggestedRemedy  
Change "adjacent to the PMD" with "adjacent to the PMD, PHY 200GXS, or PHY 400GXS".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change "adjacent to the PMD" to "adjacent to the PMD or PHY XS"

CI 120 SC 120.2 P 186 L 42 # 407  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
DTE 200GXS or DTE 400GXS will not be below PMA.  
SuggestedRemedy  
Change "200GXS" with "PHY 200GXS".  
Change "400GXS" with "PHY 400GXS".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change "PMD, PMA, 200GXS, or 400GXS" to "PMD, PMA, or PHY\_XS"  
See also comment #195



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Cl 120 SC 120.3 P 187 L 10 # 408  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The primitives are defined for each PMA service interface, not for each PMA sublayer.

SuggestedRemedy

Change "For a PMA with p planes at the PMA service interface" with "For a PMA service interface with p planes".

Proposed Response Response Status W

PROPOSED REJECT.

The PMA service interface includes only the lanes above the PMA. The same PMA may have q lanes in the direction towards the PMD, which are not the lanes being described here.

Cl 120 SC 120.3 P 187 L 12 # 409  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

The PMA client may be DTE 200GXS or DTE 400GXS instead of PCS.

SuggestedRemedy

Change "PCS" with "PCS, DTE 200GXS, or DTE 400GXS" on line 12 and line 13.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "PCS" to "PCS or DTE XS"

Cl 120 SC 120.3 P 187 L 34 # 410  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The paragraph starting "In the Rx direction" is not well written. Double use of "that" is discouraged.

SuggestedRemedy

Rewrite the paragraph as follows:

In the Rx direction, when data is being received from the sublayer below the PMA on every input lane associated with an output lane, received bits are routed through the PMA to the output lane at the PMA service interface, and symbols are transferred over the output lane to the PMA client via the PMA:IS\_UNITDATA\_i.indication primitive.

If necessary, buffers are filled to allow tolerating the Skew Variation that may appear between the input lanes, PCSs are demultiplexed from the input lanes, remultiplexed to the output lanes, and PAM4 symbols are converted to pairs of bits on the input lanes and/or pairs of bits are converted to PAM4 symbols on the output lanes.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #157

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CI 120 SC 120.3 P 187 L 34 # 157  
 Dudek, Mike Cavium

Comment Type E Comment Status D

This is a very long sentence that is difficult to follow.

SuggestedRemedy

Change the sentence "In the Rx direction, when data is being received from every input lane from the sublayer below the PMA that has a PCSL that is routed to a particular output lane at the PMA service interface, and (if necessary), buffers are filled to allow tolerating the Skew Variation that may appear between the input lanes, PCSLs are demultiplexed from the input lanes, demultiplexed to the output lanes, and symbols are transferred over each output lane to the PMA client via the PMA:IS\_UNITDATA\_i.indication primitive."

to "In the Rx direction, when data is being received from every input lane from the sublayer below the PMA that has a PCSL that is routed to a particular output lane at the PMA service interface, PCSLs are demultiplexed from the input lanes, remultiplexed to the output lanes, and symbols are transferred over each output lane to the PMA client via the PMA:IS\_UNITDATA\_i.indication primitive. If necessary the received data fills buffers to allow tolerating the Skew Variation that may appear between the input lanes, "

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "In the Rx direction, when data is being received from every input lane from the sublayer below the PMA that has a PCSL that is routed to a particular output lane at the PMA service interface, and (if necessary), buffers are filled to allow tolerating the Skew Variation that may appear between the input lanes, PCSLs are demultiplexed from the input lanes, remultiplexed to the output lanes, and symbols are transferred over each output lane to the PMA client via the PMA:IS\_UNITDATA\_i.indication primitive."

to "The PMA passes symbols from the input lanes to the output lanes in the Rx direction when data is being received from every input lane from the sublayer below the PMA that has a PCSL that is routed to a particular output lane at the PMA service interface, and (if necessary), buffers are filled to allow tolerating the Skew Variation that may appear between the input lanes.

PCSLs are demultiplexed from the input lanes, remultiplexed to the output lanes, and symbols are transferred over each output lane to the PMA client via the PMA:IS\_UNITDATA\_i.indication primitive."

CI 120 SC 120.4 P 187 L 53 # 88  
 Trowbridge, Steve Nokia

Comment Type T Comment Status D Bucket

Should list the extender sublayer as a possible sublayer below the PMA

SuggestedRemedy

Change "including the PMD or another PMA" to "including the PMD, an extender sublayer, or another PMA"

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 120 SC 120.4 P 187 L 53 # 411  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

PHY 200GXS and PHY 400GXS may also appear below PMA.

SuggestedRemedy

Change "the PMD or another PMA" with "the PMD, PHY 200GXS, PHY 400GXS, or another PMA".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #88

CI 120 SC 120.4 P 188 L 16 # 412  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The status indicates a good signal "being received" (not sent) by the sublayer below the PMA on the interface further below.

SuggestedRemedy

Change "sent" with "being received".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"and a status indicating a good signal sent by the sublayer below the PMA" to:

"and a status indicating a signal is being received sent by the sublayer below the PMA"

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CI 120 SC 120.4 P 188 L 18 # 413  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The paragraph starting "In the Tx direction" is not well written. Double use of "that" is discouraged.

SuggestedRemedy

Rewrite the paragraph as follows:

In the Tx direction, when data is being received from the PMA client at the PMA service interface (see 120.3) on every input lane associated with an output lane, received bits are routed through the PMA to the output lane at the service interface below the PMA, and symbols are transferred over the output lane to the sublayer below the PMA via the inst:IS\_UNITDATA\_i.request primitive.

If necessary, buffers are filled to allow tolerating the Skew Variation that may appear between the input lanes, PCSLs are demultiplexed from the input lanes, remultiplexed to the output lanes, and PAM4 symbols are converted to pairs of bits on the input lanes and/or pairs of bits are converted to PAM4 symbols on the output lanes.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "In the Tx direction, when data is being received via the PMA:IS\_UNITDATA\_i.request primitive from every input lane from the PMA client at the PMA service interface (see 120.3) that has a PCSL that is routed to this output lane, and (if necessary), buffers are filled to provide the ability to tolerate the Skew Variation that may appear between the input lanes from the PMA client, PCSLs are demultiplexed from the input lanes, remultiplexed to the output lanes, and symbols are transferred over each output lane to the sublayer below the PMA."

to

"The PMA transfers symbols from the input lanes to the output lanes in the Tx direction when data is being received via the PMA:IS\_UNITDATA\_i.request primitive from every input lane from the PMA client at the PMA service interface (see 120.3) that has a PCSL that is routed to this output lane, and (if necessary), buffers are filled to provide the ability to tolerate the Skew Variation that may appear between the input lanes from the PMA client. PCSLs are demultiplexed from the input lanes, remultiplexed to the output lanes, and symbols are transferred over each output lane to the sublayer below the PMA."

CI 120 SC 120.5.1 P 189 L 7 # 414  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Which service interface is not clear.

SuggestedRemedy

Change "the service interface" with "the service interface below the PMA".

Proposed Response Response Status W

PROPOSED ACCEPT.

Redundant since the beginning of the sentence already says this, but it doesn't hurt anything.

CI 120 SC 120.5.2 P 189 L 35 # 416  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

z/n is not the number of output lanes. It is the number of possible positions in the output lane.

SuggestedRemedy

Change "the z/n output lanes" with "the z/n possible positions in the output lane".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #415

CI 120 SC 120.5.2 P 189 L 35 # 415  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

z/m is not the number of input lanes. It is the number of possible positions in the input lane.

SuggestedRemedy

Change "the z/m input lanes" with "the z/m possible positions in the input lane".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "Each PCSL is mapped from a position in the sequence on one of the z/m input lanes to a position in the sequence on one of the z/n output lanes" to "Each PCSL is mapped from a position in the sequence on one of the m input lanes to a position in the sequence on one of the n output lanes"

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Cl 120 SC 120.5.2 P 190 L 25 # 417  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 "11.6" is incorrect.  
 SuggestedRemedy  
 Change "11.6" below mux with "11.8".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.5.3.3 P 191 L 29 # 421  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Here, "skew" is not capitalize, although it is capitalized in most locations.  
 SuggestedRemedy  
 Change "skew" with "Skew".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.5.2 P 190 L 32 # 418  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 "11.5" is incorrect.  
 SuggestedRemedy  
 Change "11.5" with "11.7".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.5.3.4 P 191 L 37 # 422  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 Here, "skew" is not capitalize, although it is capitalized in most locations.  
 SuggestedRemedy  
 Change "skew" with "Skew".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.5.2 P 190 L 39 # 419  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 "11.4" is incorrect.  
 SuggestedRemedy  
 Change "11.4" with "11.6".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.5.3.6 P 192 L 6 # 423  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D  
 We should specify tolerance of Skew (not only Skew Variation) at SP6 to maintain the PCS receive function, because the Skew tolerance of PCS does not include the Skew generated by the PMA between SP6 and PCS.  
 SuggestedRemedy  
 Insert the following phrase at the end of the last sentence in 120.5.3.6:  
 "and the maximum amount of Skew allowed at SP6 (160ns) between input lanes while maintaining the PCS receive function".  
 Proposed Response Response Status W  
 PROPOSED REJECT.

Cl 120 SC 120.5.2 P 190 L 43 # 420  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 "15.1" is incorrect.  
 SuggestedRemedy  
 Change the lowest "15.1" with "15.0".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Proposed Response Response Status W  
 PROPOSED REJECT.  
 The PMA isn't even aware of (total) Skew, and doesn't need to be tolerant of it. The PMA needs to have sufficient buffer fill to tolerate Skew Variation. The total Skew limits are relevant in the Skew Generation subclauses for the PMA, but not in the Skew Tolerance.

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Cl 120 SC 120.5.4 P 192 L 10 # 424  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

There may be up to five PMAs (i.e MMD 1, 8, 9, 10, and 11).

SuggestedRemedy

Change "three PMA stages" with "five PMA stages".

Proposed Response Response Status W

PROPOSED REJECT.  
See comment #397

Cl 120 SC 120.5.5 P 192 L 48 # 425  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Description is inaccurate, because PMA(2:1) is not defined.  
In particular, PMA(2:1) is not clear in terms of data rate (i.e. same aggregate data rate or same per lane data rate).

SuggestedRemedy

Change the last sentence of 120.5.5 as follows:

For example, a PMA(8:4) could be implemented using four independent 2-1 multiplexers in the Tx direction and four independent 1-2 demultiplexers in the Rx direction.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Use the same language as clause 83. Change  
"For example, a PMA(8:4) could be implemented as four independent PMA(2:1) entities" to  
"For example, an 8:4 PMA could be implemented as four independent 2:1 PMAs"

Cl 120 SC 120.5.6 P 193 L 12 # 426  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

There is no 400GAUI-4. This clause specifies signal drivers for the physically instantiated interface below or above PMA that is either 200GAUI-n or 400GAUI-n. It does not include the PMD service interface that is not physically instantiated such as for 400GBASE-DR4.

SuggestedRemedy

Change "400GBASE-R, where the number of input or output lanes is 8 or 4" with "400GBASE-R, where the number of input or output lanes is 8".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Replace the final paragraph of 120.5.6 with  
"For 200GAUI-8 or 400GAUI-16, the modulation format is NRZ. For 200GAUI-4 or 400GAUI-8, the modulation format is PAM4."

Cl 120 SC 120.5.8 P 193 L 44 # 427  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D

We need a description about IS\_SIGNAL.indication primitive for the cases the service interface is physically instantiated e.g. 200GAUI-n and 400GAUI-n.

SuggestedRemedy

Add some description which may be referred from 120B, 120C, 120D, and 120E.

Proposed Response Response Status W

PROPOSED REJECT.  
This notation comes from the generic inter-sublayer interface description in 116.3.1. As there is no specification for the physical instantiation of the inst:IS\_SIGNAL.indication primitive in any of the cited annexes, there is no need to distinguish between the case where there is an AUI and where there is not.

Cl 120 SC 120.5.9 P 193 L 53 # 428  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

The direction of the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.

SuggestedRemedy

Change "in the direction of the PCS" with "towards the RS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Change "in the direction of the PCS" with "towards the MAC".

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 120 SC 120.5.10 P 194 L 19 # 429  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

DTE 200GXS or DTE 400GXS do not provide the service interface below the PMA.

SuggestedRemedy

Change "200GXS" with "PHY 200GXS".  
 Change "400GXS" with "PHY 400GXS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change

"Note that the service interface below the PMA can be provided by the 200GXS, 400GXS, PMD, or another PMA sublayer" to

"Note that the service interface below the PMA can be provided by the PHY XS, PMD, or another PMA sublayer"

Cl 120 SC 120.5.11 P 194 L 32 # 528  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D

Although there are a lot of concerns about burst errors due to DFE, this specification lacks for a capability to evaluate burst errors.

Since it is easy to add such a capability with minor modifications and a small amount of logic, we should add such an optional feature, because DFEs are widely used in the electrical interfaces.

SuggestedRemedy

The detail of the proposal will be presented in the September meeting.

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Cl 120 SC 120.5.11.1.1 P 195 L 23 # 430  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D

The restriction of error counter "for isolated single bit errors" implicates that it does not increment for burst errors. It seems contradictory to the next sentence which says it should count at least one error whenever one or more errors occur in a sliding 1000-bit window.

SuggestedRemedy

Remove the phrase of "for isolated single bit errors" at the end of the sentence which begin with "The checker shall increment" in the fourth paragraph of 120.5.11.1.1.

Proposed Response Response Status W

PROPOSED REJECT.

This text was very carefully crafted during the 802.3ba project (see clause 83.5.10) to permit parallel implementations of the checker. The checker must count errors when errors are present, but isn't required to count every errored bit in a burst.

Cl 120 SC 120.5.11.1.3 P 196 L 15 # 431  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Here, "PMA" does not make sense and is not required.

SuggestedRemedy

Remove "PMA" after "Tx direction".

Proposed Response Response Status W

PROPOSED REJECT.

While not necessary, it doesn't hurt anything and it is the PMA that generates this test pattern. This is the same wording as in 83.5.10

Cl 120 SC 120.5.11.2.1 P 196 L 40 # 432  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.

SuggestedRemedy

Change "towards the PCS" with "towards the RS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "towards the PCS" with "towards the MAC".

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 120 SC 120.5.11.2.1 P 196 L 45 # 149  
 Dudek, Mike Cavium

Comment Type TR Comment Status D

The JP03A test pattern is used for measuring Jitter. With this pattern on all lanes crosstalk will not appear in the jitter measurement while it will degrade the jitter in the real application. We need to create the effect of the crosstalk during these tests by having a different pattern on the lanes not under test.

SuggestedRemedy

Add a per-lane enable for this pattern (and MDIO registers to match). Section 120.5.11.1.3 (square wave test pattern) provides a template for this.

Consider doing the same for JP03B however JP03B is not presently used. If it were used (eg for measuring EOJ) then this should be done for that pattern as well.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Modify the text of 120.5.11.2.1 in accordance with the response to Comment #29

Even odd jitter is measured using JP03B through reference to 94.3.12.6.4.2. See response to D1.3 comment #33 where this test pattern was restored to the draft. See response to comment #133.

Cl 120 SC 120.5.11.2.1 P 196 L 50 # 433  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.

SuggestedRemedy

Change "towards the PCS" with "towards the RS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "towards the PCS" with "towards the MAC".

Cl 120 SC 120.5.11.2.2 P 197 L 1 # 133  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

JP03B test pattern is not used

SuggestedRemedy

Remove the JP03B test pattern generator and registers.

Proposed Response Response Status W

PROPOSED REJECT.

Even odd jitter is measured using JP03B through reference to 94.3.12.6.4.2. See response to D1.3 comment #33 where this test pattern was restored to the draft.

This response may be affected by the response to comment #565 which proposes to remove the need for the JP03B pattern.

Cl 120 SC 120.5.11.2.2 P 197 L 5 # 434  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.

SuggestedRemedy

Change "towards the PCS" with "towards the RS".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "towards the PCS" with "towards the MAC".

Cl 120 SC 120.5.11.2.2 P 197 L 18 # 435  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.

SuggestedRemedy

Change "towards the PCS" with "towards the RS".

Proposed Response Response Status W

PROPOSED ACCEPT.

Change "towards the PCS" with "towards the MAC".

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CI 120 SC 120.5.11.2.3 P 197 L 28 # 436  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.  
 SuggestedRemedy  
 Change "towards the PCS" with "towards the RS".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "towards the PCS" with "towards the MAC".

CI 120 SC 120.5.11.2.3 P 197 L 47 # 437  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.  
 SuggestedRemedy  
 Change "towards the PCS" with "towards the RS".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "towards the PCS" with "towards the MAC".

CI 120 SC 120.5.11.2.3 P 197 L 30 # 114  
 Chacon, Geoffrey HPE  
 Comment Type E Comment Status D Bucket  
 Typo: PRSBS13Q  
 SuggestedRemedy  
 Correct to PRBS13Q  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 120 SC 120.5.11.2.4 P 198 L 6 # 438  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 Towards the PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.  
 SuggestedRemedy  
 Change "towards the PCS" with "towards the RS".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Change "towards the PCS" with "towards the MAC".

CI 120 SC 120.5.11.2.3 P 197 L 44 # 150  
 Dudek, Mike Cavium  
 Comment Type TR Comment Status D  
 There is no skew requirement between lanes for the PRBS13Q generation. Also for the type of tests that PRBS13Q is being used for(scope measurements) crosstalk from other lanes is an important factor. Providing a required pattern offset between lanes would help but this would still produce crosstalk which is locked to the pattern under test and would create deterministic effects rather than random effects with some measurements not seeing the crosstalk at all and others mis-classifying it.  
 SuggestedRemedy  
 Add a per-lane enable for this pattern (and MDIO registers to match). Section 120.5.11.1.3 (square wave test pattern) provides a template for this.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Pending discussion in the Task Force  
 If a per-lane test or a minimum offset between lanes is necessary for this test, this should be specified where the test is used and not in an optional test pattern generation definition.

CI 120 SC 120.5.11.2.4 P 198 L 11 # 9  
 Smith, Daniel Seagate Technology  
 Comment Type E Comment Status D Bucket  
 misspelled "ability" at first occurrence  
 SuggestedRemedy  
 change to: "ability"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "abilty" to "ability"



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Cl 120 SC 120.5.11.2.4 P 198 L 26 # 301  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D Bucket

The restriction of error counter "for isolated single bit errors" implicates that it does not increment for burst errors. It seems contradictory to the next sentence which says it should count at least one error whenever one or more errors occur in a sliding 1000-bit window.

SuggestedRemedy

Remove the phrase of "for isolated single bit errors" at the end of the sentence which begin with "The checker shall increment" in the second paragraph of 120.5.11.2.4.

Proposed Response Response Status W

PROPOSED REJECT.  
 See response to comment #430

Cl 120 SC 120.5.11.2.4 P 198 L 27 # 552  
 Palkert, Thomas Macom

Comment Type ER Comment Status D

The method of generating a PRBS31Q pattern is complex and we have seen differences in bit sequences generated between vendors. Correnct implementation of the test procedures requires that the sequence is the same across vendors.

SuggestedRemedy

To provide clarity we propose that we provide the first 50 bits of the sequence of the PAM4 signal which will ensure that various implementation are in agreement.  
 50 bit sequence should be sufficient to ensure correct coding. Note that the proposed solution would follow what is current done for the PRBS13Q sequence which shows the bits on page 197 line 41.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's Note: Subclause corrected to 120.5.11.2.4)

Add sentence after ". the next repetition of the PRBS31 sequence."  
 "For example, if the PRBS31 generator used to create the PRBS31Q sequence is initialized to a seed value of all ones, the PRBS31Q sequence begins with the following Gray coded PAM4 symbols:  
 222222222222012222222222200022222222201201222."

Cl 120 SC 120.5.11.2.4 P 199 L 15 # 116  
 Chacon, Geoffrey HPE

Comment Type E Comment Status D Bucket

Typo in PRBS31Q

SuggestedRemedy

Correct to PRBS31Q

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120 SC 120.5.11.2.5 P 199 L 36 # 128  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

This SSPRQ pattern will give inconsistent results when testing a range of transmitters.

SuggestedRemedy

If we can find a less extreme pattern that better achieves the objective of allowing TDEC measurements that correlate to the TDP we don't want to measure at line rate, change to that pattern.  
 If we can't, change to a pattern that is less extreme, and don't use it for TDEC testing.

Proposed Response Response Status W

PROPOSED REJECT.  
 No alternative test pattern proposed. If the optical track selects a different test pattern than SSPRQ, the PMA can generate it.

Cl 120 SC 120.5.11.2.5 P 199 L 44 # 302  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

A reference to Figure 49-7 is inappropriate, because Figure 49-7 is 64B/66B block format.

SuggestedRemedy

Change the reference to Figure 49-7 with a reference to Figure 49-9.

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 120 SC 120.5.11.2.5 P 199 L 46 # 303  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

I think bit sequence B is a 65534-bit sequence (not 65535-bit sequence), because it is formed by removing two bits from two repetition of bit sequence A that is a 32768-bit sequence.

SuggestedRemedy

Change "65535-bit" with "65534-bit".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 120 SC 120.5.11.2.5 P 200 L 4 # 304  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

PAM4 sequence 4 must be a 16384-symbol sequence, not a 16364-symbol sequence.

SuggestedRemedy

Change "16364-symbol" with "16384-symbol".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 120 SC 120.5.11.2.5 P 200 L 8 # 568  
 Hanan, Leizerovich MultiPhy

Comment Type T Comment Status D

The SSPRQ pattern is eventually a repeating sequence of  $2^{16}-1$  PAM4 symbols. Pattern length is not a round power of 2, which may complicate some implementations.

SuggestedRemedy

Pad the suggested pattern by an additional symbol, generating a  $2^{16}$  symbols length sequence.

Proposed Response Response Status W

PROPOSED REJECT.

[Editor's note: Comment type set to T and this comment was sent after the close of the comment period]

None of the patterns such as PRBS31 nor the typically used (but less stressful) shorter patterns of PRBS13 or PRBS9 are powers of two in length, and this has never created any difficulty for measurement with scope capture for NRZ signals. Both the PRBS13Q and PRBS31Q patterns are odd numbers of symbols in length. Having a length of  $2^{16}-1$  means that anything that happens at a fractional rate (e.g. Baud/32) sees a different pattern each occurrence.

CI 120 SC 120.5.11.2.5 P 200 L 10 # 305  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The skew requirement between lanes should be defined but not defined for SSPRQ. It should be defined to avoid the aggressor of the crosstalk being synchronous to the lane under measurement.

SuggestedRemedy

Define the requirement for the skew between lanes.

Or, alternatively, separate the test control for SSPRQ from other test patterns and make it lane-by-lane in a similar way to Square wave testing control, which allows us to run PRBS13Q or PRBS31Q on other lanes.

Define the priority between square wave and SSPRQ.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending discussion in the Task Force

If a per-lane test or a required skew between lanes is required, this needs to be specified where the test is used and not in an optional test pattern generation definition.

CI 120 SC 120.5.11.2.5 P 200 L 10 # 148  
 Dudek, Mike Cavium

Comment Type TR Comment Status D

There is no skew requirement between lanes for the SSPRQ generation. Also for the type of tests that SSPRQ is being used for (scope measurements such as TDEC) crosstalk from other lanes can be an important factor. Providing a required pattern offset between lanes would help but this would still produce crosstalk which is locked to the pattern under test and would create deterministic effects rather than random effects with some measurements not seeing the crosstalk at all and others misclassifying it.

SuggestedRemedy

Add a per-lane enable for this pattern (and MDIO registers to match). Section 120.5.11.1.3 (square wave test pattern) provides a template for this.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Pending discussion in the Task Force.

If a per-lane test or a minimum skew between lanes is required, this needs to be specified where the test is used and not where it is defined. Only specify an offset or per-lane activation if the use of the pattern by the optical clauses requires it.

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**Cl 120 SC 120.6 P 200 L 21 # 306**  
Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type T Comment Status D Bucket**  
MMD addresses 11 is also available for PMA.  
**SuggestedRemedy**  
Change "MMD 8, 9, and 10" with "MMD 8, 9, 10, and 11".  
**Proposed Response Response Status W**  
PROPOSED REJECT.  
See comment #397.

**Cl 120 SC 120.6 P 200 L 28 # 307**  
Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type T Comment Status D Bucket**  
MMD addresses 11 is also available for PMA.  
**SuggestedRemedy**  
Change "MMDs 8, 9, and 10" with "MMDs 8, 9, 10, and 11".  
**Proposed Response Response Status W**  
PROPOSED REJECT.  
See comment #397.

**Cl 120 SC 120.6 P 201 L 6 # 89**  
Trowbridge, Steve Nokia  
**Comment Type E Comment Status D Bucket**  
In Table 120-4, the "PMA status variable" column has several entries that wrap the name of the variable over to the next line in the middle of a word  
**SuggestedRemedy**  
Make the rightmost column wide enough to not wrap any of the text, shrinking the PMA/PMD register name column (which wraps at word boundaries) and Register/Bit number column as necessary  
**Proposed Response Response Status W**  
PROPOSED ACCEPT.

**Cl 120 SC 120.7.3 P 206 L 11 # 308**  
Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type T Comment Status D Bucket**  
In direction of PCS is not clear, because PMA may be between PCS and RS, if there is 200GXS or 400GXS.  
**SuggestedRemedy**  
Change the feature column for LNS\_UPSTRM from "Number of lanes in direction of PCS" to "Number of lanes in the PMA service interface".  
**Proposed Response Response Status W**  
PROPOSED ACCEPT IN PRINCIPLE.  
Change to "Number of lanes in the direction of MAC" to be consistent with the language of other resolved comments

**Cl 120 SC 120.7.3 P 206 L 15 # 309**  
Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type T Comment Status D Bucket**  
The PMD is not necessarily the adjacent sublayer under the PMA.  
**SuggestedRemedy**  
Change the feature column for LNS\_DNSTRM from "Number of lanes in direction of PMD" to "Number of lanes in the service interface below the PMA".  
**Proposed Response Response Status W**  
PROPOSED REJECT.  
It says "in the direction of", not "adjacent to". This is the same language used in clause 83

**Cl 120 SC 120.7.3 P 206 L 16 # 310**  
Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type E Comment Status D Bucket**  
No space between "4" and "[ ]".  
**SuggestedRemedy**  
Insert a white space between "4" and "[ ]".  
**Proposed Response Response Status W**  
PROPOSED ACCEPT.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

**Cl 120**    **SC 120.7.3**    **P 206**    **L 19**    # **311**  
 Hidaka, Yasuo    Fujitsu Lab of America  
**Comment Type E**    **Comment Status D**    *Bucket*  
 No space between "4" and "[ ]".  
*SuggestedRemedy*  
 Insert a white space between "4" and "[ ]".  
**Proposed Response**    **Response Status W**  
 PROPOSED ACCEPT.

**Cl 120**    **SC 120.7.3**    **P 206**    **L 20**    # **312**  
 Hidaka, Yasuo    Fujitsu Lab of America  
**Comment Type T**    **Comment Status D**  
 Capability/option items for NRZ or PAM4 in the PMA service interface is useful to simplify the PICS.  
*SuggestedRemedy*  
 Insert the following items after LNS\_DNSTRM:  
  
 Item: UP\_NRZ  
 Feature: Lane count supported in the PMA service interface above the PMA  
 Subclause: 120.1.4  
 Value/Comment: 8 lanes for 200GBASE-R PMA or 16 lanes for 400GBASE-R PMA  
 Status: O.2  
 Support: Yes  No   
  
 Item: UP\_PAM4  
 Feature: Lane count supported in the PMA service interface above the PMA  
 Subclause: 120.1.4  
 Value/Comment: 4 lanes for 200GBASE-R PMA or 8 lanes for 400GBASE-R PMA  
 Status: O.2  
 Support: Yes  No   
  
**Proposed Response**    **Response Status W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
  
 Change Item "LNS\_UPSTRM" to "\*LNS\_UPSTRM"  
  
 Insert the following items after LNS\_UPSTRM:  
  
 Item: \*UP\_NRZ  
 Feature: NRZ modulation for PMA service interface  
 Subclause: 120.1.4  
 Status: (PMA200\*LNS\_UPSTRM=8 or PMA400\*LNS\_UPSTRM=16):M  
 Support: Yes  N/A   
  
 Item: \*UP\_PAM4  
 Feature: PAM4 modulation for PMA service interface  
 Subclause: 120.1.4  
 Status: (PMA200\*LNS\_UPSTRM=4 or PMA400\*LNS\_UPSTRM=8):M  
 Support: Yes  N/A

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Cl 120 SC 120.7.3 P 206 L 20 # 313  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Capability/option items for NRZ or PAM4 in the service interface below the PMA is useful to simplify the PICS.

SuggestedRemedy

Insert the following items after LNS\_DNSTRM:

Item: DN\_NRZ  
 Feature: Lane count supported in the service interface below the PMA  
 Subclause: 120.1.4  
 Value/Comment: 8 lanes for 200GBASE-R PMA or 16 lanes for 400GBASE-R PMA  
 Status: O.3  
 Support: Yes  No

Item: DN\_PAM4  
 Feature: Lane count supported in the service interface below the PMA  
 Subclause: 120.1.4  
 Value/Comment: 4 lanes for 200GBASE-R PMA or 4 or 8 lanes for 400GBASE-R PMA  
 Status: O.3  
 Support: Yes  No

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change Item "LNS\_DNSTRM" to "\*LNS\_DNSTRM"

Insert the following items after LNS\_DNSTRM:

Item: \*DN\_NRZ  
 Feature: NRZ modulation used for service interface below the PMA  
 Subclause: 120.1.4  
 Status: (PMA200\*LNS\_DNSTRM=8 or PMA400\*LNS\_DNSTRM=16):M  
 Support: Yes  N/A

Item: \*DN\_PAM4  
 Feature: PAM4 modulation used for service interface below the PMA  
 Subclause: 120.1.4  
 Status: (PMA200\*LNS\_DNSTRM=4 or PMA400\*LNS\_DNSTRM<16):M  
 Support: Yes  N/A

Cl 120 SC 120.7.3 P 206 L 22 # 314  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

RX\_CLOCK is mandatory.

SuggestedRemedy

Remove "No

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 206 L 24 # 315  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

TX\_CLOCK is mandatory only if either PMA200 or PMA400 is supported.

SuggestedRemedy

Change "No

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 206 L 30 # 316  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

LANE\_MAPPING is mandatory

SuggestedRemedy

Remove "No

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 206 L 33 # 317  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

LNKS is mandatory

SuggestedRemedy

Remove "No

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 120 SC 120.7.3 P 206 L 35 # 318  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

Test pattern is an optional feature if the PMA service interface above the PMA or the service interface below the PMA includes physically instantiated 200GAUI-n, 400GAUI-n, or the PMD service interface (whether or not physically instantiated). See 120.5.11, P194, L33.

SuggestedRemedy

Change the status column for JTP from "O" to "PINST:O".  
 Insert the following item before JTP:

Item: \*PINST  
 Feature: The PMA service interface above the PMA or the service interface below the PMA  
 Subclause: 120.5.11  
 Value/Comment: Include physically instantiated 200GAUI-n, 400GAUI-n, or the PMD service interface (whether or not physically instantiated).  
 Status: O  
 Support: Yes  No

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 JTP entry deleted by comment #452

Cl 120 SC 120.7.3 P 206 L 35 # 452  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D

To make a reference to JTP from other feature.

SuggestedRemedy

Insert "\*" (asterisk) in front of "JTP" in the item column.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Delete the line for JTP, since it isn't used elsewhere. \*JTP1 and \*JTP2 are used to control which test patterns are optional, and they already have asterisks.

Cl 120 SC 120.7.3 P 206 L 40 # 319  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

PMA local loopback is not conditional option.

SuggestedRemedy

Remove "N/A

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 206 L 43 # 320  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

PMA remote loopback is not conditional option.

SuggestedRemedy

Remove "N/A

Proposed Response Response Status W

PROPOSED ACCEPT.

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CI 120 SC 120.7.3 P 206 L 47 # 321  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

USP1SP6 is not a proper condition for some conditional mandatory features.

SuggestedRemedy

Replace USP1SP6 with the following items:

Item: \*UP\_PINST

Feature: PMA service interface above PMA

Subclause: 120.5.1, 120.5.5

Value/Comment: Physically instantiated 200GAUI-n or 400GAUI-n

Status: O

Support: Yes  No

Item: \*USP1

Feature: PMA service interface above PMA

Subclause: 120.5.3.2

Value/Comment: Physically instantiated 200GAUI-n or 400GAUI-n that is closest to PMD (SP1 in Figure 116-4 and 116-5)

Status: O

Support: Yes  No

Item: \*USP6

Feature: PMA service interface above PMA

Subclause: 120.5.3.5

Value/Comment: Physically instantiated 200GAUI-n or 400GAUI-n that is closest to PCS (SP6 in Figure 116-4 and 116-5)

Status: O

Support: Yes  No

Proposed Response Response Status W

PROPOSED REJECT.

This is arguably a "cheat" with the skew budget requirements, but it is one that has been used since 802.3ba, and the proposed remedy would make the situation worse.

The overall skew model avoided a detailed allocation of smaller portions of the skew budget to multiple PMAs in a stack. SP1 in the Tx direction was the input to the lowest PMA, and SP6 in the Rx direction was the output from the highest PMA, and hence represented a kind of "worst case". If a PMA were the only PMA in the stack, these represent the skew requirements that single PMA must meet. If there are multiple PMAs, each PMA may be called on to contribute less skew and less skew variation than the single PMA case.

Since the PICs in general will be filled out for an individual PMA in an individual device, the aggregate skew behavior of multiple PMAs in a stack cannot be judged by examining the single PMA. So the skew requirements are judged AS IF this were the only PMA in the

stack, and if SP1 and SP6 were actually adjacent to the device. And every PMA in the stack must be at least this good (in fact, some may need to be better).

Unbundling the PICSs and only considering the SP1 and SP6 requirements in the case where SP1 and SP6 are actually adjacent would have the effect of absolving PMAs in the middle of the stack from any responsibility for meeting the skew requirements. But in fact all PMAs must at least meet the SP1 SP6 requirements as if they were the only PMA.

CI 120 SC 120.7.3 P 206 L 51 # 322  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

DSP1SP6 is not a proper condition for some conditional mandatory features.

SuggestedRemedy

Replace DSP1SP6 with the following items:

Item: \*DN\_PINST

Feature: Service interface below PMA

Subclause: 120.5.3.1, 120.5.5

Value/Comment: Physically instantiated 200GAUI-n or 400GAUI-n

Status: O

Support: Yes  No

Item: \*DSP1

Feature: Service interface below PMA

Subclause: 120.5.3.1

Value/Comment: Physically instantiated 200GAUI-n or 400GAUI-n that is closest to PMD (SP1 in Figure 116-4 and 116-5)

Status: O

Support: Yes  No

Item: \*DSP6

Feature: Service interface below PMA

Subclause: 120.5.3.6

Value/Comment: Physically instantiated 200GAUI-n or 400GAUI-n that is closest to PCS (SP6 in Figure 116-4 and 116-5)

Status: O

Support: Yes  No

Proposed Response Response Status W

PROPOSED REJECT.

See comment #321

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Cl 120 SC 120.7.3 P 207 L 5 # 323  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
SP1 and SP6 are not only the cases to apply 200GAUI-n or 400GAUI-n to UNAU1.  
UNAU1 is mandatory whenever the upper interface is 200GAUI-n or 400GAUI-n.  
SuggestedRemedy  
Change the status column for UNAU1 from "USP1SP6:M" to "UP\_PINST:M".  
Proposed Response Response Status W  
PROPOSED REJECT.  
See comment #321

Cl 120 SC 120.7.3 P 207 L 6 # 441  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D  
UNAU1 is mandatory if the upper interface is 200GAUI-n or 400GAUI-n.  
SuggestedRemedy  
Change "No []" with "N/A []" in the support column for UNAU1.  
Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 207 L 11 # 440  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D  
The terms "upstream" and "downstream" are not appropriate here, because they implicate the direction of the flow. We should distinguish up side and down side without implicating direction of flow.  
SuggestedRemedy  
Change "upstream 200GAUI-n or 400GAUI-n" in the row of UNAU1 with "200GAUI-n or 400GAUI-n of the PMA service interface above the PMA".  
Change "downstream 200GAUI-n or 400GAUI-n" in the row of DNAUI with "200GAUI-n or 400GAUI-n of the service interface below the PMA".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change "upstream 200GAUI-n or 400GAUI-n" in the row of UNAU1 to "200GAUI-n or 400GAUI-n of the PMA service interface".  
Change "downstream 200GAUI-n or 400GAUI-n" in the row of DNAUI to "200GAUI-n or 400GAUI-n of the service interface below the PMA".

Cl 120 SC 120.7.3 P 207 L 14 # 442  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D Bucket  
DNAUI is mandatory if the upper interface is 200GAUI-n or 400GAUI-n.  
SuggestedRemedy  
Change "No []" with "N/A []" in the support column for DNAUI.  
Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 207 L 14 # 439  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
SP1 and SP6 are not only the cases to apply 200GAUI-n or 400GAUI-n to the service interface below PMA.  
SuggestedRemedy  
Change the status column for DNAUI from "DSP1SP6:M" to "DN\_PINST:M".  
Proposed Response Response Status W  
PROPOSED REJECT.  
See comment #321

Cl 120 SC 120.7.3 P 207 L 23 # 443  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D Bucket  
DELAY200 is mandatory if PMA200 is supported.  
SuggestedRemedy  
Change "No []" with "N/A []" in the support column for DELAY200.  
Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.3 P 207 L 25 # 444  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D Bucket  
DELAY400 is mandatory if PMA400 is supported.  
SuggestedRemedy  
Change "No []" with "N/A []" in the support column for DELAY400.  
Proposed Response Response Status W  
PROPOSED ACCEPT.



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Cl 120 SC 120.7.4 P 208 L 6 # 446  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 S1 is mandatory if the lower interface is SP1.  
 SuggestedRemedy  
 Change the status column for S1 from "DSP1SP6:M" to "DSP1:M".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #321

Cl 120 SC 120.7.4 P 208 L 8 # 447  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 S2 is mandatory if the lower interface is SP1.  
 SuggestedRemedy  
 Change the status column for S2 from "DSP1SP6:M" to "DSP1:M".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #321

Cl 120 SC 120.7.4 P 208 L 6 # 445  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type E Comment Status D Bucket  
 S1 through S9 are mandatory if condition is met.  
 SuggestedRemedy  
 Change "No []" with "N/A []" in the support column for S1 through S9.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.4 P 208 L 20 # 449  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 S7 is mandatory if the upper interface is SP6.  
 SuggestedRemedy  
 Change the status column for S7 from "USP1SP6:M" to "USP6:M".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #321

Cl 120 SC 120.7.4 P 208 L 8 # 448  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 S3 is mandatory if the upper interface is SP1.  
 SuggestedRemedy  
 Change the status column for S3 from "USP1SP6:M" to "USP1:M".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #321

Cl 120 SC 120.7.4 P 208 L 22 # 450  
 Hidaka, Yasuo Fujitsu Lab of America  
 Comment Type T Comment Status D Bucket  
 S8 is mandatory if the upper interface is SP6.  
 SuggestedRemedy  
 Change the status column for S8 from "USP1SP6:M" to "USP6:M".  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #321

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Cl 120 SC 120.7.4 P 208 L 25 # 451  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
S9 is mandatory if the lower interface is SP6.  
SuggestedRemedy  
Change the status column for S9 from "DSP1SP6:M" to "DSP6:M".  
Proposed Response Response Status W  
PROPOSED REJECT.  
See comment #321

Cl 120 SC 120.7.5 P 208 L 42 # 453  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
Send PRBS31 Tx is an optional feature, if the lower interface supports NRZ and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.  
SuggestedRemedy  
Change the status column for J1 to "JTP\*DN\_NRZ:O".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J1 to "JTP2\*DN\_NRZ:O"

Cl 120 SC 120.7.5 P 208 L 44 # 454  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D Bucket  
Send PRBS31 Tx is an optional feature, if the lower interface supports NRZ and test pattern is supported.  
SuggestedRemedy  
Add "N/A []" to the support column for J1.  
Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 208 L 48 # 455  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
Send PRBS31 Rx is an optional feature, if the upper interface supports NRZ and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.  
SuggestedRemedy  
Change the status column for J2 to "JTP\*UP\_NRZ:O".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J2 to "JTP1\*UP\_NRZ:O".

Cl 120 SC 120.7.5 P 208 L 50 # 456  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type E Comment Status D Bucket  
Send PRBS31 Rx is an optional feature, if the upper interface supports NRZ and test pattern is supported.  
SuggestedRemedy  
Add "N/A []" to the support column for J2.  
Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 3 # 457  
Hidaka, Yasuo Fujitsu Lab of America  
Comment Type T Comment Status D Bucket  
Check PRBS31 Tx is an optional feature, if the upper interface supports NRZ and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.  
SuggestedRemedy  
Change the status column for J3 to "JTP\*UP\_NRZ:O".  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J3 to "JTP1\*UP\_NRZ:O".

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Cl 120 SC 120.7.5 P 209 L 5 # 458  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 Check PRBS31 Tx is an optional feature, if the upper interface supports NRZ and test pattern is supported.

SuggestedRemedy  
 Add "N/A []" to the support column for J3.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 9 # 459  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 Check PRBS31 Rx is an optional feature, if the lower interface supports NRZ and test pattern is supported.  
 The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
 Change the status column for J4 to "JTP\*DN\_NRZ:O".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the status column for J4 to "JTP2\*DN\_NRZ:O".

Cl 120 SC 120.7.5 P 209 L 11 # 460  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 Check PRBS31 Rx is an optional feature, if the lower interface supports NRZ and test pattern is supported.

SuggestedRemedy  
 Add "N/A []" to the support column for J4.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 15 # 461  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 Send PRBS9 Tx is an optional feature, if the lower interface supports NRZ and test pattern is supported.  
 The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
 Change the status column for J5 to "JTP\*DN\_NRZ:O".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the status column for J5 to "JTP2\*DN\_NRZ:O".

Cl 120 SC 120.7.5 P 209 L 17 # 462  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 Send PRBS9 Tx is an optional feature, if the lower interface supports NRZ and test pattern is supported.

SuggestedRemedy  
 Add "N/A []" to the support column for J5.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 21 # 463  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 Send PRBS9 Rx is an optional feature, if the upper interface supports NRZ and test pattern is supported.  
 The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
 Change the status column for J6 to "JTP\*UP\_NRZ:O".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the status column for J6 to "JTP1\*UP\_NRZ:O".

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Cl 120 SC 120.7.5 P 209 L 23 # 464  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 Send PRBS9 Rx is an optional feature, if the upper interface supports NRZ and test pattern is supported.

SuggestedRemedy  
 Add "N/A []" to the support column for J6.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 28 # 466  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 Send square wave Tx is an optional feature, if the lower interface supports NRZ and test pattern is supported.

SuggestedRemedy  
 Add "N/A []" to the support column for J7.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 26 # 465  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 Send square wave Tx is an optional feature, if the lower interface supports NRZ and test pattern is supported.  
 The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
 Change the status column for J7 to "JTP\*DN\_NRZ:O".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the status column for J7 to "JTP2\*DN\_NRZ:O".

Cl 120 SC 120.7.5 P 209 L 32 # 468  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
 Send JP03A Tx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.  
 The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
 Change the status column for J8 to "JTP\*DN\_PAM4:O".

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the status column for J8 to "JTP2\*DN\_PAM4:O".

Cl 120 SC 120.7.5 P 209 L 26 # 467  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 A reference to 120.5.11.1.2 is inappropriate, because 120.5.11.1.2 specifies PRBS9 test pattern.

SuggestedRemedy  
 Change the subclause column for J7 from "120.5.11.1.2" to "120.5.11.1.3".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 209 L 34 # 469  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
 Send JP03A Tx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.

SuggestedRemedy  
 Add "N/A []" to the support column for J8.

Proposed Response Response Status W  
 PROPOSED ACCEPT.



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Cl 120 SC 120.7.5 P 210 L 3 # 476  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
Send PRBS13Q Tx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
Change the status column for J12 to "JTP\*DN\_PAM4:O".

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J12 to "JTP2\*DN\_PAM4:O".

Cl 120 SC 120.7.5 P 210 L 5 # 477  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
Send PRBS13Q Tx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.

SuggestedRemedy  
Add "N/A []" to the support column for J12.

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 210 L 9 # 478  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
Send PRBS13Q Rx is an optional feature, if the upper interface supports PAM4 and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
Change the status column for J13 to "JTP\*UP\_PAM4:O".

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J13 to "JTP1\*UP\_PAM4:O".

Cl 120 SC 120.7.5 P 210 L 11 # 479  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
Send PRBS13Q Rx is an optional feature, if the upper interface supports PAM4 and test pattern is supported.

SuggestedRemedy  
Add "N/A []" to the support column for J13.

Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 120 SC 120.7.5 P 210 L 15 # 480  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket  
Send PRBS31Q Tx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.

SuggestedRemedy  
Change the status column for J14 to "JTP\*DN\_PAM4:O".

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J14 to "JTP2\*DN\_PAM4:O".

Cl 120 SC 120.7.5 P 210 L 17 # 481  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket  
Send PRBS31Q Tx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.

SuggestedRemedy  
Add "N/A []" to the support column for J14.

Proposed Response Response Status W  
PROPOSED ACCEPT.

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**Cl 120**    **SC 120.7.5**                      **P 210**            **L 21**                      # **482**  
Hidaka, Yasuo                                      Fujitsu Lab of America

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

Send PRBS31Q Rx is an optional feature, if the upper interface supports PAM4 and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.

**SuggestedRemedy**  
Change the status column for J15 to "JTP\*UP\_PAM4:O".

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

PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J15 to "JTP1\*UP\_PAM4:O".

**Cl 120**    **SC 120.7.5**                      **P 210**            **L 23**                      # **483**  
Hidaka, Yasuo                                      Fujitsu Lab of America

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

Send PRBS31Q Rx is an optional feature, if the upper interface supports PAM4 and test pattern is supported.

**SuggestedRemedy**  
Add "N/A []" to the support column for J15.

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

PROPOSED ACCEPT.

**Cl 120**    **SC 120.7.5**                      **P 210**            **L 26**                      # **484**  
Hidaka, Yasuo                                      Fujitsu Lab of America

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

Check PRBS31Q Tx is an optional feature, if the upper interface supports PAM4 and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.

**SuggestedRemedy**  
Change the status column for J16 to "JTP\*UP\_PAM4:O".

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

PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J16 to "JTP1\*UP\_PAM4:O".

**Cl 120**    **SC 120.7.5**                      **P 210**            **L 28**                      # **485**  
Hidaka, Yasuo                                      Fujitsu Lab of America

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

Check PRBS31Q Tx is an optional feature, if the upper interface supports PAM4 and test pattern is supported.

**SuggestedRemedy**  
Add "N/A []" to the support column for J16.

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

PROPOSED ACCEPT.

**Cl 120**    **SC 120.7.5**                      **P 210**            **L 32**                      # **486**  
Hidaka, Yasuo                                      Fujitsu Lab of America

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

Check PRBS31Q Rx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.  
The expression currently written in the status column is not consistent with clause 21.6.

**SuggestedRemedy**  
Change the status column for J17 to "JTP\*DN\_PAM4:O".

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

PROPOSED ACCEPT IN PRINCIPLE.  
Change the status column for J17 to "JTP2\*DN\_PAM4:O".

**Cl 120**    **SC 120.7.5**                      **P 210**            **L 34**                      # **487**  
Hidaka, Yasuo                                      Fujitsu Lab of America

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

Check PRBS31Q Rx is an optional feature, if the lower interface supports PAM4 and test pattern is supported.

**SuggestedRemedy**  
Add "N/A []" to the support column for J17.

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

PROPOSED ACCEPT.





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Cl **120B** SC **120B.1** P **329** L **27** # **140**  
 D'Ambrosia, John Futurewei, Subsidiary

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

Diagram (120B-1) can be improved to better communicate the 200GXS functionality.

*SuggestedRemedy*

Move the stack without the extender sublayer to the left column, and the extender sublayer based stack to the right. Move the PCS and PMA for the non-extender sublayer stack to be across from the 200GXS/PMA at the top of the Extender Sublayer Stack side. Keep the bottom PMA / PMD of both stacks in the same location.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl **120B** SC **120B.1** P **329** L **27** # **494**  
 Hidaka, Yasuo Fujitsu Lab of America

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

In Figure 120B-1, DTE 200GXS and PHY 200GXS are not distinguished. Although their specifications are mostly identical, there have clear difference due to the location in the protocol stack.

I think we should not omit the prefix "DTE" or "PHY" whenever their distinction is important or effective so as to remind readers of their distinction and labeling.

*SuggestedRemedy*

Make the following changes in Figure 120B-1:

Change the upper "200GXS" with "DTE 200GXS".  
 Change the lower "200GXS" with "PHY 200GXS".  
 Add "DTE = DATA TERMINAL EQUIPMENT" at the bottom.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make the following changes to Figure 120B-1:

Change the upper "200GXS" to "DTE 200GXS".

Change the lower "200GXS" to "PHY 200GXS".

Add "DTE = DATA TERMINAL EQUIPMENT" and "PHY = PHYSICAL LAYER DEVICE" to the list of abbreviations at the foot of the figure.

Cl **120B** SC **120B.1** P **329** L **35** # **170**  
 Dudek, Mike Cavium

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

Although the GAUI chip to chip interface can be connected to a module (combination PMA/PMD) as shown in figures 120B-1, and 120B-2 it is not the primary target application. It would be better to show the primary target application. (Note that annex 120A does not differentiate between chip to chip and chip to module). (See also similar comment against 120D)

*SuggestedRemedy*

Add a PMA box to the right hand side of these diagrams between the two PMA's. The GAUI chip to chip filled in link being between the PMA adjacent to the PCS and this new PMA box. The PMA to the PMA adjacent to the PMD link should just be labelled 200GAUI-n or 400GAUI-n(neither chip to chip or chip to module) and either not filled in or maybe striped. At the end of the paragraph at line 21 add the sentences "Although the 200GAUI-8 and 400GAUI-16 chip to chip interfaces are primarily intended for connections between PMA's that are not co-located with the PMD, they can be used between any PMA's. Note that the 200GAUI-n and 400GAUI-n chip to module interfaces specified in Annex 120C and Annex 120E are intended for connection from a PMA to the PMA co-located with the PMD

Proposed Response Response Status **W**

PROPOSED REJECT.

The diagram already shows the primary target application. The layer diagram for a chip-to-chip GAUI is the same as that for a chip-to-module GAUI:

PCS, PMA, GAUI, PMA, PMD

The only difference is in the implementation of the signal connections.

This figure is the same as Figure 83D-1 in that regard.

Cl **120B** SC **120B.1** P **329** L **35** # **498**  
 Hidaka, Yasuo Fujitsu Lab of America

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

PCS is labeled inconsistently in Figure 120B-1.

*SuggestedRemedy*

Change "200 Gb/s PCS" on the left stack with "200GBASE-R PCS".

Proposed Response Response Status **W**

PROPOSED REJECT.

The labeling of the two PCS blocks is intentionally different. The PCS in the left hand block cannot be a 200GBASE-R PCS as in this case, there would not be a 200GXS.

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Cl 120B SC 120B.1 P 330 L 8 # 495  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

In Figure 120B-2, DTE 400GXS and PHY 400GXS are not distinguished. Although their specifications are mostly identical, there have clear difference due to the location in the protocol stack.

I think we should not omit the prefix "DTE" or "PHY" whenever their distinction is important or effective so as to remind readers of their distinction and labeling.

SuggestedRemedy

Make the following changes in Figure 120B-2:

Change the upper "400GXS" with "DTE 400GXS".

Change the lower "400GXS" with "PHY 400GXS".

Add "DTE = DATA TERMINAL EQUIPMENT" at the bottom.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Make the following changes to Figure 120B-2:

Change the upper "400GXS" to "DTE 400GXS".

Change the lower "400GXS" to "PHY 400GXS".

Add "DTE = DATA TERMINAL EQUIPMENT" and "PHY = PHYSICAL LAYER DEVICE" to the list of abbreviations at the foot of the figure.

Cl 120B SC 120B.1 P 330 L 16 # 499  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

PCS is labeled inconsistently in Figure 120B-2.

SuggestedRemedy

Change "400 Gb/s PCS" on the left stack with "400GBASE-R PCS".

Proposed Response Response Status W

PROPOSED REJECT.

The labeling of the two PCS blocks is intentionally different. The PCS in the left hand block cannot be a 400GBASE-R PCS as in this case, there would not be a 400GXS.

Cl 120B SC 120B.1 P 331 L 16 # 502  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120B-3 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 200GAUI-8 chip-to-chip application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.

Label the left component as "With upper PMA".

Label the right component as "With lower PMA".

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

Cl 120B SC 120B.1 P 331 L 33 # 503  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120B-4 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 400GAUI-16 chip-to-chip application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.

Label the left component as "With upper PMA".

Label the right component as "With lower PMA".

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

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Cl **120B** SC **120B.1** P **331** L **38** # **510**  
 Hidaka, Yasuo Fujitsu Lab of America

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

Channel for 200GAUI-8 and 400GAUI-16 chip-to-chip is described in 120B.4 including the difference from 83D.4.

*SuggestedRemedy*

Change the reference to "83D.4" with a reference to "120B.4".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl **120B** SC **120B.2** P **330** L **27** # **141**  
 D'Ambrosia, John Futurewei, Subsidiary

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

Diagram (120B-2) can be improved to better communicate the 200GXS functionality.

*SuggestedRemedy*

Move the stack without the extender sublayer to the left column, and the extender sublayer based stack to the right. Move the PCS and PMA for the non-extender sublayer stack to be across from the 400GXS/PMA at the top of the Extender Sublayer Stack side. Keep the bottom PMA / PMD of both stacks in the same location.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl **120B** SC **120B.4** P **332** L **38** # **171**  
 Dudek, Mike Cavium

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

The target SER for this interface is 1e-5 (see 120B.3.2). However with the DFE tap weight allowed to be equal to 1 the probability of error extension is 0.5. This results in the probability of RS-FEC symbol errors caused by this one detector error to be 1.1

*SuggestedRemedy*

Change the DER from 1e-6 to 9e-7 (or reduce the normalized DFE coefficient magnitude limit.

Proposed Response Response Status **W**

PROPOSED REJECT.

The probability of error extension of 0.5 (compared to 0.75 for PAM4) together with the codeword interleaving used in the PCS means that the end-to-end frame loss ratio target can be met without the need to change the DER0 value.

Cl **120B** SC **120B.5.3** P **334** L **11** # **511**  
 Hidaka, Yasuo Fujitsu Lab of America

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

Negative description "not applicable" in the Value/Comment column for CHAN may be confusing and may cause an error to choose Yes or No. The term of "PHY manufacturer" is also not clear.

*SuggestedRemedy*

Change the Value/Comment column for CHAN as follows:

This PICS is for conformance of channel between two PMAs. (A manufacturer responsible only for PMA with this interface may choose "No" for this item.)

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Although the term "PHY manufacturer" has been used in previous clauses and Annexes in this context, "PMA manufacturer" is more accurate (for a chip-to-chip link) than "PHY manufacturer"

Change "PHY manufacturer" to "PMA manufacturer"

Cl **120B** SC **120B.5.4.1** P **334** L **46** # **512**  
 Hidaka, Yasuo Fujitsu Lab of America

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

There are exceptions to Table 83D-1 described in 120B.3.1.

*SuggestedRemedy*

Change the Value/Comment column for TC9 to "Meet Table 83D-1 constraints with exceptions in 120B.3.1".

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the Value/Comment entry for TC9 to "Meets Table 83D-1 constraints with the exceptions in 120B.3.1".

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Cl 120C SC 120C P 336 L 1 # 259  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D

IS\_SIGNAL.indication primitive is mandaory for chip-to-module 200GAUI-8 and 400GAUI-16, because they are physical instantiations of the PMA service interface, but it is completely missing.

It was also missing in CAUI-4, CAUI-10, and 25GAUI.

SuggestedRemedy

Add a specification of IS\_SIGNAL.indication.  
It is a uni-directional signal from lower PMA to upper PMA.  
It may refer to 120.5.8 Link status for the detail.

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive. How this is communicated between the PMA sublayers is implementation dependent. Consequently, it would be inappropriate to add this here.

Cl 120C SC 120C.1 P 337 L 16 # 506  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120C-2 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 200GAUI-8 chip-to-module application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

Cl 120C SC 120C.1 P 337 L 39 # 507  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120C-3 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 400GAUI-16 chip-to-module application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

Cl 120C SC 120C.2 P 338 L 1 # 161  
Dudek, Mike Cavium

Comment Type E Comment Status D Bucket

Unfortunate line and page break leaving "definitions" on a separate page

SuggestedRemedy

Keep it on the same page as the rest of the title.

Proposed Response Response Status W

PROPOSED ACCEPT.

This is an error in the 802.3 Framemaker template which will be corrected.

Cl 120C SC 120C.3.3 P 338 L 38 # 138  
D'Ambrosia, John Futurewei, Subsidiary

Comment Type E Comment Status D

The sentence is confusing because the BER is specified in 83E.3.3 through a note reference to 83E.1 though the requirement in the .3bs draft states it must meet all requirements in 83E.3.

SuggestedRemedy

Change reference to the BER specified in 83E.3.3 or just modify sentence to - The BER meets the requirement in 120C.1.1.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"The BER meets the requirement in 120C.1.1 rather than that in 83E.1.1." to:

"The BER for the host stressed input test meets the requirement in 120C.1.1 rather than those in 83E.1.1."

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CI 120C SC 120C.3.3 P 338 L 47 # 139  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type E Comment Status D

The sentence is confusing because the BER is specified in 83E.3.3 through a note reference to 83E.1 though the requirement in the .3bs draft states it must meet all requirements in 83E.3.

SuggestedRemedy

Change reference to the BER specified in 83E.3.3 or just modify sentence to - The BER meets the requirement in 120C.1.1.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"The BER meets the requirement in 120C.1.1 rather than that in 83E.1.1." to:

"The BER for the module stressed input test meets the requirement in 120C.1.1 rather than those in 83E.1.1."

CI 120C SC 120C.5.3 P 341 L 13 # 513  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

What is adaptive is equalizer rather than receiver.

SuggestedRemedy

Change the feature column for ADR with "Adaptive equalizer".

Change the Value/Comment column for ADR with "Module equalizer does not use Recommended\_CTLE\_value".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change item entry "ADR" to "ADE"

Change feature entry "Adaptive receiver" to "Adaptive equalizer"

CI 120C SC 120C.5.4.1 P 341 L 28 # 514  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

For item TH2 through TH14, a reference to 120C.3.1 is useless, because it does not provide useful information.

SuggestedRemedy

Change the subclause column as follows:

- TH2 : 83E.3.1.2
- TH3 : 83E.3.1.2
- TH4 : 83E.3.1
- TH5 : 83E.3.1
- TH6 : 83E.3.1.3
- TH7 : 83E.3.1.3
- TH8 : 83E.3.1.3
- TH9 : 83E.3.1, 86A.5.3.2
- TH10 : 83E.3.1.5, 86A.5.3.3
- TH11 : 83E.3.1
- TH12 : 83E.3.1
- TH13 : 83E.3.1
- TH14 : 83E.3.1.6

Proposed Response Response Status W

PROPOSED REJECT.

The reference is to the local subclause which already contains a reference to 83E.3.1 together with any exceptions that are there now or may be added in later versions of the draft.

CI 120C SC 120C.5.4.1 P 341 L 45 # 515  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

For item TH9, the differential termination mismatch is measured over AC cap using a method described in 86A.5.3.2. A reference to the equation may be helpful.

SuggestedRemedy

Change the Value/Comment column for TH9 with "Equation (86A-10) or (86A-11) is less than 10%".

Proposed Response Response Status W

PROPOSED REJECT.

This entry follows that for PICS entry TH9 in 83E.5.4.1. The relevant equations and other details can easily be found via the reference to 120C.3.1.

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**Cl 120C SC 120C.5.4.2 P 342 L 8 # 516**  
 Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type T Comment Status D Bucket**  
 A reference to Pattern 5 and Pattern 3 may be helpful.  
**SuggestedRemedy**  
 Change "Pattern 5, Pattern 3," in the Value/Comment column for TH14 with "Pattern 3 or 5 in Table 86-11".  
**Proposed Response Response Status W**  
 PROPOSED REJECT.  
 The pattern details can be found by following the existing reference chain.

**Cl 120D SC 120D P 344 L 1 # 260**  
 Hidaka, Yasuo Fujitsu Lab of America  
**Comment Type TR Comment Status D**  
 IS\_SIGNAL.indication primitive is mandaory for chip-to-chip 200GAUI-4 and 400GAUI-8, because they are physical instantiations of the PMA service interface, but it is completely missing.  
 It was also missing in CAUI-4, CAUI-10, and 25GAUI.  
**SuggestedRemedy**  
 Add a specification of IS\_SIGNAL.indication.  
 It is a uni-directional signal from lower PMA to upper PMA.  
 It may refer to 120.5.8 Link status for the detail.  
**Proposed Response Response Status W**  
 PROPOSED REJECT.  
 The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive. How this is communicated between the PMA sublayers is implementation dependent.  
 Consequently, it would be inappropriate to add this here.  
 See also comment #261

**Cl 120D SC 120D P 344 L 29 # 172**  
 Dudek, Mike Cavium  
**Comment Type T Comment Status D**  
 Although the GAUI chip to chip interface can be connected to a module (combination PMA/PMD) as shown in figure 120B-1, and 120B-2 (is not the primary target application. It would be better to show the primary target application. (Note that annex 120A does not differentiate between chip to chip and chip to module). (Also see similar comment against 120B)  
**SuggestedRemedy**  
 The GAUI chip to chip filled in link being between the PMA adjacent to the PCS and this new PMA box. The PMA to the PMA adjacent to the PMD link should just be labelled 200GAUI-n or 400GAUI-n(neither chip to chip or chip to module) and either not filled in or maybe striped. At the end of the paragraph at line 21 add the sentences "Although the 200GAUI-4 and 400GAUI-8 chip to chip interfaces are primarily intended for connections between PMA's that are not co-located with the PMD, they can be used between any PMA's. Note that the 200GAUI-n and 400GAUI-n chip to module interfaces specified in Annex 120C and Annex 120E are intended for connection from a PMA to the PMA co-located with the PMD  
**Proposed Response Response Status W**  
 PROPOSED REJECT.  
 The diagram already shows the primary target application. The layer diagram for a chip-to-chip GAUI is the same as that for a chip-to-module GAUI:  
 PCS, PMA, GAUI, PMA, PMD  
 The only difference is in the implementation of the signal connections.  
 This figure is the same as Figure 83D-1 in that regard.

**Cl 120d SC 120d.1 P 344 L 27 # 142**  
 D'Ambrosia, John Futurewei, Subsidiary  
**Comment Type ER Comment Status D Bucket**  
 Diagram (120D-1) can be improved to better communicate the 200GXS functionality.  
**SuggestedRemedy**  
 Move the stack without the extender sublayer to the left column, and the extender sublayer based stack to the right. Move the PCS and PMA for the non-extender sublayer stack to be across from the 200GXS/PMA at the top of the Extender Sublayer Stack side. Keep the bottom PMA / PMD of both stacks in the same location.  
**Proposed Response Response Status W**  
 PROPOSED ACCEPT.

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CI 120D SC 120D.1 P 344 L 27 # 496  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

In Figure 120D-1, DTE 200GXS and PHY 200GXS are not distinguished. Although their specifications are mostly identical, there have clear difference due to the location in the protocol stack.

I think we should not omit the prefix "DTE" or "PHY" whenever their distinction is important or effective so as to remind readers of their distinction and labeling.

SuggestedRemedy

Make the following changes in Figure 120D-1:

Change the upper "200GXS" with "DTE 200GXS".  
 Change the lower "200GXS" with "PHY 200GXS".  
 Add "DTE = DATA TERMINAL EQUIPMENT" at the bottom.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Make the following changes to Figure 120D-1:  
 Change the upper "200GXS" to "DTE 200GXS".  
 Change the lower "200GXS" to "PHY 200GXS".  
 Add "DTE = DATA TERMINAL EQUIPMENT" and "PHY = PHYSICAL LAYER DEVICE" to the list of abbreviations at the foot of the figure.

CI 120D SC 120D.1 P 344 L 35 # 500  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

PCS is labeled inconsistently in Figure 120D-1.

SuggestedRemedy

Change "200 Gb/s PCS" on the left stack with "200GBASE-R PCS".

Proposed Response Response Status W

PROPOSED REJECT.  
 The labeling of the two PCS blocks is intentionally different. The PCS in the left hand block cannot be a 200GBASE-R PCS as in this case, there would not be a 200GXS.

CI 120D SC 120D.1 P 345 L 8 # 497  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

In Figure 120D-2, DTE 400GXS and PHY 400GXS are not distinguished. Although their specifications are mostly identical, there have clear difference due to the location in the protocol stack.

I think we should not omit the prefix "DTE" or "PHY" whenever their distinction is important or effective so as to remind readers of their distinction and labeling.

SuggestedRemedy

Make the following changes in Figure 120D-2:

Change the upper "400GXS" with "DTE 400GXS".  
 Change the lower "400GXS" with "PHY 400GXS".  
 Add "DTE = DATA TERMINAL EQUIPMENT" at the bottom.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Make the following changes to Figure 120D-2:  
 Change the upper "400GXS" to "DTE 400GXS".  
 Change the lower "400GXS" to "PHY 400GXS".  
 Add "DTE = DATA TERMINAL EQUIPMENT" and "PHY = PHYSICAL LAYER DEVICE" to the list of abbreviations at the foot of the figure.

CI 120D SC 120D.1 P 345 L 16 # 501  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

PCS is labeled inconsistently in Figure 120D-2.

SuggestedRemedy

Change "400 Gb/s PCS" on the left stack with "400GBASE-R PCS".

Proposed Response Response Status W

PROPOSED REJECT.  
 The labeling of the two PCS blocks is intentionally different. The PCS in the left hand block cannot be a 400GBASE-R PCS as in this case, there would not be a 400GXS.

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CI 120D SC 120D.1 P 346 L 16 # 504  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120D-3 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 200GAUI-4 chip-to-chip application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.  
 Label the left component as "With upper PMA".  
 Label the right component as "With lower PMA".

Proposed Response Response Status W

PROPOSED REJECT.  
 The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

CI 120D SC 120D.1 P 346 L 33 # 505  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120D-4 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 400GAUI-8 chip-to-chip application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.  
 Label the left component as "With upper PMA".  
 Label the right component as "With lower PMA".

Proposed Response Response Status W

PROPOSED REJECT.  
 The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

CI 120D SC 120D.2 P 345 L 27 # 143  
 D'Ambrosia, John Futurewei, Subsidiary

Comment Type ER Comment Status D Bucket

Diagram (120D-2) can be improved to better communicate the 200GXS functionality.

SuggestedRemedy

Move the stack without the extender sublayer to the left column, and the extender sublayer based stack to the right. Move the PCS and PMA for the non-extender sublayer stack to be across from the 400GXS/PMA at the top of the Extender Sublayer Stack side. Keep the bottom PMA / PMD of both stacks in the same location.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 120D SC 120D.2 P 347 L 29 # 517  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The electrical characteristics of test fixture was specified from 0.05GHz to 25GHz in Equation 93-1 and 93-2 in 93.8.1.1, whereas the informative channel insertion loss is specified from 0.01GHz to 28.05GHz in Equation 120D-1.  
 We need to expand the range of frequency of the characteristics of test fixture.

SuggestedRemedy

Insert the following phrase after "Figure 93-5 and 93.8.1.1":  
 "with the exception of min frequency for the IL and RL specification is 0.01GHz and max frequency of the IL and RL specification is 28.05GHz".

Also, insert the same phrase after "Figure 93-10 and 93.8.2.1".

Proposed Response Response Status W

PROPOSED ACCEPT.  
 This comment was discussed at the 29th August electrical ad hoc, where there was felt to be merit in expanding the range even if it did require re-characterization of existing boards.  
 Change:  
 "are defined in Figure 93-5 and 93.8.1.1, respectively." to:  
 "are defined in Figure 93-5 and 93.8.1.1, respectively, with the exception that the upper frequency for Equation 93-1 and Equation 92-2 is 28.05 GHz."

Change:  
 "are defined in Figure 93-10 and 93.8.2.1, respectively." to:  
 "are defined in Figure 93-10 and 93.8.2.1, respectively, with the exception that the upper frequency for Equation 93-1 and Equation 92-2 is 28.05 GHz."

See also comment #525



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Cl 120D SC 120D.3.1 P 348 L 19 # 23  
 Healey, Adam Broadcom Ltd.

Comment Type TR Comment Status D

The steady state voltage and linear fit pulse peak parameters refer to 94.3.12.5.3. However, 94.3.12.5.3 refers to 94.3.12.5.2 which states that the linear fit pulse is derived using ES1 and ES2 as defined in 94.3.12.5.1. The ES1 and ES2 definition in 120D.3.1.2.1 should be used instead. In fact, all of the exceptions currently listed in 120D.3.1.2 should also apply to the steady state voltage and linear fit pulse peak measurements.

SuggestedRemedy

Insert a new subclause under 120D.3.1 named "Linear fit to the measured waveform" (suggest 120D.3.1.2). The contents of the new subclause include the following paragraph followed by the lettered items a) through c) from the current 120D.3.1.2. "The test procedure in 94.3.12.5.2 is followed to determine the linear fit pulse response, linear fit error, and normalized transmitter coefficient values with the following exceptions." Insert a new subclause onf 120D.3.1 named "Steady-state voltage and linear fit pulse peak" (suggest 120D.3.1.3) with the following contents: "The linear fit pulse, p(k), is determined according to the linear fit procedure in 120D.3.1.2. The steady-state voltage vf is defined to be the sum of the linear fit pulse p(k) divided by M, determined in step 3 of the linear fit procedure." Renumber 120D.3.1.2 accordingly (suggest 120D.3.3). Change the last sentence of the first paragraph of subclause to the following and remove lettered items a) through c): "The transmitter output equalization is characterized using the linear fit method described in 120D.3.1.2). Promote "Transmitter linearity", currently 120D.3.1.2.1, to the same level in the heirarchy as the other transmitter parameters (suggest 120D.3.1.4). The subclasue 120D.3.1.2.2 should be a subclause of the new 120D.3.1.4 (suggest 120D.3.1.4.1). Update all cross-references accordingly, including in Table 120D-1 where the references for steady-state voltage and linear fit pulse peak parameters should now be to 120D.3.1.3. This is expected to clearly incorporate the referenced content with all of the agreed upon exceptions.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120D SC 120D.3.1 P 348 L 24 # 24  
 Healey, Adam Broadcom Ltd.

Comment Type TR Comment Status D

The signal-to-noise-and-distortion ratio parameter refers to 94.3.12.7. However, the stringent 31 dB limit requires a more accurate and repeatable test procedure.

SuggestedRemedy

A presentation will provided with a description and analysis of the proposed test method.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Awaiting presentation and consensus

Cl 120D SC 120D.3.1.1 P 347 L 48 # 131  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

Should not use such an unrepresentative pattern

SuggestedRemedy

Measure jitter with PRBS13Q. Either apply the spec to a subset of emphasis settings, or apply to all emphasis settings but ignore the edges that are not present when emphasis is off.  
 Remove the JP03A test pattern generator and registers.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Further contributions are solicited on jitter measurement using the PRBSQ13 test pattern. This was discussed at the Aug 29th electrical ad hoc where there appeared to be merit in a variant of this approach.

Cl 120D SC 120D.3.1.1 P 347 L 48 # 132  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

If the target BER is 1e-5...

SuggestedRemedy

We should specify J4 jitter rather than J5 jitter.

Proposed Response Response Status W

PROPOSED REJECT.  
 Inadequate remedy supplied. Although there was some discussion on the subject at the August 29th ad hoc no consensus was achieved. A presentation on the subject is solicited.

Cl 120D SC 120D.3.1.1 P 347 L 51 # 162  
 Dudek, Mike Cavium

Comment Type T Comment Status D

measurements of BER are irrelevant to this jitter section

SuggestedRemedy

Delete "BER or"

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 120D SC 120D.3.1.1 P 347 L 53 # 153  
 Dudek, Mike Cavium

Comment Type TR Comment Status D

Crosstalk from the other lanes will not create jitter if they are also transmitting the JP03A test pattern. An uncorrelated pattern is needed on the other lanes. (I have made a separate comment against clause 120 to provide individual lane enablement of JP03A )

SuggestedRemedy

Replace "enabled and transmitting the same pattern with identical transmit equalizer settings" with "enabled with the identical transmit equalizer settings and transmitting pattern 3,5 or scrambled idle"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"enabled and transmitting the same pattern with identical transmit equalizer settings." to: "enabled with the identical transmit equalizer settings and transmitting Pattern 3 or Pattern 5."

However see response to comment #131 because this will need modification if a move back to PRBS13Q is adopted".

Cl 120D SC 120D.3.1.1 P 347 L 53 # 28  
 Healey, Adam Broadcom Ltd.

Comment Type T Comment Status D

It is stated that jitter measurements are performed with transmitters on all lanes enabled and transmitting the same pattern. This implies the aggressor lanes will also be transmitting JP03A. It would be better if they were transmitting a more spectrally rich pattern such as PRBS31Q. Note that the "PRBS pattern testing control" registers (see 45.2.1.124) currently do not permit mixing JP03A on one lane with different test patterns on other lanes. This is the subject of a separate comment.

SuggestedRemedy

Replace the second paragraph of 120D.3.1.1 with the following: "Jitter measurements are performed with transmitters on all lanes enabled and using identical transmitter equalizer settings. Transmitters on lanes not under test transmit PRBS13Q, PRBS31Q, or a valid 200GBASE-R or 400GBASE-R signal. PRBS13Q is described in 120.5.11.2.3 and PRBS31Q is described in 120.5.11.2.4."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

see response to comment #153

Cl 120D SC 120D.3.1.1 P 348 L 24 # 564  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

94.3.12.7 refers to 94.3.12.5.2 which uses QPRBS13; and 94.3.12.5.1, 94.2.9.4, transmitter linearity test pattern; and runs of at least 8 consecutive identical levels.

SuggestedRemedy

Should be PRBS13Q; and PRBS13Q; and runs of at least 6 consecutive identical levels. There may be other corrections / exceptions needed.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add note to "Signal-to-noise-and-distortion ratio (min)" cell in Table 120D-1.

"As exceptions to 94.3.12.7, use the PRBS13Q pattern, and measure the RMS deviation from the mean voltage in a run of at least 6 consecutive identical levels."

Cl 120D SC 120D.3.1.1 P 348 L 28 # 565  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

Should not use such an unrepresentative pattern; should not require such a strange pattern for just one spec item.

Should not rely on Clause 94.

SuggestedRemedy

Either: measure EOJ with PRBS13Q (or a shorter PRBSnQ if we have one) as in D1.4 120E.3.3.2 Even-odd jitter, but with 120D style slicing levels based on 120D.3.1.2.2. Apply the spec to a subset of emphasis settings, or apply to all emphasis settings but ignore the edges that are not present when emphasis is off. This will be a by-product of the SNDR and other jitter measurement, avoiding a separate measurement.

Or, if we think that J\_RMS, J5 (J4), SNDR, and linear fit components provide good enough coverage, remove the EOJ spec.

Remove the JP03B test pattern generator and registers.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Further contributions are solicited on EOJ measurement using the PRBS13Q test pattern. This was discussed at the Aug 29th electrical ad hoc where there appeared to be merit in a variant of this approach

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Cl 120D SC 120D.3.1.2.1 P 349 L 54 # 154  
 Dudek, Mike Cavium  
 Comment Type E Comment Status D Bucket  
 The word signal is split between two pages with a table between the two halves.  
 SuggestedRemedy  
 keep the whole word on one page.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120D SC 120D.3.1.2.1 P 350 L 30 # 30  
 Healey, Adam Broadcom Ltd.  
 Comment Type T Comment Status D  
 The sentence "RLM shall be greater than or equal to 0.95." is unnecessary since it is stated in 120D.3.1 that "the transmitter shall meet the specifications given in Table 120D-1 if measured at TP0a." RLM is one of the specification listed in Table 120D-1.  
 SuggestedRemedy  
 Remove the last sentence of the last paragraph of 120D.3.1.2.1: "RLM shall be greater than or equal to 0.95."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120D SC 120D.3.2.1 P 351 L 33 # 27  
 Healey, Adam Broadcom Ltd.  
 Comment Type T Comment Status D  
 While most are likely to understand what it means for the transmit equalizer to be "turned off", a simple yet more precise requirement can be stated.  
 SuggestedRemedy  
 Replace the phrase "the transmit equalizer turned off" with "Local\_eq\_cm1 and Local\_eq\_c1 set to zero (see 120D.3.1.2)."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 120D SC 120D.3.2.1 P 351 L 37 # 25  
 Healey, Adam Broadcom Ltd.  
 Comment Type TR Comment Status D  
 The jitter parameters CRJrms and CDJ have been replaced by J\_RMS and J5. As a result, the definition of the mapping of measured jitter parameters to sigma\_RJ and A\_DD needs to be modified.  
 SuggestedRemedy  
 Given J\_RMS and J5, specify that  $A\_DD = ((J5/2)+Q5*\sqrt{(Q5^2+1)}*J\_RMS^2 - (J5/2)^2)/(Q5^2+1)$ . This equation assumes that the bounded uncorrelated jitter has a dual-Dirac distribution (as COM also assumes). Given J5 and A\_DD, specify that  $\sigma\_RJ = ((J5/2)-ADD)/Q5$ . Note that Q5 is approximately 4.4172.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 See also comment #163

Cl 120D SC 120D.3.2.1 P 351 L 38 # 163  
 Dudek, Mike Cavium  
 Comment Type T Comment Status D  
 We don't have measurement methods for CRJrms or CDJ.  
 SuggestedRemedy  
 Replace "CRJrms" with "Jrms" and replace "CDJ" with "(J5-4.41\*Jrms)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment #25

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Cl 120D SC 120D.3.2.2 P 352 L 18 # 26  
 Healey, Adam Broadcom Ltd.

Comment Type T Comment Status D

The subclause states that the test procedure for jitter tolerance is the same as the one described in 120D.3.2.1 with the exception that no broadband noise is added. In 120D.3.2.1, items c) through f) pertain to the calculation of the test channel COM but the jitter tolerance specification includes no requirement for test channel COM. It is important to state a COM requirement since there is no other guarantee that the test setup supports the target RS-FEC symbol error ratio even prior to the application of the sinusoidal jitter (insertion loss at the fundamental frequency may not be enough).

SuggestedRemedy

Require that the test channel COM, calculated per items c) through f) in 120D.3.2.1, be at least 3 dB. In addition, for the COM parameter calibration described in item d), require that the test channel transmitter J\_RMS and J5 values are measured with the jitter frequency and amplitude set according to Case E from Table 120D-6.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120D SC 120D.3.2.3 P 352 L 46 # 519  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

In this context, "indicate the requested values" seems relevant.

SuggestedRemedy

Change "indicate the request values" with "indicate the requested values".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120D SC 120D.3.2.3 P 352 L 46 # 518  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

There is no such variable as "Request\_eq\_cm1" or "Request\_eq\_c1".

SuggestedRemedy

Change "Request\_eq\_cm1" with "Requested\_eq\_cm1".  
 Change "Request\_eq\_c1" with "Requested\_eq\_c1".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120D SC 120D.5.3 P 356 L 11 # 520  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Negative description "not applicable" in the Value/Comment column for CHAN may be confusing and may cause an error to choose Yes or No. The term of "PHY manufacturer" is also not clear.

SuggestedRemedy

Change the Value/Comment column for CHAN as follows:

This PICS is for conformance of channel between two PMAs. (A manufacturer responsible only for PMA with this interface may choose "No" for this item.)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Although the term "PHY manufacturer" has been used in previous clauses and Annexes in this context, "PMA manufacturer" is more accurate (for a chip-to-chip link) than "PHY manufacturer"

Change "PHY manufacturer" to "PMA manufacturer"

Cl 120D SC 120D.5.4.3 P 357 L 22 # 521  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

COM parameter for 200GAUI-4 and 400GAUI-8 chip-to-chip is described in 120D.4.

SuggestedRemedy

Change the reference to 83D.4 with a reference to 120D.4

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120D SC 120D.5.4.3 P 357 L 23 # 164  
 Dudek, Mike Cavium

Comment Type T Comment Status D Bucket

It is not appropriate to be calling out clause 83D for COM when this clause has many differences from that COM table.

SuggestedRemedy

Change 83D.4 to 120D.4

Proposed Response Response Status W

PROPOSED ACCEPT.

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CI 120E SC 120E P 358 L 1 # 261  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type TR Comment Status D

IS\_SIGNAL.indication primitive is mandaory for chip-to-module 200GAUI-4 and 400GAUI-8, because they are physical instantiations of the PMA service interface, but it is completely missing.

It was also missing in CAUI-4, CAUI-10, and 25GAUI.

SuggestedRemedy

Add a specification of IS\_SIGNAL.indication.  
 It is a uni-directional signal from lower PMA to upper PMA.  
 It may refer to 120.5.8 Link status for the detail.

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive. How this is communicated between the PMA sublayers is implementation specific. Consequently, it would be inappropriate to add this here..  
 See also comment #260

CI 120E SC 120E P 358 L 1 # 522  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type E Comment Status D Bucket

"Annex 120E (normative)" is not shown in the bookmark of the PDF file.  
 It is inconsistent with other clauses.

SuggestedRemedy

Include "Annex 120E (normative)" in the bookmark text.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 120E SC 120E.1 P 358 L 16 # 508  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120E-2 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 200GAUI-4 chip-to-module application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

CI 120E SC 120E.1 P 358 L 39 # 509  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

Figure 120E-3 is a good place to show the IS\_SIGNAL.indication primitive that is mandatory for 400GAUI-8 chip-to-module application.

SuggestedRemedy

Draw a unidirectional arrow from the right component to left component with a label of IS\_SIGNAL.indication.

Proposed Response Response Status W

PROPOSED REJECT.

The AUI is a physical instantiation of the IS\_UNITDATA\_i.request and PMA:IS\_UNITDATA\_i.indication primitives between two adjacent PMA sublayers. There is no specification for the physical instantiation of the IS\_SIGNAL.indication primitive, so it would be inappropriate to add this to the diagram.

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Cl 120E SC 120E.3.1 P 361 L 47 # 563  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

For a high loss host output with a peak-to-peak voltage of 900 mV as measured with PRBS13Q, the peak-to-peak voltage in service will be greater, by an amount that is more than I expected. It is too much to expect the receiver designer to second-guess this; we should expect the receiver to work with 900 mV for any reasonable pattern.

SuggestedRemedy

Reduce the 900 mV here by a few percent. This makes no difference to a high-loss host. The output swing in a low-loss host might have to be reduced slightly, but that's OK, the module will still have an easier task than with the high-loss host. Reduce the crosstalk amplitude in module output test and host stressed input calibration similarly, as they are also specified with PRBS13Q.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Pending consensus on an adjusted value

Cl 120E SC 120E.3.1 P 361 L 48 # 31  
 Healey, Adam Broadcom Ltd.

Comment Type T Comment Status D

The limit for ESMW appears to be identical to the limit for eye width in all cases. As a result, it seems any measured signal that meets the ESMW requirement will, by definition, also meet the eye width limit. If this is the case, is the eye width specification necessary?

SuggestedRemedy

Remove the eye width requirement if it is not needed.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Pending consensus

Cl 120E SC 120E.3.1 P 361 L 51 # 83  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type T Comment Status D

Based simulation to show feasibility 200GAUI-4/400GAUI-8 C2M were base on hypotitical connector haivng ~1/3 the connector crosstalk specified in 120E.4.1  
[http://www.ieee802.org/3/bs/public/adhoc/elect/24Aug\\_15/dallaire\\_01\\_082415\\_elect.pdf](http://www.ieee802.org/3/bs/public/adhoc/elect/24Aug_15/dallaire_01_082415_elect.pdf)

SuggestedRemedy

Need to verify if current eye width and eye height are feasible with QSFP28 like connector having ~3x the crosstalk. Attach presentation provide background  
[http://www.ieee802.org/3/cd/public/July16/ghiasi\\_3cd\\_02\\_0716.pdf](http://www.ieee802.org/3/cd/public/July16/ghiasi_3cd_02_0716.pdf)  
 Plan to update the presentation as ghiasi\_3bs\_01\_0916.

Proposed Response Response Status W

PROPOSED REJECT.  
 No change to draft proposed

Cl 120E SC 120E.3.1 P 361 L 51 # 33  
 Healey, Adam Broadcom Ltd.

Comment Type TR Comment Status D

Between P802.3bs/D1.2 and P802.3bs/D1.3, the module near-end eye height and width limits were decreased (from 120 mV/400 mUI to 90 mV/265 mUI) after a thorough investigation based on more recent assumptions of requirements (pre-cursor equalization) and device capabilities (see <[http://www.ieee802.org/3/bs/public/16\\_03/hegde\\_3bs\\_01\\_0316.pdf](http://www.ieee802.org/3/bs/public/16_03/hegde_3bs_01_0316.pdf)>and follow-ons). However, the commenter is unaware of any recent verification that the host output eye requirements (50 mV/200 mUI) are achievable with a host transmitter whose capabilities are similar to the those implied by Annex 120D (chip-to-chip 200G/400GAUI-4/8) over representative host channels.

SuggestedRemedy

Verify the limits are still appropriate or adjust them accordingly. A presentation will be provided that explores this issue.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Pending presentation

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CI 120E SC 120E.3.1.6 P 363 L 28 # 523  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The compliance boards for this clause are defined in 120E.2.

SuggestedRemedy

Change the reference to "83E.2" with a reference to "120E.2".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 120E.2 is compliance point definitions  
 this should be 120E.4.1 (HCB/MCB characteristics)  
 Change the reference to "83E.2" to a reference to "120E.4.1".

CI 120E SC 120E.3.1.6 P 363 L 35 # 126  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

This crosstalk generator is intended to represent a module, and generate broadband energy. The spec allows an implementer to achieve the letter of the spec by using a lot of emphasis but miss the intention.

SuggestedRemedy

This transition time spec should be replaced by a slew time spec, e.g. 4.5 ps between +/- 0.1 V. Definition of slew time similar to transition time but with fixed thresholds instead of the signal-dependent 20% and 80%. Same for the counter propagating crosstalk channels during calibration of the module stressed input signal (120E.3.4.1.1). We don't need to change the spec for the crosstalk generator in the opposite direction because that's a slower signal so an implementer won't be using emphasis.

Proposed Response Response Status W

PROPOSED ACCEPT.  
 See also comment #127

CI 120E SC 120E.3.2 P 366 L 32 # 127  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

The module output transition time min. spec is there to protect the module's input from too much crosstalk when connected to a host with more NEXT than the MCB. "Too much" doesn't depend on the module's output amplitude setting, so we should have an absolute spec here not a relative one.

SuggestedRemedy

This transition time spec should be replaced by a slew time spec, e.g. 3.5 ps between +/- 0.1 V. Definition of slew time similar to transition time but with fixed thresholds instead of the signal-dependent 20% and 80%. There is less need to change the transition time spec for the host output because the connector is on the host board, so the NEXT is already in the measurement.

Proposed Response Response Status W

PROPOSED ACCEPT.  
 This was discussed at the 29th August electrical ad hoc and the consensus was that slew time was better than transition time in this context.

CI 120E SC 120E.3.2.1 P 366 L 44 # 524  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The compliance boards for this clause are defined in 120E.2.

SuggestedRemedy

Change the reference to "83E.2" with a reference to "120E.2".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 120E.2 is compliance point definitions  
 this should be 120E.4.1 (HCB/MCB characteristics)  
 Change the reference to "83E.2" to a reference to "120E.4.1".

CI 120E SC 120E.3.2.1 P 366 L 52 # 85  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type T Comment Status D

Target transition time does not say 20-80%

SuggestedRemedy

Add 20% to 80%

Proposed Response Response Status W

PROPOSED ACCEPT. [Editor's note: Clause changed from 129 to 120E and Subclause changed from 129.3.2.1 to 120E.3.2.1]

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CI 120E SC 120E.3.3.2.1 P 370 L 5 # 173  
 Dudek, Mike Cavium

Comment Type TR Comment Status D

The VEC spec was required in other clauses because the module output signal was being tested at the Near end and this protected hosts from modules with large amplitude outputs that were highly distorted that would be difficult to receive after a long host trace. With this clause also specifying the Far end there is no need for this specification for the Module output or having to calibrate to a specific value for the host stressed input test.

SuggestedRemedy

Delete the VEC row in Table 120E-3.

Delete the sentence related to VECP on page 370 line 5.

Delete the heading for section 120E.4.2.1, the initial sentence and Equation 120E-3 and definition of VEC, however retain the definitions of the AVupp etc.

Delete TH14 in the PICS. page 379 line 35

Proposed Response Response Status W

PROPOSED REJECT.

The same comment on an earlier draft was rejected due to "more information needed". No additional information has been supplied.

CI 120E SC 120E.4.1 P 372 L 35 # 86  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type T Comment Status D

We have inconsistency between baseline simulations and what we are referencing for MCB/HCB. The simulations were based on hypothetical connector having ~1/3 the crosstalk [http://www.ieee802.org/3/bs/public/adhoc/elect/24Aug\\_15/dallaire\\_01\\_082415\\_elect.pdf](http://www.ieee802.org/3/bs/public/adhoc/elect/24Aug_15/dallaire_01_082415_elect.pdf)

SuggestedRemedy

Current eye width and eye height may not be met with connector as defined and referenced in 92.11.1 having ~3x the crosstalk. Attach presentation provide background [http://www.ieee802.org/3/cd/public/July16/ghiasi\\_3cd\\_02\\_0716.pdf](http://www.ieee802.org/3/cd/public/July16/ghiasi_3cd_02_0716.pdf)  
 Plan to update the presentation as ghiasi\_3bs\_01\_0916.

Proposed Response Response Status W

PROPOSED REJECT.

No remedy supplied

[Editor's note: Clause changed from 1203 to 120E and Subclause changed from 1203.4.1 to 120E.4.1]

CI 120E SC 120E.4.1 P 372 L 37 # 525  
 Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D

The electrical characteristics of test fixture was specified from 0.01GHz to 25GHz in Equation 92-34 in 92.11.1 and 92-35 in 92.11.2, whereas the informative channel insertion loss is specified from 0.01GHz to 28.05GHz in Equation 120E-1.

We need to expand the range of frequency of the characteristics of test fixture.

SuggestedRemedy

Insert the following phrase after "TP2 or TP3 test fixture":  
 "with the exception of max frequency of the IL and RL specification is 28.05GHz".

Also, insert the same phrase after "the cable assembly test fixture".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"as the TP2 or TP3 test fixture." to:

"as the TP2 or TP3 test fixture with the exception that the upper frequency for Equation 92-38 and Equation 92-34 is 28.05 GHz."

Also, change "cable assembly test fixture." to:

"cable assembly test fixture with the exception that the upper frequency for Equation 92-38 and Equation 92-35 is 28.05 GHz."

See also response to comment #517

CI 120E SC 120E.4.2 P 372 L 46 # 165  
 Dudek, Mike Cavium

Comment Type T Comment Status D

It is ambiguous as to what the eye probabilities are related to. (symbols, bits or individual eyes).

SuggestedRemedy

At line 46 add the sentence. Unless specified otherwise the probabilities are relative to the 3 individual eyes not the total PAM4 symbol.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add the suggested sentence before "The following procedure..."



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Cl 120E SC 120E.4.2 P 373 L 4 # 32  
Healey, Adam Broadcom Ltd.

Comment Type E Comment Status D

In item 3), the phrase "as a distance of from the center of the eye" would be better stated as "as a function of the distance from the center of the eye". The CDF is related to this distance but is not the distance itself. See similar instances in items 4) and 7).

SuggestedRemedy

Replace the phrase "as a distance" with "as a function of the distance" in each instance cited in the comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120E SC 120E.5.3 P 378 L 6 # 166  
Dudek, Mike Cavium

Comment Type T Comment Status D

There are not 8 lanes for 200GAUI-4

SuggestedRemedy

Add the 4 lane option for 200GAUI-4 and make the existing 8 lanes for 400GAUI only

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change to: "Four independent data paths in each direction for 200GAUI-4 and eight independent data paths in each direction for 400GAUI-8"

Cl 120E SC 120E.5.4.1 P 378 L 42 # 526  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

For item TH9, the differential termination mismatch is measured over AC cap using a method described in 86A.5.3.2. A reference to the equation may be helpful.

SuggestedRemedy

Change the subclause column for TH9 from "120E.3.1" to "120E.3.1.4, 86A.5.3.2".

Change the Value/Comment column for TH9 from "Less than 10%" to "Equation (86A-10) or (86A-11) is less than 10%".

Proposed Response Response Status W

PROPOSED REJECT.

PICS items normally reference the local clause even if that clause then references a different clause - this ensures the PICS is valid even if the local clause changes.

Cl 120E SC 120E.5.4.1 P 378 L 54 # 167  
Dudek, Mike Cavium

Comment Type T Comment Status D Bucket

There is no specification for Vertical eye closure for the host output in Table 120E-1 There shouldn't be a PICS item for it.

SuggestedRemedy

Delete TH14 on page 378 line 54.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 120E SC 120E.5.4.2 P 379 L 20 # 527  
Hidaka, Yasuo Fujitsu Lab of America

Comment Type T Comment Status D Bucket

For item TM7, the differential termination mismatch is measured over AC cap using a method described in 86A.5.3.2. A reference to the equation may be helpful.

SuggestedRemedy

Change the subclause column for TM7 from "120E.3.1" to "120E.3.1.4, 86A.5.3.2".

Change the Value/Comment column for TM7 from "Less than 10%" to "Equation (86A-10) or (86A-11) is less than 10%".

Proposed Response Response Status W

PROPOSED REJECT.

See response to comment #526

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 121 SC 121.7.1 P 218 L 16 # 567  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

The SMSR spec has been described variously as a diagnostic, a component level spec for buying lasers to make into PMDs, an early warning, a comfort blanket / included by default, or something that can be measured relatively easily in a component lab. Any SMSR problems will contribute to TDECQ - but we haven't quantified them. The effect of SMSR will depend strongly on the amount of dispersion which varies from one PMD to another and lane to lane, and on laser technology. We should not obstruct innovative implementations.

SuggestedRemedy

Make the SMSR limit a recommendation not a PICS requirement. All optical PMDs in this project.

Proposed Response Response Status W

PROPOSED REJECT.  
 In response to similar comments, #219 and #221, to draft 1.0, it was agreed not remove the SMSR limit with the following justification  
 "Measuring SMSR is not required - it must pass if it is measured. The background of this spec is related to unstable laser performance, probably being very temperature sensitive. Even though measuring SMSR in a DWDM environment is less straightforward than in Clause 122, it is believed that this parameter should be specified.  
 30 dB value for SMSR is considered to be an appropriate value for this interface."

Cl 121 SC 121.7.1 P 218 L 31 # 566  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

Does the extinction ratio matter much in PAM4?

SuggestedRemedy

Unless it's important, reduce the limit to 3 dB, or as appropriate, for each optical PMD.

Proposed Response Response Status W

PROPOSED REJECT.  
 Commenter is invited to demonstrate that there is a need to relax the ER for this PMD and that this will not impact the ability of receivers to meet the sensitivity requirements.

Cl 121 SC 121.7.1 P 218 L 33 # 130  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

Now we have a TDECQ spec, we should look again at the RIN spec. The effect of RIN is included in TDECQ; the acceptable level of RIN depends strongly on other transmitter impairments. All we could "require" in a spec is the amount of RIN that would create substantially all of the TDECQ limit, which I don't think is this number. It would be hard to "recommend" any number without making assumptions on behalf of all future transmitter implementers that we can't justify.

As 52.9.6 says "This procedure describes a component test that may not be appropriate for a system level test depending on the implementation. If used..." and "In order to measure the noise, the modulation to the DUT is turned off." A transmitter that's trying to deliver 4 well-spaced PAM4 levels can't be expected to do anything in particular if the modulation to the DUT is turned off!

SuggestedRemedy

As we no longer need a RIN spec and it would be difficult to choose a recommended value - delete the RIN22.8OMA row in Table 121-6, and in Table 121-10. Delete 121.8.7. In 121.8.5.1 and 121.8.5.2, we could change "The state of polarization of the back reflection is adjusted to create the greatest RIN" to "The state of polarization of the back reflection is adjusted for the greatest TDECQ". Similarly in clauses 122, 124.

Proposed Response Response Status W

PROPOSED REJECT.  
 Insufficient justification in the comment and incomplete Remedy proposal. The commenter is invited to bring in a presentation clarifying why a RIN spec is no longer needed and why the current specification in draft 2.0 is broken. The transmitter RIN spec is intended to screen out potentially bad transmitters even if the noise correction required by the TDECQ test is not very accurate.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 121 SC 121.7.2 P 219 L 11 # 123  
 Lewis, David Lumentum

Comment Type T Comment Status D

Table 121-7. The value for damage threshold is unnecessarily high at 3 dB above the maximum average receive power. Having such a high value makes it more difficult to find a source with sufficient power to do the test. Other SMF standards, such as 100GBASE-LR4/-ER4 (Table 88-8) have set the damage threshold at 1 dB above the maximum average receive power.

SuggestedRemedy

Change the threshold from 6.5 dBm to 4 dBm.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In line with discussions during the SMF Ad Hoc on 30 August 2016:

Change the damage threshold from 6.5 dBm to 4 dBm

unless there is a significant risk of accidental misconnection of these PMDs with others with higher maximum average transmit power.

Cl 121 SC 121.7.3 P 219 L 47 # 84  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type T Comment Status D

Current -45 dB RL require APC connector and may not support installed based.

SuggestedRemedy

Standard should allow reducing the number of connectors from 4 as defiend for operation with -45 dB RL to -35 dB with 2 connectors.

Adhoc contribution

[http://www.ieee802.org/3/bs/public/adhoc/smf/16\\_08\\_16/anslow\\_01\\_0816\\_smf.pdf](http://www.ieee802.org/3/bs/public/adhoc/smf/16_08_16/anslow_01_0816_smf.pdf)  
 inducate to support 2 connector the RL for each connector must be -39 dB. This is close enough to either the MPI budget or trade connector loss as few are used with MPI.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment was discussed during the SMF Ad Hoc on 30 August 2016, where there was general support for the change described below.

Change 121.11.2.2, 122.11.2.2, and 124.11.2.2 to contain tables giving the maximum value for each discrete reflectance for a variety of numbers of discrete reflectances above -55dB, according to [http://www.ieee802.org/3/bs/public/adhoc/smf/16\\_08\\_30/anslow\\_03\\_0816\\_smf.pdf](http://www.ieee802.org/3/bs/public/adhoc/smf/16_08_30/anslow_03_0816_smf.pdf) with editorial license.

Cl 121 SC 121.7.3 P 219 L 47 # 82  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type T Comment Status D

Current -45 dB RL require APC connector and may not support installed based.

SuggestedRemedy

Standard should allow reducing the number of connectors from 4 as defiend for operation with -45 dB RL to -35 dB with 2 connectors.

Adhoc contribution

[http://www.ieee802.org/3/bs/public/adhoc/smf/16\\_08\\_16/anslow\\_01\\_0816\\_smf.pdf](http://www.ieee802.org/3/bs/public/adhoc/smf/16_08_16/anslow_01_0816_smf.pdf)  
 inducate to support 2 connector the RL for each connector must be -39 dB. This is close enough to either the MPI budget or trade connector loss as few are used with MPI.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Same comment as #84

Cl 121 SC 121.8.3 P 225 L 5 # 570  
 King, Jonathan Finisar

Comment Type T Comment Status D

Equation 121-5 needs two corrections

SuggestedRemedy

The divisor  $\text{sq\_rt}(2 \text{ pi})$  should be  $\text{sigma\_g} \times \text{sq\_rt}(2 \text{ pi})$ , and the divisor  $\text{sigma\_g}$  in the exponent should be  $2 \text{ sigma\_g}$

Proposed Response Response Status W

PROPOSED ACCEPT.

[Editor's note: This comment was sent after the close of the comment period]

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 121 SC 121.8.5 P 221 L 37 # 129  
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

This SSPRQ pattern will give inconsistent results when testing a range of transmitters.

SuggestedRemedy

If we can find a less extreme pattern that better achieves the objective of allowing TDEC measurements that correlate to the TDP we don't want to measure at line rate, change to that pattern.

If we can't, use PRBS13Q, which is much more representative, for TDECQ testing. Tell the implementer to be careful about low frequency effects. Similarly in clauses 122, 124.

Proposed Response Response Status W

PROPOSED REJECT.  
 Incomplete remedy.

The commenter is invited to bring in a proposal for an alternative pattern that allows TDECQ measurements that correlate to the TDP. One of the patterns for measurement of TDEC in Clause 95 is PRBS31 and the SSPRQ pattern is made up of segments of PRBS31.

Cl 121 SC 121.8.5.1 P 222 L 1 # 151  
 Dudek, Mike Cavium

Comment Type TR Comment Status D

The pattern being used on the other lanes is not specified. In order to properly account for crosstalk this should be an un-correlated pattern.

SuggestedRemedy

Add "transmitting and receiving patterns 3, 4, 5 or a valid 200GBASE-R signal."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 For discussion in the Task Force.  
 Making this change would require per-lane control of the SSPRQ pattern and affects comments #305 and #148.

Cl 121 SC 121.8.5.3 P 225 L 22 # 56  
 Laubach, Mark Broadcom Limited

Comment Type E Comment Status D Bucket

Need a period at end of the sentence. Same for Line 45-45.

SuggestedRemedy

As per comment.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 The IEEE Style Manual 15.3 does not show any punctuation at the end of lines in the "where" section.  
 Remove the "." after "GHz" on line 34.

Cl 121 SC 121.8.5.4 P 225 L 49 # 74  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type TR Comment Status D

Baseline reference EQ requiring T/2 sample put unnecessary burden for any digital implementation where T spaced can perform as well.

SuggestedRemedy

Replace 5 tap T/2 with 7 tap T-spaced

Proposed Response Response Status W

PROPOSED REJECT.  
 Insufficient justification for the proposed modification.  
 In line with discussions at the SMF Ad Hoc on 30 August, the commenter is invited to provide a detailed presentation with adequate justification for the proposed modification, providing more information on whether there are impairments that a T/2 spaced equaliser can compensate that a T-spaced equaliser cannot.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 121 SC 121.8.5.4 P 225 L 50 # 569  
 Hanan, Leizerovich MultiPhy

Comment Type T Comment Status D

Reference equalizer implementation is not specifically stated.  
 This may cause several problems, especially if the reference equalizers used for Rx and for Tx are implemented differently between two different vendors, causing their modules not to interop with one another.  
 Bad equalizer implementation may assist modules to pass SRS on the Rx side, as the eye is seems falsely closed, although it can be opened more using a better equalizer, while the same Rx will not pass with actual TX signals.

*SuggestedRemedy*

Suggest a specific reference equalizer implementation.  
 Possible example implementation is minimum MSE between the signal and an ideal PAM-4 signal with the same OMA as the measured signal (inner levels at 0, OMA/3 and 2\*OMA/3).

Proposed Response Response Status W

PROPOSED REJECT.  
 121.8.5.3 TDECQ measurement method already says that the equalizer is set to minimize TDECQ:  
 "The reference equalizer (specified in 121.8.5.4) is used to minimize the value of TDECQ derived from the captured waveform."  
 [Editor's note: Comment type set to T and this comment was sent after the close of the comment period]

CI 121 SC 121.8.7 P 226 L 11 # 152  
 Dudek, Mike Cavium

Comment Type TR Comment Status D

Table 121-9 specifies that the QPRBS13 pattern is used for measuring RIN. However 121.8.7 refers to a test methodology in clause 52.9.6 that is not appropriate for use with that pattern. 52.9.6 specifies an NRZ square wave pattern and uses an O/E convertor AC coupled into an electrical power meter.  
 If a slow PAM4 pattern where used the denominator for the RIN calculation would be a factor of 2/3 smaller than with the NRZ pattern Note that the square wave pattern was originally chosen because it spends little percentage time in transitions and therefore the average power measured is close to (OMA/2) squared. Using a pattern with a lot of transitions means that the risetimes will affect the measurement.

*SuggestedRemedy*

In Table 121-9 Change the RIN row to say NRZ square wave. Or better create a new section for measuring RIN using scope measurements with the QPRBS13 patten by measuring the noise on the 4 different static levels of the pattern and calculating the RIN from those numbers and the OMA and remove the reference to 52.9.6

Make similar changes to the other PAM4 optical clauses.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Comment is reasonable but remedy provided is inadequate.  
 To be discussed in the Task Force meeting.

CI 121 SC 121.8.9.1 P 226 L 46 # 168  
 Dudek, Mike Cavium

Comment Type T Comment Status D

It is going to be extremely difficult to generate two thirds of the dB value of SECQ using a four order Bessel filter when a 5 tap FIR filter is equalizing the effect of the filter.

*SuggestedRemedy*

Set the bandwidth of the filter to a fixed bandwidth somewhat narrower than the expected fiber bandwidth and Tx worst case expected risetime combination. 15GHz may be a reasonable value. Make equivalent changes on page 228 line 5.

Make similar changes to the other optical clauses using an equalizer.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 This comment was discussed at the SMF Ad Hoc on 30 August where it was suggested that reducing the proportion of the dB value of SECQ that is required to be produced by the combination of the low-pass filter and the E/O converter might be a better option than fixing the filter bandwidth.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 121 SC 121.8.9.1 P 227 L 28 # 90  
Trowbridge, Steve Nokia

Comment Type E Comment Status D Bucket

The line beginning the arrow from the Bessel Thompson filter to the E/O converter crosses into the box instead of beginning at the edge of the box, and the line beginning the arrow from the summing function to the Bessel Thompson filter crosses into the circle around the plus sign

SuggestedRemedy

Tidy up the figure and have the arrows start at the edge of the element they originate from

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 121 SC 121.8.9.2 P 227 L 49 # 158  
Dudek, Mike Cavium

Comment Type E Comment Status D

The Sentence below does not belong in this section. It should be merged into 121.8.9.1 "An example stressed receiver conformance test setup is shown in Figure 121-6; however, alternative test setups that generate equivalent stress conditions may be used.

SuggestedRemedy

Delete the sentence here and add it to the beginning of the 2nd paragraph of 121.8.9.1

Proposed Response Response Status W

PROPOSED REJECT.

121.8.9.1 is "Stressed receiver conformance test block diagram" which just explains the diagram and already contains a pointer to Figure 121-6. However, 121.8.9.2 "Stressed receiver conformance test signal characteristics and calibration" defines how the stressed signal is created and is the right place to state that "alternative test setups that generate equivalent stress conditions may be used".

Cl 121 SC 121.8.9.2 P 228 L 12 # 169  
Dudek, Mike Cavium

Comment Type T Comment Status D

What square wave pattern?

SuggestedRemedy

Add the NRZ square wave pattern to be used for jitter calibration to table 121-9 and 121-10 or locally define it here as a pattern with 8 3's followed by 8 1's.

Make similar changes to the other PAM4 optical clauses.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"while transmitting the square wave pattern" to:

"while transmitting a square wave pattern of 8 3's followed by 8 0's"

Cl 121 SC 121.8.9.2 P 228 L 17 # 57  
Laubach, Mark Broadcom Limited

Comment Type E Comment Status D Bucket

Following Strunk and White: a semi-colon is used when there is not a conjunction. So either remove the ";" or the "and", but don't keep both.

SuggestedRemedy

As per comment.

Proposed Response Response Status W

PROPOSED REJECT.

The IEEE Editorial Style Manual contains an example:

"The carrier-phonon interaction matrices are given by: 1) polar optical phonons; 2) deformation potential optical phonons; and 3) piezoelectric acoustic phonons."

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 121 SC 121.10 P 231 L 39 # 75  
 Ghiasi, Ali Ghiasi Quantum LLC  
 Comment Type TR Comment Status D  
 Optical return loss condition not definiend  
 SuggestedRemedy  
 Need to define if the far end cable terminated or not.  
 The 39 dB return loss indicate end point is not terminated into the TX or RX having 26 dB return loss  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 [Editor's note: Subclause changed from 121.1 to 121.10]  
 This subclause is about the channel, not the combination of the channel and the transmitter/receiver. Transmitter and receiver return loss values are specified in Tables 121-7 and 121-8

Cl 121 SC 121.11.2.2 P 232 L 34 # 77  
 Ghiasi, Ali Ghiasi Quantum LLC  
 Comment Type TR Comment Status D  
 Standard does not support existing defined Ethernet cable plant  
 SuggestedRemedy  
 Consider supporting 2 connector having 35 dB return loss  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment #84

Cl 121 SC 121.10 P 231 L 41 # 58  
 Laubach, Mark Broadcom Limited  
 Comment Type E Comment Status D Bucket  
 Need a period at end of "b" table footnote after "nm".  
 SuggestedRemedy  
 As per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 121 SC 121.11.1 P 232 L 19 # 20  
 Flatman, Alan LAN Technologies  
 Comment Type E Comment Status D  
 Note a under Table 121-14 refers to TIA 568-C.3. It should also refer to the International equivalent, ISO/IEC 11801-1 (Edition 3), which is currently at DIS stage (copied below).  
 SuggestedRemedy  
 Add reference to Cabled OS2 singlemode fibre specified in ISO/IEC 11801-1 (currently at DIS stage).  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Attachment is flatman\_3bs\_01\_0916.pdf in http://www.ieee802.org/3/bs/comments/P802d3bs\_D2p0\_attachments.zip]  
 The IEC web site has the target date of 15 Feb 2017 for "DEC" stage (Draft at Editing Check). Also, flatman\_3bs\_01\_0916.pdf shows an attenuation of 0.4 dB/km rather than the value of 0.5 dB/km as in Table 121-14.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 122 SC 122.1 P 239 L 1 # 558  
Booth, Brad Microsoft

Comment Type TR Comment Status D

400GBASE-FR8 does not satisfy broad market potential or economic feasibility. It is well understood in the Ethernet industry that all solutions for 2 km optical PMDs are considered "client" or "grey" optics. These PMDs must be able to satisfy the faceplate density requirements (32 ports per 1 RU) to be considered economically feasible. The current power estimations for 400GBASE-FR8 does not permit the PMD to meet the power envelope or cost requirements needed to satisfy this requirement. Because the PMD will not be economically feasible, it is therefore unlikely to have broad market potential.

SuggestedRemedy

Two options:

- 1) Delete 400GBASE-FR8 from the draft and remove the objective from the project.
- 2) Consider other options that will result in a solution that satisfies the economic feasibility and broad market potential requirements.

As #2 is highly unlikely at this point in time, option #1 is the preferred suggested remedy.

Proposed Response Response Status W

PROPOSED REJECT.

Based on data presented that supported the development of the responses to the Broad Market Potential and Economic Feasibility Criteria, the Study Group and subsequently the 802.3 WG approved these responses. This data covered the solution that was eventually adopted by the Task Force and is specified in P802.3bs Draft 2.0.

The SMF objective for 2km was adopted based on data presenting its need across multiple applications. This need across multiple application areas is noted in the Broad Market Potential Response in the IEEE P802.3bs CSD (<https://mentor.ieee.org/802-ec/dcn/16/ec-16-0057-00-ACSD-802-3bs.pdf>). The commenter notes a specific implementation of faceplate density (32 ports per 1 RU) as a requirement that must be satisfied. However, the stated requirement is not supported by reference to an existing presentation or new data that demonstrates this requirement across the different application areas that have been noted in the Broad Market Potential Response.

Additionally, the commenter used the noted implementation for determining a power envelope and cost requirements for the optical solutions, and then continues with statements regarding "current power estimations." However, the commenter has not provided any reference to an existing presentation or new data regarding the power envelope, cost requirements, or "current power estimations" that can be considered.

CI 122 SC 122.7.1 P 249 L 20 # 111  
King, Jonathan Finisar

Comment Type T Comment Status D

The current 'average power (max)' spec value for 400GBASE-FR8 and 400GBASE-LR8 would require the ER to be higher than the specified minimum for a high OMA Tx (e.g. at max Tx\_OMA). Follow the precedent in Table 122-9 to allow the minimum ER to be used at the max Tx\_OMA value. This will help yield and manufacturability.

SuggestedRemedy

In Table 122-10: In the 'Average power (max)' row unmerge the spec value cell and put the value 5.7 into the column for 400GBASE-FR8, and 5.9 into the column for 400GBASE-LR8

Proposed Response Response Status W

PROPOSED REJECT.

The Hazard level 1 limit for SMF at 1310 nm from IEC60825-2 2010 Table D.1 is 14.1 dBm, so it is not feasible to increase the Total average launch power (max) above the current value of 13.2 dBm without changing to Hazard level 1M.

Increasing the Average launch power, each lane (max) for 400GBASE-FR8 from 4.2 dBm to 5.9 dBm would require a maximum power of less than 4.2 dBm for the other lanes if any lane is above 4.2 dBm. For example, if 2 lanes are at 5.9 dBm, the other 6 lanes must be below 3.4 dBm, or if 4 lanes are at 5.9 dBm the other 4 lanes must be below 1.2 dBm. Making this change would also require an increase in the Average receive power, each lane (max) and Damage thresholds in Table 122-12.

For further discussion in the Task Force meeting.

CI 122 SC 122.7.3 P 252 L 8 # 17  
Swanson, Steven Corning Incorporated

Comment Type TR Comment Status D

In Table 122-13, the channel insertion loss for 200GBASE-LR4 and 400GBASE-LR8 is specified at 6.3 dB. However 10km x 0.46 dB/km plus the 2.0 dB allocation for connectors = 6.6 dB.

SuggestedRemedy

Change the channel insertion loss for 200GBASE-LR4 and 400GBASE-LR8 in Table 122-13 to 6.6 dB.

Proposed Response Response Status W

PROPOSED REJECT.

This comment was discussed during the SMF Ad Hoc on 30 August 2016, where there was no consensus on increasing the loss budget of the 10km 8 channel interface. To be further debated at the Task Force meeting.



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CI 122 SC 122.7.3 P 252 L 23 # 78  
 Ghiasi, Ali Ghiasi Quantum LLC  
 Comment Type TR Comment Status D  
 It would be beneficial to support legacy Ethernet cable plant having 26 dB RL  
 SuggestedRemedy  
 Suggest reducing the number to connector to 2 for cable plant having return loss of 26 dB  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Clause changed from 12 to 122 and Subclause changed from 12.7.3 to 122.7.3]  
 See response to comment #84

CI 122 SC 122.8.5.4 P 256 L 7 # 76  
 Ghiasi, Ali Ghiasi Quantum LLC  
 Comment Type TR Comment Status D  
 Baseline reference EQ requiring T/2 sample put unnecessary burden for any digital implementation where T spaced can perform as well.  
 SuggestedRemedy  
 Replace 5 tap T/2 with 7 tap T-spaced  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See response to comment #74

CI 122 SC 122.8.9.3 P 258 L 14 # 91  
 Trowbridge, Steve Nokia  
 Comment Type E Comment Status D Bucket  
 The line beginning the arrow from the Bessel Thompson filter to the E/O converter crosses into the box instead of beginning at the edge of the box, and the line beginning the arrow from the summing function to the Bessel Thompson filter crosses into the circle around the plus sign  
 SuggestedRemedy  
 Tidy up the figure and have the arrows start at the edge of the element they originate from  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 122 SC 122.10 P 260 L 43 # 73  
 Ghiasi, Ali Ghiasi Quantum LLC  
 Comment Type TR Comment Status D  
 Optical return loss condition not defined  
 SuggestedRemedy  
 Need to define if the far end cable terminated or not.  
 The 29 dB and 27 dB return loss indicate end point is not terminated into the TX or RX having 26 dB return loss  
 Proposed Response Response Status W  
 PROPOSED REJECT. [Editor's note: Subclause changed from 122.1 to 122.10]  
 See response to comment #75

CI 122 SC 122.11.1 P 261 L 20 # 125  
 Lewis, David Lumentum  
 Comment Type T Comment Status D  
 Cabled optical fiber attenuation (max) is 0.46 or 0.5 dB/km. The note says that 0.46 dB/km is at 1272.55 nm but the shortest wavelength for 200GBASE-FR4 is 1264.5 nm and the loss should be 0.47 dB/km (see Table 87-15).  
 SuggestedRemedy  
 Change the value in the table to 0.47 or 0.5. Change note a to say "The 0.47 dB/km at 1264.5 nm attenuation.....".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 122 SC 122.11.1 P 261 L 27 # 21  
 Flatman, Alan LAN Technologies  
 Comment Type E Comment Status D  
 Note b under Table 122-18 refers to TIA 568-C.3. It should also refer to the International equivalent, ISO/IEC 11801-1 (Edition 3), which is currently at DIS stage (copied below).  
 SuggestedRemedy  
 Add reference to Cabled OS2 singlemode fibre specified in ISO/IEC 11801-1 (currently at DIS stage).  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Attachment is flatman\_3bs\_01\_0916.pdf in http://www.ieee802.org/3/bs/comments/P802d3bs\_D2p0\_attachments.zip]  
 See response to comment #20

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 122 SC 122.11.2.1 P 261 L 39 # 63  
 Anslow, Pete Ciena

Comment Type T Comment Status D Bucket

"The maximum link distance for 200GBASE-LR4 and 400GBASE-FR8 is based on an allocation of 3 dB ." should be:  
 "The maximum link distance for 200GBASE-FR4 and 400GBASE-FR8 is based on an allocation of 3 dB ."  
 i.e. the second occurrence of "200GBASE-LR4 " in this paragraph should be "200GBASE-FR4 "

SuggestedRemedy

Change the second occurrence of "200GBASE-LR4 " in 122.11.2.1 to "200GBASE-FR4 "

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 122 SC 122.11.2.1 P 261 L 39 # 15  
 Swanson, Steven Corning Incorporated

Comment Type E Comment Status D Bucket

Incorrect reference

SuggestedRemedy

Replace "The maximum link distance for 200GBASE-LR4 and 400GBASE-FR8 is based on an allocation of 3 dB total connection and splice loss." with "The maximum link distance for 200GBASE-FR4 and 400GBASE-FR8 is based on an allocation of 3 dB total connection and splice loss."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 122 SC 122.11.2.2 P 261 L 45 # 79  
 Ghiasi, Ali Ghiasi Quantum LLC

Comment Type TR Comment Status D

It would be beneficial to support legacy Ethernet cable plant having 26 dB RL

SuggestedRemedy

Suggest reducing the number to connector to 2 for cable plant having return loss of 26 dB

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #84

Cl 122 SC 122.11.2.2 P 261 L 46 # 66  
 Anslow, Pete Ciena

Comment Type T Comment Status D Bucket

"and six for 200GBASE-FR4 and 400GBASE-LR8." should be:  
 "and six for 200GBASE-LR4 and 400GBASE-LR8."

SuggestedRemedy

Change:  
 "and six for 200GBASE-FR4 and 400GBASE-LR8." to:  
 "and six for 200GBASE-LR4 and 400GBASE-LR8."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 122 SC 122.11.3 P 262 L 3 # 59  
 Laubach, Mark Broadcom Limited

Comment Type E Comment Status D Bucket

Should there be a ", or" at the end of a)?

SuggestedRemedy

Consider putting ", or" if needed as per comment.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

[Editor's note: Page changed from 2262 to 262]

This list follows the format of the IEEE style manual and the in-force standard in 87.11.3, 88.11.3, 89.10.3.

Delete the ";" and "." from the list in 121.11.3

Delete the two "." from the list in 123.11.3

Delete the ";" and "." from the list in 124.11.3

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 123 SC 123.1 P 269 L 1 # 559  
Booth, Brad Microsoft

Comment Type TR Comment Status D

400GBASE-SR16 requires twice the number of fibers as two 200GBASE-SR4; therefore, it does not satisfy the balanced cost requirement of economic feasibility. Because the PMD does not meet the economically feasibility, it is unlikely to have broad market potential.

SuggestedRemedy

Two options:

- 1) Delete 400GBASE-SR16 from the draft and remove the objective from the project.
- 2) Modify the PMD to be 400GBASE-SR8 based on the same technology proposed for 200GBASE-SR4.

As #1 is highly unlikely at this point in time, option #2 is the preferred suggested remedy.

Proposed Response Response Status W

PROPOSED REJECT.

As noted in the Economic Feasibility response, "the project will examine alternatives that trade off between PMD complexity and the number of fibers in order to maintain a reasonable balance between these two costs." The selection examined these tradeoffs and concluded that the cost balance for this PMD is reasonable. The PMD specifications have been developed in the light of the state of technology for MMF optics. In addition the PMD specs potentially allow optical interface compatibility between individual lanes of 25GBASE-SR, 100GBASE-SR4 and 400GBASE-SR16.

Cl 123 SC 123.7 P 276 L 4 # 134  
Moffitt, Bryan CommScope

Comment Type ER Comment Status D

TIA-492AAAE wideband fiber satisfies OM4 and should be referenced

SuggestedRemedy

Add Wideband fiber of TIA-492AAAE as supported media and add a row to table 123-5: 0.5 m to 100 m for wideband TIA-492AAAE fiber.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 68

Cl 123 SC 123.7 P 276 L 4 # 68  
Kolesar, Paul CommScope

Comment Type TR Comment Status D

TIA has published TIA-492AAAE, the detailed fiber specification for what is referred to in ANSI/TIA-568.3-D as wideband multimode fiber. This fiber is compliant and superior to type A1a.3 (OM4) and will support the 400GBASE-SR16 PMD at least as well as OM4. Therefore it should be included as a recognized media type.

SuggestedRemedy

Add the fiber by replacing the second sentence of the clause as follows: A 400GBASE-SR16 compliant PMD operates on 50/125 µm multimode fibers, type A1a.2 (OM3), type A1a.3 (OM4) or cabling made with wideband fiber compliant to TIA-492AAAE, according to the specifications defined in Table 123-6.

Note: IEC and ISO are in the midst of standardizing wideband fiber and cabling. It is anticipated that IEC type designation and ISO OMx designation will be known well before the P802.3bs amendment is published. Should that come to fruition, the terminology can be made common across all three types.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace the second sentence of 123.7 with:

"A 400GBASE-SR16 compliant PMD operates on 50/125 µm multimode fibers, type A1a.2 (OM3), type A1a.3 (OM4) or wideband fiber compliant to TIA-492AAAE, according to the specifications defined in Table 123-6."

Make other changes as described in pages 5 to 8 in the presentation [http://www.ieee802.org/3/bs/public/16\\_09/king\\_3bs\\_01\\_0916.pdf](http://www.ieee802.org/3/bs/public/16_09/king_3bs_01_0916.pdf), with editorial license.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 123 SC 123.7 P 276 L 4 # 106  
 Shariff, Masood CommScope

Comment Type TR Comment Status D

TIA-492-AAAE for WBMMF has been published since June 2016. Parallel specifications are under development in IEC 86A. TIA-568-3-D has recognized WBMMF and is on the verge of publication. ISO 11801-1 has also added this Cabling Category to the DIS standard currently under ballot.

IEEE 802.3bs should recognize this advance in MM optical fiber cabling that can support 400GBASE-SR16 at 850 nm while also enabling future windows between 850 nm and 953 nm.

SuggestedRemedy

Add 50/125 WBMMF as an option since this type of fiber will support 400GBASE-SR16

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 68

CI 123 SC 123.7 P 276 L 10 # 113  
 King, Jonathan Finisar

Comment Type T Comment Status D

The TIA have published the spec for wideband MMF, we should include it in the listed media for 400GBASE-SR16.

SuggestedRemedy

Add a row for wideband MMF in Table 123-5. Add a column for wideband MMF in Tables 123-6 and Table 123-7. See presentation 'king\_3bs\_01\_0916.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 68

CI 123 SC 123.7 P 276 L 15 # 69  
 Kolesar, Paul CommScope

Comment Type TR Comment Status D

TIA has published TIA-492AAAE, the detailed fiber specification for what is referred to in ANSI/TIA-568.3-D as wideband multimode fiber. This fiber is compliant and superior to type A1a.3 (OM4) and will support the 400GBASE-SR16 PMD at least as well as OM4. Therefore it should be included as a recognized media type in Table 123-5.

SuggestedRemedy

Add wideband multimode fiber to the table. Two alternatives are next proposed.

- 1) Add wideband to the current last row of the right column as follows: 0.5 m to 100 m for OM4 and cabling made with TIA-492AAAE fiber.
- 2) Add wideband in a new row at the bottom of the right column as follows: 0.5 m to 100 m for cabling made with TIA-492AAAE fiber.

Note: the second alternative affords easier modification should the reach be determined to differ from OM4.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 68

[Editor's note: Clause changed from 123.7 to 123 and Subclause changed from "Table 123-5" to "123.7"]

CI 123 SC 123.7 P 276 L 15 # 107  
 Shariff, Masood CommScope

Comment Type TR Comment Status D

Recognize WBMMF that will support 400GBASE-SR16 at 850 nm while also enabling SWDM applications between between 850 nm and 953 nm.

SuggestedRemedy

Add WBMMF as new row to table 123.5 as shown below:

0.5 m to 100 m for cabling made with TIA-492AAAE fiber.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 68

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 123 SC 123.10 P 279 L # 108  
 Shariff, Masood CommScope  
 Comment Type TR Comment Status D  
 Add WBMMF fiber as an option  
 SuggestedRemedy  
 Append " and wideband fiber optic cabling." to the end of the sentence on line 30  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68

Cl 123 SC 123.10 P 279 L 29 # 70  
 Kolesar, Paul CommScope  
 Comment Type TR Comment Status D  
 TIA has published TIA-492AAAE, the detailed fiber specification for what is referred to in ANSI/TIA-568.3-D as wideband multimode fiber. This fiber is compliant and superior to type A1a.3 (OM4) and will support the 400GBASE-SR16 PMD at least as well as OM4. Therefore it should be included within the discussion of the fiber optic cabling model.  
 SuggestedRemedy  
 Modify the third sentence of the paragraph to include wideband multimode fiber as follows:  
 As wideband and OM4 fiber optic cabling meet the requirements for OM3, a channel compliant to the "OM3" column may use wideband or OM4 optical fiber cabling, or a combination of OM3 and OM4 and wideband fiber optic cabling.  
 Note: This comment presumes that another comment is accepted which proposes to change the heading on the OM4 column to "OM4 or wideband".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68  
 [Editor's note: Clause changed from 123.1 to 123]

Cl 123 SC 123.10 P 279 L 37 # 71  
 Kolesar, Paul CommScope  
 Comment Type TR Comment Status D  
 TIA has published TIA-492AAAE, the detailed fiber specification for what is referred to in ANSI/TIA-568.3-D as wideband multimode fiber. This fiber is compliant and superior to type A1a.3 (OM4) and will support the 400GBASE-SR16 PMD at least as well as OM4. Therefore it should be included within the discussion of the fiber optic cabling model including Table 123-6-Fiber optic cabling (channel) characteristics.  
 SuggestedRemedy  
 Modify the heading on the "OM4" column to include wideband fiber as follows. Change the heading from "OM4" to "OM4 and wideband".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68  
 [Editor's note: Clause changed from 123.1 to 123 and Subclause changed from "Table 123-6" to "123.10"]

Cl 123 SC 123.10 P 279 L 39 # 109  
 Shariff, Masood CommScope  
 Comment Type TR Comment Status D  
 Recognize and add WBMMF  
 SuggestedRemedy  
 Change the OM4 column heading to "OM4 and WBMMF"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68

Cl 123 SC 123.10. P 279 L 37 # 135  
 Moffitt, Bryan CommScope  
 Comment Type ER Comment Status D  
 TIA-492AAAE wideband fiber satisfies OM4 and should be referenced  
 SuggestedRemedy  
 change OM4 column heading to "OM4 and wideband"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 123 SC 123.11.1 P 280 L 10 # 110  
 Shariff, Masood CommScope  
 Comment Type TR Comment Status D  
 Recognize WBMMF  
 SuggestedRemedy  
 Add a new column for WBMMF and refer to TIA 492-AAAE for the specifications.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68

Cl 123 SC 123.11.1 P 280 L 10 # 72  
 Kolesar, Paul CommScope  
 Comment Type TR Comment Status D  
 TIA has published TIA-492AAAE, the detailed fiber specification for what is referred to in ANSI/TIA-568.3-D as wideband multimode fiber. This fiber is compliant and superior to type A1a.3 (OM4) and will support the 400GBASE-SR16 PMD at least as well as OM4. Therefore it should be included within the discussion of the optical fiber cable including within Table 123-7-Optical fiber and cable characteristics.  
 SuggestedRemedy  
 Wideband fiber shares core diameter, nominal wavelength, and effective modal bandwidth characteristics with OM4. It delivers no more than 3.5 dB/km attenuation (and in fact is set to 3.0 dB/km in TIA-568.3-D). However the zero dispersion wavelength and chromatic dispersion slope are both superior to the specifications for OM3 and OM4. To handle these similarities and differences, a new column is proposed to be added to the right of the "OM4" column with the heading "wideband". Superscript the heading for footnote "c", the footnote to read: TIA-492AAAE. Increment the current "c" footnote to "d". Share the cells in this column for the first four rows with those of the "OM4" column. In the ZDW cell insert the following:  $1297 \leq \lambda_0 \leq 1328$ . In the dispersion slope cell insert the following:  $\leq 4(-103)/(840(1-(\lambda_0/840)^4))$ .  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68  
 [Editor's note: Clause changed from 123.1 to 123 and Subclause changed from "Table 123-7" to "123.11.1"]

Cl 123 SC 123.11.1 P 280 L 25 # 136  
 Moffitt, Bryan CommScope  
 Comment Type ER Comment Status D  
 TIA-492AAAE wideband fiber satisfies OM4 and should be referenced  
 SuggestedRemedy  
 add to footnote b "and TIA-492AAAE wideband fiber"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 68

Cl 123 SC 123.11.3 P 281 L 6 # 16  
 Swanson, Steven Corning Incorporated  
 Comment Type T Comment Status D  
 While it understood here are no lane assignments (within a group of transmit or receive lanes) as the PCS sublayer is capable of receiving the lanes in any arrangement.  
 However, when used in a breakout configuration, matching the correct Tx and Rx matters. The various lanes are landing in different transceivers, thus they cannot be reordered (they are physically in different optics).  
 SuggestedRemedy  
 Replace Figure 123-4 with a Figure that numbers the Tx positions 1-16 left to right and Rx positions 1-16 left to right.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Lane numbering at the MDI isn't required for 400GBASE-SR16 operation.  
 If a 16x25G PMD were to be used for breakout applications, the optical lane numbering would be an implementation choice. For example, preferred lane numbering for a 16:1 breakout may differ from a 16:4 breakout application.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 124 SC 124.5.4 P 292 L 6 # 554  
 traverso, matt cisco

Comment Type T Comment Status D

Transmitters which use a single light source split among multiple lanes are challenged to meet -30 dBm.

The signal detect function must act on a signal between the average receive power, each lane (min) which is -5.4 dBm in this draft. Relaxing the FAIL value for signal\_detect is technically feasible.

*SuggestedRemedy*

Suggest to change value to <= -20 dBm

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment was discussed during the SMF Ad Hoc on 30 August 2016, where there was no strong opposition to the principle of increasing the Average launch power of OFF transmitter, each lane (max) for the 200GBASE-DR4 and 400GBASE-DR4 applications. However there was concern as to whether the dynamic range between -20 dBm and the average receive power, each lane (min) value would be large enough to permit easy implementation of the SIGNAL\_DETECT function.

Cl 124 SC 124.7.1 P 294 L 9 # 112  
 King, Jonathan Finisar

Comment Type T Comment Status D

The receiver sensitivity specs for 400GBASE-DR4 are marginal to what is technically feasible for a high volume product, and an additional 0.3 link loss capability is required.

*SuggestedRemedy*

Move Tx\_OMA specs (and dependents) up 0.8 dB, and Rx sensitivity specs (and dependents) up 0.5 dB, to reduce burden on Rx and increase channel insertion loss budget by 0.3 dB. With editorial licence, the details are: In Table 124-6: Increase Tx\_OMA-TDECQ from -1.3dBm to -0.5 dBm also Increase OMAouter (max) from 4.2dBm to 5.0dBm. Increase OMAouter (min) from -0.3dBm to 0.5dBm. Increase Average launch power (max) from 4dBm to 4.8dBm. Increase Average launch power (min) from -5.4dBm to -4.6dBm. In Table 124-7: Increase 'Receive sensitivity (OMAIinner), each lane (max)' from -9.2dBm to -8.7dBm; also Increase 'Stressed receiver sensitivity (OMAouter), each lane (max)' from -1.9dBm to -1.4dB; Increase 'Receive power, each lane, OMAouter (max)' from 4.2dBm to 5dBm; Increase 'Average receive power, each lane (max)' from 4dBm to 4.8dBm; Increase 'Average receive power, each lane (min)' from -2.4dBm to -1.6dB; Increase 'OMAouter of each aggressor lane' from 4.2dBm to 5.0 dBm. See presentation king\_3bs\_02\_0916.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment was discussed during the SMF Ad Hoc on 30 August 2016, where there was consensus that an additional 0.3 dB does not need to be added to the power budget for 400GBASE-DR4 to accommodate a breakout application, but that the maximum transmit power and overload specifications should allow for the maximum transmit power for such an application. There was no consensus as to whether there is a need to change the power levels by 0.5 dB for manufacturability.

To be further debated at the Task Force meeting.

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

CI 124 SC 124.7.1 P 294 L 30 # 553  
traverso, matt cisco

Comment Type T Comment Status D

Transmitters which use a single light source split among multiple lanes are challenged to meet -30 dBm for the parameter Average launch power of OFF transmitter, each lane (max).

The signal detect function must act on a signal between the average receive power, each lane (min) which is -5.4 dBm in this draft. Relaxing the TX OFF value for signal\_detect is technically feasible.

*SuggestedRemedy*

Change Average launch power of OFF transmitter, each lane (max) to be -20 dBm

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Comment Type set to T]  
See response to comment #554

CI 124 SC 124.7.3 P 295 L 11 # 124  
Lewis, David Lumentum

Comment Type T Comment Status D

Table 124-7. The value for damage threshold is unnecessarily high at 2.5 dB above the maximum average receive power. Having such a high value makes it more difficult to find a source with sufficient power to do the test. Other SMF standards, such as 100GBASE-LR4/-ER4 (Table 88-8) have set the damage threshold at 1 dB above the maximum average receive power.

*SuggestedRemedy*

Change the threshold from 6.5 dBm to 5 dBm.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
In line with discussions during the SMF Ad Hoc on 30 August 2016:

Change the damage threshold from 6.5 dBm to 5 dBm

unless there is a significant risk of accidental misconnection of these PMDs with others with higher maximum average transmit power.

CI 124 SC 124.8.1 P 296 L 32 # 555  
traverso, matt cisco

Comment Type T Comment Status D

The optical transmitter wavelength will not vary appreciably (relative to the currently specified 1304.5 - 1317.5nm) when any of the test patterns specified in Table 124-9 are used.

*SuggestedRemedy*

Change "3, 5 or valid 400GBASE-R signal" to "3, 4, 5, 6 or valid 400GBASE-R signal"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
To be discussed in the Task Force meeting.

CI 124 SC 124.8.1 P 296 L 34 # 556  
traverso, matt cisco

Comment Type T Comment Status D

The optical transmitter side mode suppression ratio will not vary appreciably (relative to the currently specified 1304.5 - 1317.5nm) when any of the test patterns specified in Table 124-9 are used.

*SuggestedRemedy*

Change "3, 5 or valid 400GBASE-R signal" to "3, 4, 5, 6 or valid 400GBASE-R signal"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
To be discussed in the Task Force meeting.

CI 124 SC 124.8.1 P 296 L 36 # 557  
traverso, matt cisco

Comment Type T Comment Status D

The optical average optical power will not vary appreciably (relative to the currently specified 1304.5 - 1317.5nm) when any of the test patterns specified in Table 124-9 are used

*SuggestedRemedy*

Change "3, 5 or valid 400GBASE-R signal" to "3, 4, 5, 6 or valid 400GBASE-R signal"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
To be discussed in the Task Force meeting.



IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

Cl 124 SC 124.9 P 298 L 32 # 120  
Lewis, David Lumentum

Comment Type E Comment Status D

This subclause is a duplicate of 121.9 except for the name of the PMD. It may be better to reference that subclause.

SuggestedRemedy

Safety, installation, environment, and labeling for 400GBASE-DR4 are the same as specified in 121.9.

Proposed Response Response Status W

PROPOSED REJECT.

It is common practice that all PMD clauses have the same text on safety.

Cl 124 SC 124.10 P 299 L 39 # 121  
Lewis, David Lumentum

Comment Type E Comment Status D

This subclause is a duplicate of 121.10 except for the name of the PMD. It may be better to reference that subclause.

SuggestedRemedy

The fiber optic cabling model for 400GBASE-DR4 is the same as the model for 200GBASE-DR4 specified in 121.10.

Proposed Response Response Status W

PROPOSED REJECT.

It is common practice that each PMD clause has this subclause, even when the contents are the same as 121.10

Cl 124 SC 124.10 P 300 L 25 # 80  
Ghiasi, Ali Ghiasi Quantum LLC

Comment Type TR Comment Status D

Optical return loss condition not defiend

SuggestedRemedy

Need to define if the far end cable terminated or not.

The 39 dB return loss indicate end point is not terminated into the TX or RX having 26 dB return loss

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Subclause changed from 124.1 to 124.10]

See response to comment #84

Cl 124 SC 124.11 P 300 L 33 # 122  
Lewis, David Lumentum

Comment Type E Comment Status D

This subclause is the same as 121.11 except for the name of the PMD. It might be better to just reference that subclause.

SuggestedRemedy

The fiber optic cabling (channel) characteristics for 400GBASE-DR4 are the same as those specified for 200GBASE-DR4 in 121.11.

Proposed Response Response Status W

PROPOSED REJECT.

It is common practice that each PMD clause has this subclause, even when the contents are the same as 121.11

Cl 124 SC 124.11.2.1 P 301 L 12 # 22  
Flatman, Alan LAN Technologies

Comment Type E Comment Status D

Note a under Table 124-12 refers to TIA 568-C.3. It should also refer to the International equivalent, ISO/IEC 11801-1 (Edition 3), which is currently at DIS stage (copied below).

SuggestedRemedy

Add reference to Cabled OS2 singlemode fibre specified in ISO/IEC 11801-1 (currently at DIS stage).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Attachment is flatman\_3bs\_01\_0916.pdf in

[http://www.ieee802.org/3/bs/comments/P802d3bs\\_D2p0\\_attachments.zip](http://www.ieee802.org/3/bs/comments/P802d3bs_D2p0_attachments.zip)

See response to comment #20

IEEE P802.3bs D2.0 200 Gb/s & 400 Gb/s Ethernet Initial Working Group ballot comments

*Cl* 124    *SC* 124.11.2.2    *P* 301    *L* 17    # 81  
Ghiasi, Ali    Ghiasi Quantum LLC

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

Current -45 dB RL require APC connector and may not support installed based.

*SuggestedRemedy*

Standard should allow reducing the number of connectors from 4 as defiend for operation with -45 dB RL to -35 dB with 2 connectors.

Adhoc contribution

[http://www.ieee802.org/3/bs/public/adhoc/smf/16\\_08\\_16/anslow\\_01\\_0816\\_smf.pdf](http://www.ieee802.org/3/bs/public/adhoc/smf/16_08_16/anslow_01_0816_smf.pdf)

inducate to support 2 connector the RL for each connector must be -39 dB. This is close enough to either the MPI budget or trade connector loss as few are used with MPI.

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

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #84