

IEEE P802.3ct D1.2 100 Gb/s over DWDM systems 3rd Task Force review comments

Cl 1 SC 1 P1 L27 # 108  
 Nicholl, Gary Cisco systems  
 Comment Type **E** Comment Status **D** bucket  
 IEEE Std 802.3cm-2020 and 802.3cq-2002 have now been approved  
 SuggestedRemedy  
 Change 802.3cm-20XX to 802.3cm-2020 and 802.3cq-20XX to 802.3cq-2020 throughout the draft  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 1 SC 1 P21 L14 # 105  
 Nicholl, Gary Cisco systems  
 Comment Type **E** Comment Status **D** bucket  
 The "important Notice" is no longer required according to IEEE.  
 SuggestedRemedy  
 Delete lines 14 through 24: IMPORTANT NOTICE: IEEE Standards documents are not intended to ensure safety, health, or environmental protection, or ensure against interference with or from other devices or networks. Implementers of IEEE Standards documents are responsible for determining and complying with all appropriate safety, security, environmental, health, and interference protection practices and all applicable laws and regulations.  
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 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 1 SC 1.4 P22 L # 84  
 Stassar, Peter Huawei  
 Comment Type **TR** Comment Status **D**  
 We may need a definition of channel spacing. The proposed definition is consistent with the one currently in Recommendation ITU-T G.671.  
 SuggestedRemedy  
 Add "1.4.181a Channel Spacing: The center-to-center difference in frequency or wavelength between adjacent channels in a WDM application. DWDM channel spacings are based on the grid found in [ITU-T G.694.1]. CWDM channel spacings are based on the grid found in [ITU-T G.694.2]."  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 1 SC 1.4 P22 L # 85  
 Stassar, Peter Huawei  
 Comment Type **TR** Comment Status **D**  
 We may need a definition of polarization dependent loss. The proposed definition is consistent with the one currently in Recommendation ITU-T G.671.  
 SuggestedRemedy  
 Add "1.4.401a polarization dependent loss: The variation of insertion loss due to a variation of the state of polarization (SOP) over all SOPs within the channel frequency range (DWDM link) or channel wavelength range (CWDM and WWDM links)  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 1 SC 1.4 P22 L27 # 50  
 Brown, Matt Huawei Technologies Canada  
 Comment Type **E** Comment Status **D** bucket  
 only one defintion  
 SuggestedRemedy  
 Change "definitions" to "definition"  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

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CI 45 SC 45.2.1 P24 L8 # 47  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status D bucket  
 802.3cg has published.  
 SuggestedRemedy  
 Replace, "802.3cg-20xx" with, "802.3cg-2019"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.21b P27 L35 # 124  
 Issenhuth, Tom Huawei  
 Comment Type E Comment Status D  
 States table 45.24b "as inserted by IEEE Std 802.3cu-20xx" but table 45.24b was inserted by IEEE Std 802.3cn-2019 and modified by IEEE Std 802.3cu-20xx.  
 SuggestedRemedy  
 Change "as inserted by IEEE Std 802.3cu-20xx" to "as modified by IEEE Std 802.3cu-20xx"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.186 P36 L9 # 48  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status D bucket  
 802.3cg has published.  
 SuggestedRemedy  
 Replace, "802.3cg-20xx" with, "802.3cg-2019"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.186aa.1 P36 L35 # 1  
 Bruckman, Leon Huawei  
 Comment Type T Comment Status D bucket  
 The "IFEC bypass indication enable" bit when set to a one enables the bypass of the FEC error indication function, not the error indication. See text in clause 91.6.2.  
 SuggestedRemedy  
 Change: "When set to a one, this bit enables bypass of the error indication.",  
 to: "When set to a one, this bit enables bypass of the error indication function."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.186aa.1 P36 L37 # 2  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket  
 Text not clear  
 SuggestedRemedy  
 Change: "Writes to bit 1.2200.1 are ignored and reads return a zero if the Inverse RS-FEC does not have the ability to bypass indicating decoding errors to the remote PCS layer (see 152.5.2.3).",  
 to: "Writes to bit 1.2200.1 are ignored and reads return a zero if the Inverse RS-FEC does not have the ability to bypass decoding error indications to the remote PCS layer (see 152.5.2.3)."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.186aa.2 P36 L44 # 3  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket  
 Text not clear  
 SuggestedRemedy  
 Change: "Writes to this bit are ignored and reads return a zero if the Inverse RS-FEC does not have the ability to bypass correction.",  
 to: "Writes to this bit are ignored and reads return a zero if the Inverse RS-FEC does not have the ability to bypass error correction."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 45 SC 45.2.1.186ab.8 P38 L33 # 4

Bruckman, Leon Huawei  
 Comment Type T Comment Status D bucket

The "IFEC bypass indication ability" bit when set to a one one indicates that the bypass of the FEC error indication function can be bypass.

SuggestedRemedy

Change: "This bit is set to one to indicate that the decoder has this ability to bypass error indication.",

to:"This bit is set to one to indicate that the decoder has this ability to bypass the error indication function."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.186ah.2 P41 L40 # 5

Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket

Inconsistent bracketing. In clause 153.2.4.1.1 the variable is indicated as: fas\_lock<x>

SuggestedRemedy

Change: "fas\_lock[7]", to:"fas\_lock<7>". The same for all other 19 lanes in the following clauses 45.2.1.186ah.3 to 45.2.1.186ai.12.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change "fas\_lock[x]" to "fas\_lock<x>" in clauses 45.2.1.186ah.1 to 45.2.1.186ah.9 and in clauses 45.2.1.186ai.1 to 45.2.1.186ai.12.

Cl 45 SC 45.2.1.186aj P45 L16 # 6

Bruckman, Leon Huawei  
 Comment Type TR Comment Status R

Lane identification shall be separated from lane lock, so the value of lane mapping is dependent on the lane identification status.

SuggestedRemedy

Add the lane identification status bits to the MDIO and make the lane mapping register dependent on these bits instead of fas lock. Details of remedy are presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status C  
 REJECT.

See response to comment 15.

Cl 80 SC 80.1 P49 L12 # 44

Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status D bucket

Missing oxford comma.

SuggestedRemedy

Replace, "100GBASE-LR1 and in Clause154: with, "100GBASE-LR1, and in Clause154" and extend the underline change mark to include the added ",".

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 80 SC 80.1.3 P49 L10 # 109

Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket

Extra space between "and " and "in"

SuggestedRemedy

Delete extra space.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 80 SC 80.1.3 P49 L14 # 110

Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket

The editing instruction states "Change Figure 80-1 in 80.1.3 as follows:", but there is no "Figure 80-1" in the document.

SuggestedRemedy

Import Figure 80-1 and update accordingly.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 51.

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CI 80 SC 80.1.3 P49 L16 # 51

Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket

this is not an acceptable amendment instruction

SuggestedRemedy

Change instruction to "Replace figure 80-1 with the following:"  
 Import Figure 80-1 and make the necessary changes.

Alternately, change instruction to the following:  
 "In Figure 80-1, change the list of medium types as follows:"  
 "100GBASE-R, or 100GBASE-P, or 100GBASE-Z." with proper strike-out and underline

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Remove existing text and replace with "In Figure 80-1, change the list of medium types  
 under CGMII as follows:

"100GBASE-R, or 100GBASE-P, or 100GBASE-Z." with proper strike-out and underline.

CI 80 SC 80.1.4 P49 L25 # 52

Brown, Matt Huawei Technologies Canada  
 Comment Type T Comment Status D bucket

The Clause 74 FEC is not relevant and for Clause 91 it is not necessary to list out the  
 transcoding as this one of many subfunctions withing the Clause 91 FEC.

SuggestedRemedy

Change to:  
 "Some 100GBASE-Z Physical Layer devices also use the FEC of Clause 91 or the FEC of  
 Clause153."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 80 SC 80.1.5 P50 L3 # 41

Trowbridge, Steve Nokia  
 Comment Type ER Comment Status D bucket

Editor's note is incorrect

SuggestedRemedy

Change "Insert Table80-4 after Table 80-4a as follows:" to "Insert Table80-4b after Table  
 80-4a as follows:"

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change "Insert Table 80-4 after Table 80-4a as follows: "Insert Table 80-4b after Table  
 80-4a as follows:"

CI 80 SC 80.1.5 P50 L3 # 111

Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket

Editing instruction states "Insert Table80-4 after Table 80-4a as follows:", but the label  
 inserted is actually Table 80-4b.

SuggestedRemedy

Update editing instruction to read " "Insert Table80-4b after Table 80-4a as follows:"

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 41.

CI 80 SC 80.1.5 P50 L6 # 113

Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket

Table 80-4b is a new table , so there should be no underlining.

SuggestedRemedy

Delete all underlining in Table 80-4b

Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 80 SC 80.1.5 P50 L6 # 112  
 Nicholl, Gary Cisco systems  
 Comment Type T Comment Status D bucket  
 Table 80-4b is missing a column for Clause 135.  
 SuggestedRemedy  
 Add a column for Clause 135.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 80 SC 80.1.5 P50 L10 # 7  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket  
 Clause 80.1.4 indicates that the clause 74 FEC is optional for 100GBASE-Z, but it is not shown in Table 80-4b  
 SuggestedRemedy  
 Add clause 74 to table 80-4b as optional.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Clause 74 is not relevant and will be removed from 80.1.4, see response to comment 52, so there is no need to add clause 74 to table 80-4b.

Cl 80 SC 80.2.2 P50 L34 # 53  
 Brown, Matt Huawei Technologies Canada  
 Comment Type T Comment Status D bucket  
 100GBASE-Z must be added to the list of PHY types.  
 SuggestedRemedy  
 Add 100GBASE-Z to the list of PHY types.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 80 SC 80.2.4 P51 L5 # 42  
 Trowbridge, Steve Nokia  
 Comment Type E Comment Status D bucket  
 The first sentence is wrong given the additions in the rest of the paragraph.  
 SuggestedRemedy

Change the entire paragraph to:  
 Clause 83 specifies 40GBASE-R and 100GBASE-R PMAs that may be used with any PHY type of the corresponding rate. Additional PMAs are only applicable to specific PHY types:  
 a) Clause 94 specifies a PMA that may be used only in a 100GBASE-KP4 PHY.  
 b) Clause 135 specifies a PMA that may be used in other 100GBASE-P PHY types.  
 c) Clause 153 specifies a PMA that is used in the 100GBASE-ZR PHY.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Implement the suggested remedy with editorial license to ensure proper formatting.

Cl 80 SC 80.2.4 P51 L6 # 54  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 There are no changes marked in the paragraph.

SuggestedRemedy  
 Underline the last sentence.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 42.

Cl 80 SC 80.3.2 P51 L28 # 114  
 Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket  
 Extra space between 100GBASE-R and 100GBASE-P  
 SuggestedRemedy  
 Use strikethrough for the extra space after the "and"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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CI 80 SC 80.3.2 P51 L30 # 115  
 Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket  
 Missing underline, under space.  
 SuggestedRemedy  
 Change "Figure 80-4a, " to "Figure 80-4a, "  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 55.

CI 80 SC 80.3.2 P52 L1 # 116  
 Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket  
 There should be no underline in editing instruction  
 SuggestedRemedy  
 Remove underline in editing instruction  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 56.

CI 80 SC 80.3.2 P51 L30 # 55  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 Fix amendment markup.  
 SuggestedRemedy  
 Space after "Figure 80-4" should be undelined.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 80 SC 80.4 P52 L49 # 117  
 Nicholl, Gary Cisco systems  
 Comment Type E Comment Status D bucket  
 Need to reference 802.3cu in editing instruction  
 SuggestedRemedy  
 Change editing instruction from "Change Table80-5 (as modified by IEEE Std 802.3cd-2018) as follows (unchanged 40G rows not shown)" as follows (unchanged 40G rows not shown)"  
 to  
 "Change Table80-5 (as modified by IEEE Std 802.3cd-2018 and IEEE Std 802.3cu-xx) as follows (unchanged 40G rows not shown)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 80 SC 80.3.2 P52 L1 # 56  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 Underlined text is not required here.  
 SuggestedRemedy  
 Remove underline on "Figure 80-4a".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 80 SC 80.4 P52 L50 # 57  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 No need to describe the not-shown rows. It is sufficient to refer to "unchanged" rows.  
 SuggestedRemedy  
 Change "unchanged 40G rows" to "some unchanged rows".  
 You might then reduce the table size by deleting rows for MAC, PCS, and 100GBASE-R FEC.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change wording to "unchanged rows not shown" and remove unchanged rows from the table.

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CI 80 SC 80.5 P55 L1 # 45  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status D bucket  
 Suggest that "skew variation needs to be revisited, input requested" be formatted as an Editor's Note.  
 SuggestedRemedy  
 Format, "skew variation needs to be revisited, input requested" as an Editor's Note.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 58.

CI 80 SC 80.5 P55 L1 # 58  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 Improper editor's note.  
 SuggestedRemedy  
 Use proper editor's note by inserting editor's note that and include "Editor's note:".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 83C SC 83C.4 P120 L8 # 70  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 Editing instruction should refer to the inserted subclause.  
 SuggestedRemedy  
 Change to "Insert new subclause 83C.4 at the end of Annex 83C as follows:"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 125 SC FM P1 L26 # 49  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 spelling  
 SuggestedRemedy  
 Change "EEE" to "IEEE"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 135A SC 135A P122 L1 # 71  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 Editing instruction was carried over from 802.3cd and is not relevant in 802.3ct.  
 SuggestedRemedy  
 Delete editing instruction at the top of page 122.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 135A SC 135A.3 P122 L # 72  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 Editing instruction should refer to the inserted subclause.  
 SuggestedRemedy  
 Change to "Insert new subclause 135A.3 at the end of Annex 135A as follows:"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 152 SC 152.1 P59 L33 # 60  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D bucket  
 The definition for Inverse RS-FEC is in the wrong location in the list.  
 SuggestedRemedy  
 Move definition for Inverse RS-FEC to between definitions for FEC and LLC.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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CI 152 SC 152.1 P59 L34 # 61  
 Brown, Matt Huawei Technologies Canada  
 Comment Type E Comment Status D  
 The 100G PMA defined in Clause 135 is called the 100GBASE-P PMA.  
 SuggestedRemedy  
 Remove the note from the definition list and in the layer diagram for the associated PMA sublayers replace "PMA" with "100GBASE-P PMA".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 152 SC 152.1.1 P58 L11 # 59  
 Brown, Matt Huawei Technologies Canada  
 Comment Type T Comment Status D  
 This new sublayer is intended in this project for support of 100GBASE-ZR which is a 100GBASE-Z PHY and might be used for 100GBASE-P PHYs as well. It could be used for 100GBASE-R PHYs.  
 SuggestedRemedy  
 Change sentence to:  
 "The Inverse RS-FEC sublayer specifies a Reed-Solomon Forward Error Correction (RS-FEC) sublayer for 100GBASE-R, 100GBASE-P, and 100GBASE-Z PHYs."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 152 SC 152.5.1 P61 L47 # 118  
 Lewis, David Lumentum  
 Comment Type E Comment Status D bucket  
 The caption for Fig 152-2 does not say what it is a function block diagram of.  
 SuggestedRemedy  
 Change caption to "Inverse RS-FEC sublayer functional block diagram".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 152 SC 152.5.3.4 P66 L38 # 8  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D  
 It is strange that the the bit error ratio in the data received from the far-end PCS can be estimated by dividing the BIP block error ratio by something, if you already have a error ratio why divide it?. I saw the same wording in other 802.3 cluses, but it sounds strange.  
 SuggestedRemedy  
 Change: "The bit error ratio in the data received from the far-end PCS can be estimated by dividing the BIP block error ratio by a factor of 1 081 344.",

to: "The bit error ratio in the data received from the far-end PCS can be estimated by dividing the BIP block errors by a factor of 1 081 344."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This is nearly identical text to the final para of 91.5.2.4, and to 82.2.15 from which it was derived, and the suggested remedy is technically wrong. The BIP values are actually generated by the far end PCS, and the intervening transcode/trans-decode steps should restore the sequence of bits over which they are calculated in the absence of errors. The calculation converts a block error ratio (the number of BIP violations over a unit of time) to an equivalent bit-error ratio (the estimate of the number of bit errors over that equivalent unit of time). You can't simply divide a count of block errors by a fixed value to get a BER, not knowing whether that block error count was over one second or one hour.

CI 152 SC 152.6.4 P75 L8 # 9  
 Bruckman, Leon Huawei  
 Comment Type T Comment Status D  
 The "FEC bypass indication ability" bit when set to a one one indicates that the bypass of the FEC error indication function can be bypass. See text in clause 91.6.2.  
 SuggestedRemedy  
 Change: "This variable is set to one to indicate that the decoder has the ability to bypass error indication.",  
 to: "This variable is set to one to indicate that the decoder has the ability to bypass error indication function."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change: "This variable is set to one to indicate that the decoder has the ability to bypass error indication.",  
 to: "This variable is set to one to indicate that the decoder has the ability to bypass the error indication function."



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**CI 152**    **SC 152.6.7**                      **P75**                      **L26**                      # **10**  
 Bruckman, Leon                              Huawei  
**Comment Type**    **E**                      **Comment Status**    **D**                      *bucket*  
 Missing word  
**SuggestedRemedy**  
 Change: "This variable assigned by the FEC alignment state diagram shown in Figure 91-9 (see 152.5.4.3).",  
 to: "This variable is assigned by the FEC alignment state diagram shown in Figure 91-9 (see 152.5.4.3)."  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

**CI 152**    **SC 152.7**                              **P77**                      **L2**                              # **43**  
 Trowbridge, Steve                              Nokia  
**Comment Type**    **ER**                      **Comment Status**    **D**  
 Need to replace vestigial "Clause 200" from the FrameMaker template with the actual clause number.  
**SuggestedRemedy**  
 Change "Clause 200" to Clause 152" in the title of clause 152.7, and also on page 77 line 6, page 77 line 34.  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

**CI 153**    **SC 153.1.1**                              **P81**                      **L81**                              # **62**  
 Brown, Matt                                      Huawei Technologies Canada  
**Comment Type**    **E**                              **Comment Status**    **D**  
 "staircase" should not be capitalized.  
**SuggestedRemedy**  
 Change "Staircase" to "staircase".  
**Proposed Response**                      **Response Status**    **W**  
 PROPOSED ACCEPT.

**CI 153**    **SC 153.2.1**                              **P82**                      **L12**                              # **11**  
 Bruckman, Leon                              Huawei  
**Comment Type**    **T**                              **Comment Status**    **R**  
 fec\_align\_status is a noisy indication  
**SuggestedRemedy**  
 Replace "fec\_align\_status" , with: "fecl\_align\_indication" twice in this sentence. Details of remedy are presented in contribution bruckman\_3ct\_01\_0320.  
**Response**                                      **Response Status**    **C**  
 REJECT.  
 See response to comment 15.

**CI 153**    **SC 153.2.1**                              **P82**                      **L16**                              # **63**  
 Brown, Matt                                      Huawei Technologies Canada  
**Comment Type**    **T**                              **Comment Status**    **D**                      *bucket*  
 The text in this paragraph does not match the architecture. There are three cases to consider as follows.  
 Case #1: SC-FEC connects directly to the PCS.  
 Case #2: SC-FEC connects directly to the Inverse RS-FEC, RS-FEC, Clause 135 PMA, etc.  
 Case #3: SC-FEC is connected to a Clause 83 PMA then through a CAUI-4 or CAUI-10 to the PCS.  
 This paragraph should address both Case #2 and #3.  
**SuggestedRemedy**  
 Replace the paragraph with the following:  
 "The PCS may be connected to the SC-FEC using a physical instantiation of the PMA service interface (see Annex 83A, Annex 83B, Annex 83D, and Annex 83E) in which case a PMA (see Clause 83) is a client of the FEC service interface."  
 "The PCS may be connected to the SC-FEC using a physical instantiation of the PMA service interface (see Annex 135E and Annex 135G) in which case an Inverse RS-FEC (see Clause 152) is a client of the FEC service interface."  
**Proposed Response**                      **Response Status**    **Z**  
 PROPOSED REJECT.  
 This comment was WITHDRAWN by the commenter.

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CI 153 SC 153.2.3.2.4 P85 L16 # 12

Bruckman, Leon Huawei  
 Comment Type E Comment Status D

GMP requires that carrier signal payload rate is larger than the carried signal rate. This is the case for 100GBASE-ZR of course, but it will be beneficial to indicate the carrier signal payload rate.

*SuggestedRemedy*

At the end of sentence: "The Payload area of the SC-FEC frame has a capacity of (255/227) × (3800 / 4080) × 99.5328 Gb/s ±20 ppm.", add: "(~104.1367 Gb/s)"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 153 SC 153.2.3.2.4 P85 L50 # 13

Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket

Text needs to be fixed

*SuggestedRemedy*

Change: "...as the ratios of the two clock rates do not provide a case where...",

to: "...as the ratio of the two clock rates does not provide a case where."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 153 SC 153.2.3.2.4 P87 L3 # 14

Bruckman, Leon Huawei  
 Comment Type E Comment Status D

Text no clear

*SuggestedRemedy*

Change: "so this number are transmitted",

to: "so this amount of octets are transmitted"

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change Change: "so this number are transmitted", to "so 189x80 octets are transmitted"

CI 153 SC 153.2.3.2.7 P88 L37 # 64

Brown, Matt Huawei Technologies Canada  
 Comment Type T Comment Status D

There is no specification for the FEC lane skew or PMA lane Skew Variation for the SC-FEC transmit output. It would be reasonable to use the same numbers used for the RS-FEC receive function (see Table 80-6 and Table 80-7).

*SuggestedRemedy*

Add the following sentence at the end of 153.2.3.2.7.

"At the output of the FEC transmit function the Skew between FEC lanes shall be no more than 49 ns and the Skew Variation between PMA lanes shall be no more than 0.4 ns."

Proposed Response Response Status W  
 PROPOSED REJECT.

There isn't a corresponding specification in other clauses (e.g., Clause 91) as to the maximum skew that can be generated in the Tx direction - only as to the amount of skew that must be tolerated from above. Given that this is "logic only" after the PCS lanes from above have been deskewed, no reason to think you need to test to make sure the skew is under 49ns. The skew to be tolerated above is described in 153.2.3.2.2. If a limit is added on the skew that would be generated as well as tolerated by the sublayer, an additional Tx direction PICs item needs to be added for this.

CI 153 SC 153.2.3.3.1 P88 L41 # 15

Bruckman, Leon Huawei  
 Comment Type TR Comment Status R

Separate lane identification from alignment, add reference to the lane identification state diagram.

*SuggestedRemedy*

Details of remedy including proposed text for this clause is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status C  
 REJECT.

Draft 1.2 is technically complete with regard to SC-FEC lane alignment and synchronization. Nevertheless, there could be merit to separating the process descriptions for lane alignment and lane identification. Commenter is invited to build consensus for a complete and consistent proposal to be considered against Draft 2.0.

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CI 153 SC 153.2.3.3.1 P88 L46 # 65

Brown, Matt Huawei Technologies Canada

Comment Type T Comment Status D

The "support" of Skew and Skew Variation is ambiguous. Presumably this means tolerance of Skew and Skew Variation. Also, the numbers are still TBD; it would be reasonable to use the same numbers used for the RS-FEC receive function (see Table 80-6 and Table 80-7).

*SuggestedRemedy*

Change the sentence to: "The FEC receive function shall tolerate a maximum Skew of 180 ns between FEC lanes and a maximum Skew Variation of 4 ns between PMA lanes."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 153 SC 153.2.3.3.5 P89 L34 # 16

Bruckman, Leon Huawei

Comment Type T Comment Status D

Since OTN devices may be used to implement the 100GBASE-ZR, and these devices support Cm values other than 188 and 189, there may be failure cases in which the GMP receiver receives values that are different from the ones in Table 153-1. What should the GMP demmapper do in this case ? Also what is expected the GMP demapper to do if DI=II=1 ?

On the other hand, there may be implementations based on OTN receivers that will be able to handle the situation, but there may also be 100GBASE-ZR targeted reduced functionality implementations that only accept the values specified in Table 153-1.

*SuggestedRemedy*

Add the following sentence: "If a C13:C0 value other than 188 or 189, or DI=1 and II=1 is received, the GMP demapper behavior is undefined."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Implement the proposed resolution.

There is no harm in adding this sentence, although while the GMP mechanism is generic, there is no standardized mapping of a client other than 100GBASE-R directly into OPU4 via GMP. So any OTN kit that implements GMP mapping of a client into OPU4 should only be generating the indicated values)

CI 153 SC 153.2.3.3.6 P89 L43 # 17

Bruckman, Leon Huawei

Comment Type TR Comment Status R

There should be an indication to the upper layer if block lock is not achieved, but according to clause 153.2.1 the SIGNAL\_OK parameter of the FEC:IS\_SIGNAL.indication depends only on the FEC alignment indication.

*SuggestedRemedy*

Add the clause 82.2.19.2.2 rx\_block\_lock indication to the SIGNAL\_OK parameter defined in 153.2.1. Details of remedy including proposed text for this clause is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status C

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.1.1 P90 L12 # 19

Bruckman, Leon Huawei

Comment Type TR Comment Status R

New variables are needed according to the update of the deskew state diagram proposed in bruckman\_3ct\_01\_0320.

*SuggestedRemedy*

Add the following variables: fas\_status, alignment\_valid and fec\_enable\_deskew. Details of remedy including proposed text for these variables is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status C

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.1.1 P90 L12 # 20

Bruckman, Leon Huawei

Comment Type TR Comment Status R

A new variable is needed for the SIGNAL OK indication state diagram proposed in bruckman\_3ct\_01\_0320.

*SuggestedRemedy*

Add the following variable: fec\_align\_indication. Details of remedy including proposed text for this variable is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status C

REJECT.

See response to comment 15.

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CI 153 SC 153.2.4.1.1 P90 L12 # 18

Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**

New variables are needed according to the state diagrams proposed for the lane identification separation from the alignment process.

*SuggestedRemedy*

Add the following variables: fec1\_valid and lane\_id\_detected<x>. Details of remedy including proposed text for these variables is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status **C**

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.1.1 P90 L19 # 21

Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**

In the new state diagram described in bruckman\_3ct\_01\_0320 there is no need for fas\_match.

*SuggestedRemedy*

Remove fas\_match

Response Response Status **C**

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.1.1 P90 L22 # 22

Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**

fas\_valid needs to be updated according to the state diagrams proposed for the lane identification separation from the alignment process.

*SuggestedRemedy*

Details of remedy including proposed text for this variable is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status **C**

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.1.1 P90 L29 # 23

Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**

current\_fec1 needs to be updated according to the state diagrams proposed for the lane identification separation from the alignment process.

*SuggestedRemedy*

Details of remedy including proposed text for this variable is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status **C**

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.1.1 P90 L41 # 24

Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**

fec\_lane needs to be updated according to the state diagrams proposed for the lane identification separation from the alignment process.

*SuggestedRemedy*

Details of remedy including proposed text for this variable is presented in contribution bruckman\_3ct\_01\_0320.

Response Response Status **C**

REJECT.

See response to comment 15.

CI 153 SC 153.2.4.2 P91 L15 # 25

Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**

In the new state diagram described in bruckman\_3ct\_01\_0320 there is no need for the FAS\_COMPARE function.

*SuggestedRemedy*

Remove the FAS\_COMPARE function

Response Response Status **C**

REJECT.

See response to comment 15.

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CI 153 SC 153.2.4.3 P91 L27 # 26  
 Bruckman, Leon Huawei  
 Comment Type TR Comment Status R  
 A new counter is needed for the alignmnet loss state diagram proposed in bruckman\_3ct\_01\_0320 to keep the FAS position during loss of alignment  
 SuggestedRemedy  
 Add the following counter: fas\_in\_counter. Details of remedy including proposed text for this counter is presented in contribution bruckman\_3ct\_01\_0320.  
 Response Response Status C  
 REJECT.  
 See response to comment 15.

CI 153 SC 153.2.4.3 P91 L27 # 28  
 Bruckman, Leon Huawei  
 Comment Type TR Comment Status R  
 New counters are needed for the SIGNAL OK state diagram proposed in bruckman\_3ct\_01\_0320.  
 SuggestedRemedy  
 Add the following counters: align\_ok\_count and align\_bad\_count. Details of remedy including proposed text for these counters is presented in contribution bruckman\_3ct\_01\_0320.  
 Response Response Status C  
 REJECT.  
 See response to comment 15.

CI 153 SC 153.2.4.3 P91 L27 # 27  
 Bruckman, Leon Huawei  
 Comment Type TR Comment Status R  
 New counters are needed for the lane identification state diagram proposed in bruckman\_3ct\_01\_0320.  
 SuggestedRemedy  
 Add the following counters: fecl\_ok\_count and fecl\_bad\_count. Details of remedy including proposed text for these counters is presented in contribution bruckman\_3ct\_01\_0320.  
 Response Response Status C  
 REJECT.  
 See response to comment 15.

CI 153 SC 153.2.4.4 P91 L35 # 29  
 Bruckman, Leon Huawei  
 Comment Type TR Comment Status R  
 The SIGNAL\_OK parameter of the FEC:IS\_SIGNAL.indication primitive is driven by fec\_align\_status.  
 fec\_align\_status is false if any lane loses alignment, but this happens frequently due to pre-FEC high BER. According to the text in this case receiver may be impaired frequently.  
 SuggestedRemedy  
 Add a stability state diagram for the fec\_align\_status variable. Details of remedy including the state diagram are presented in contribution bruckman\_3ct\_01\_0320  
 Response Response Status C  
 REJECT.  
 See response to comment 15.

CI 153 SC 153.2.4.4 P92 L13 # 87  
 Maniloff, Eric Ciena  
 Comment Type E Comment Status D bucket  
 FAS\_COMPARE should read COMP to be consistent with the left side of the block diagram  
 SuggestedRemedy  
 Change to COMP  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change the state name in the box on the right side, line 13 from FAS\_COMPARE to COMP

CI 153 SC 153.2.4.4 P92 L14 # 88  
 Maniloff, Eric Ciena  
 Comment Type E Comment Status D bucket  
 FAS\_COMPAR is a typo  
 SuggestedRemedy  
 change FAS\_COMPAR to FAS\_COMPARE  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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CI 153 SC 153.2.4.4 P92 L47 # 30  
 Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**  
 New state diagrams are needed to separate the lane identification from the alignment process.  
*SuggestedRemedy*  
 New state diagrams are presented in contribution bruckman\_3ct\_01\_0320  
*Response* *Response Status* **C**  
 REJECT.  
 See response to comment 15.

CI 153 SC 153.2.4.4 P93 L3 # 31  
 Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **D**  
 Several issues with the SC-FEC deskew state diagram: fasalign\_status and all\_fas\_valid are not defined, fec\_enable\_deskew is always false.  
*SuggestedRemedy*  
 A updated SC-FEC deskew state diagram is presented in contribution bruckman\_3ct\_01\_0321  
*Proposed Response* *Response Status* **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Check figure 153-8.

CI 153 SC 153.2.4.4 P93 L3 # 32  
 Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **D**  
 fec\_enable\_deskew is not defined  
*SuggestedRemedy*  
 Define fec\_enable\_deskew as follows: "A Boolean variable that enables and disables the deskew process. The alignment start shall be maintained when fec\_align\_status is false. It is set to true when deskew is enabled and set to false when deskew is disabled."  
 The definition is similar to the fec\_enable\_deskew variable definition in 91.5.4.2.1, without allowing bits to be discarded during the deskew process to avoid communication impairment during the frequent synchronization losses (due to pre-FEC BER).

*Proposed Response* *Response Status* **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Define fec\_enable\_deskew as follows: "A boolean variable that indicates the enabling and disabling of the deskew process. Data may be discarded whenever deskew is enabled. True when deskew is enabled. False when deskew is disabled."  
 In Figure 153-8 in the state LOSS\_OF\_ALIGNMENT, change "fec\_enable\_deskew<=false" to "fec\_enable\_deskew<=true"

CI 153 SC 153.2.5 P94 L10 # 36  
 Bruckman, Leon Huawei  
 Comment Type **TR** Comment Status **R**  
 Lane identification shall be separated from lane lock, add the lane identification status.  
*SuggestedRemedy*  
 Add the lane identification row to Table 153-2 after the second row. Details of remedy are presented in contribution bruckman\_3ct\_01\_0320.  
*Response* *Response Status* **C**  
 REJECT.  
 See response to comment 15.

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Cl 153 SC 153.2.5.2 P93 L39 # 33  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket  
 Text not clear  
 SuggestedRemedy  
 Change: "An uncorrected FEC codeword is a codeword contains errors",  
 to: "An uncorrected FEC codeword is a codeword that contains errors"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 153 SC 153.2.5.3 P94 L1 # 34  
 Bruckman, Leon Huawei  
 Comment Type TR Comment Status R  
 Lane identification validity MDIO control variables are needed for the lane identification separation from the alignment process.  
 SuggestedRemedy  
 Add SC-FEC line identification status 1 and 2 registers, as detailed in contribution bruckman\_3ct\_01\_0320  
 Response Response Status C  
 REJECT.  
 See response to comment 15.

Cl 153 SC 153.2.5.3 P94 L8 # 35  
 Bruckman, Leon Huawei  
 Comment Type TR Comment Status R  
 SC-FEC align status shall be driven by the stable fec alignment indication  
 SuggestedRemedy  
 Replace fec\_align\_status with the new variable fec\_align\_indication (used in the SIGNAL OK stability state diagram, see bruckman\_3ct\_01\_0320)  
 Response Response Status C  
 REJECT.  
 See response to comment 15.

Cl 153 SC 153.3.1 P94 L48 # 37  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D  
 The SC-FEC not only sends 20 parallel bit streams to the 100GBASE-ZR PMA sublayer, it also receives 20 parallel bit streams from the PMA sublayer.  
 SuggestedRemedy  
 After the end of sentence: "SC-FEC continuously sends.", add: "Likewise the 100GBASE-ZR PMA sublayer continuously sends 20 parallel bit streams to the SC-FEC sublayer."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add to the end of the paragraph "Likewise the 100GBASE-ZR PMA sublayer continuously sends 20 parallel bit streams to the SC-FEC sublayer, each at a nominal signaling rate of  $(255/227) \times 4.97664$  Gb/s  $\pm 20$  ppm ( $\sim 5.59049868$  Gb/s)."

Cl 153 SC 153.3.2 P96 L0 # 66  
 Brown, Matt Huawei Technologies Canada  
 Comment Type T Comment Status D  
 Skew tolerance and generation are not specified for the PMA, but are essential budgeting end to end skew. Normally, for new 100GBASE PHYs we would simply refer back to 80.5, however, the stack for 100GBASE-ZR is a bit different and the PMA is different in various ways.  
 SuggestedRemedy  
 Define skew points in a similar way as for 100GBASE-R/P in 80.5. A presentation will be provided with background and proposals.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Pending presentation and Task Force discussion

Cl 153 SC 153.3.2.2.2 P95 L50 # 38  
 Bruckman, Leon Huawei  
 Comment Type E Comment Status D bucket  
 Text not clear  
 SuggestedRemedy  
 Change: "The selection of the two lanes of the four-lane interface is used to form each stream of DQPSK symbols is arbitrary",  
 to: "The selection of the two lanes of the four-lane interface used to form each stream of DQPSK symbols is arbitrary"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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CI 154 SC 6 P107 L25 # 96

DeAndrea, John Finisar II-VI

Comment Type E Comment Status D

This sentence is unclear, "However, it does not enable interoperability at multichannel points between the optical multiplexer and demultiplexer that are likely to be included in the black link" What are multichannel points? If a single channel is only supported through one transfer characteristics, then mentioning interoperability through multichannel points is not needed.

SuggestedRemedy

Drop sentaence.

Proposed Response Response Status W

PROPOSED REJECT.

The quoted sentence refers to an essential characteristic of the black link, that it contains points where more than one channel is present in the fiber and that at those points the interoperability is not supported by the specification.

CI 154 SC 7.2 P111 L11 # 97

DeAndrea, John Finisar II-VI

Comment Type T Comment Status A

TBD value for receiver damage threshold.

SuggestedRemedy

For amplified links, 48 channel system can have 48 channels launched at +1 dbm for 80 km link. Total amplified power for +1 dBm launch power, 48 channels, 17.8 dBm total power is realized. Occassionally, mistakes are made, and this total power is applied to a receiver without a DeMux or fiber span. Suggest using 18 dBm as maximum damage threshold for receiver damage threshold.

Response Response Status C

ACCEPT IN PRINCIPLE.

The TBD was addressed in comment 77 however is not attempting to cover misconnections from inside the black link directly into the receiver.

CI 154 SC 8.1 P110 L52 # 98

DeAndrea, John Finisar II-VI

Comment Type T Comment Status D

Specific test patterns are not required, based on Clause 153.2.3.2.5 SC-FEC encoder, and Clause 153.2.3.2.6 Scrambler for dual polarization optical signals. The scrambler and dual carrier channels provide enogh randomization for optical signal parameter messurment and compliance.

SuggestedRemedy

Modify 154.8.1 to: "Compliance is to be achieved in normal operation, and Clause 153.2.3.2.5 SC-FEC encoder, and Clause 153.2.3.2.6 Scrambler, provide a sufficient pseudo random signal for transmit parameter measurments."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Discuss in Task Force.

CI 154 SC 8.1 P112 L6 # 90

DeAndrea, John Finisar II-VI

Comment Type E Comment Status D

"Any of the test patterns given for a particular test in Table 154-12 may be used to perform that test." is not needed

SuggestedRemedy

Remove sentance

Proposed Response Response Status W

PROPOSED REJECT.

The intent of the sentence is to indicate that we need a similar Table with test patterns as for other in-force optical clauses. Currently that whole part is "TBD".

CI 154 SC 8.1 P112 L16 # 91

DeAndrea, John Finisar II-VI

Comment Type E Comment Status D

TBD not required

SuggestedRemedy

Eliminate TBD

Proposed Response Response Status W

PROPOSED REJECT.

No clarification is provided why TBD would not be required. See also response to comment #90



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CI 154 SC 8.1 P112 L19 # 92  
 DeAndrea, John Finisar II-VI  
 Comment Type E Comment Status D  
 Consider dropping table  
 SuggestedRemedy  
 Drop table since a specific pattern is not required for testing transmitter characteristics.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No clarification is provided why a list of test patterns is not required.  
 See also response to comment #90

CI 154 SC 8.2 P112 L33 # 93  
 DeAndrea, John Finisar II-VI  
 Comment Type E Comment Status D  
 eliminate sentence.  
 SuggestedRemedy  
 eliminate sentence "The transmitter is modulated using the test pattern defined in Table 154-12."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See response to comment #90

CI 154 SC 8.3 P112 L38 # 94  
 DeAndrea, John Finisar II-VI  
 Comment Type E Comment Status D  
 Modify  
 SuggestedRemedy  
 Change to: "The average optical power is measured per the test setup in Figure 53-6."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No reason has been provided why the current description is inappropriate or wrong.  
 See also resolution to comment #90

CI 154 SC 9.1 P114 L51 # 95  
 DeAndrea, John Finisar II-VI  
 Comment Type E Comment Status D  
 Modify sentence  
 SuggestedRemedy  
 Change to: "whether coupled into a fiber or from an open MDI active output"  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No evidence / description has been provided why the current sentence is wrong or inappropriate.  
 The current sentence is completely consistent with similar sentences in in-force optical clauses.

CI 154 SC 154.3.2 P102 L48 # 73  
 Stassar, Peter Huawei  
 Comment Type TR Comment Status A  
 TBD for skew at SP2, SP3, SP4 and SP5 needs a value and additionally the sentences that there is no skew variation need to be removed because of the presence of 2 lanes, each at 50 Gb/s  
 SuggestedRemedy  
 Replace text by "Skew at SP2 is limited to 43 ns and the Skew Variation at SP2 is limited to 400 ps. The Skew at SP3 (the transmitter MDI) shall be less than 54 ns and the Skew Variation at SP3 shall be less than 600 ps. The Skew at SP4 (the receiver MDI) shall be less than 134 ns and the Skew Variation at SP4 shall be less than 3.4 ns. If the PMD service interface is physically instantiated so that the Skew at SP5 can be measured, then the Skew at SP5 shall be less than 145 ns and the Skew Variation at SP5 shall be less than 3.6 ns."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Implement suggested remedy with editorial license.

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CI 154 SC 154.5.2 P104 L41 # 39

Bruckman, Leon Huawei  
 Comment Type E Comment Status D

Text not clear

*SuggestedRemedy*

Change: "The PMD Transmit function shall convert the two DQPSK symbol streams requested by the PMD service interface messages PMD:IS\_UNITDATA\_0.request to PMD:IS\_UNITDATA\_1.request into two DQPSK optical signals on orthogonal polarizations and delivered to the MDI,"

to: "The PMD Transmit function shall convert the two DQPSK symbol streams requested by the PMD service interface messages PMD:IS\_UNITDATA\_0.request to PMD:IS\_UNITDATA\_1.request into two DQPSK optical signals on orthogonal polarizations and deliver them to the MDI,"

*Proposed Response* Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 See resolution to comment #67

CI 154 SC 154.5.2 P104 L44 # 67

Brown, Matt Huawei Technologies Canada  
 Comment Type T Comment Status D

The change made in D1.2 is incorrect. It is a stream of DPQSK symbols transferred via the tx\_symbol parameter. Although tx\_symbol is earlier defined in the referenced 116.3 its reference here is somewhat mysterious.

*SuggestedRemedy*

Change 154.5.2. to the following:  
 "The PMD Transmit function shall convert the two DQPSK symbol streams requested by the PMD service interface messages PMD:IS\_UNITDATA\_0.request(tx\_symbol) and PMD:IS\_UNITDATA\_1.request(tx\_symbol) into two DQPSK optical signals on orthogonal polarizations and delivered to the MDI, all according to the transmit optical specifications in this clause.

The PMD maps symbols from each tx\_symbol parameter to phase changes to each of the DQPSK optical signals as specified in Table 154-4.

*Proposed Response* Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change to "The PMD Transmit function shall convert the two DQPSK symbol streams requested by the PMD service interface messages PMD:IS\_UNITDATA\_0.request(tx\_symbol) and MD:IS\_UNITDATA\_1.request(tx\_symbol) into two DQPSK optical signals on orthogonal polarizations and be delivered to the MDI, all according to the transmit optical specifications in this clause.  
 The PMD maps symbols from each tx\_symbol parameter to phase changes to each of the DQPSK optical signals as specified in Table 154-4."

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CI 154 SC 154.5.3 P105 L39 # 68

Brown, Matt Huawei Technologies Canada

Comment Type T Comment Status D

The change made in D1.2 is incorrect. It is a stream of DPQSK symbols transferred via the rx\_symbol parameter. Although rx\_symbol is earlier defined in the referenced 116.3, its reference here is somewhat mysterious. The list of primitives is two so connector should be "and" not "to".

SuggestedRemedy

Change the text in 154.5.3 to:  
 The PMD Receive function shall convert the composite optical signal received from the MDI into two DQPSK symbol streams for delivery to the PMD service interface using the messages PMD:IS\_UNITDATA\_0.indication(rx\_symbol) and PMD:IS\_UNITDATA\_1.indication(rx\_symbol), all according to the receive optical specifications in this clause.  
 The PMD maps the phase changes on each of the DQPSK optical signals to symbols on each rx\_symbol parameter as specified in Table 154-4.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change to:  
 "The PMD Receive function shall convert the composite optical signal received from the MDI into two DQPSK symbol streams for delivery to the PMD service interface using the messages PMD:IS\_UNITDATA\_0.indication(rx\_symbol) and PMD:IS\_UNITDATA\_1.indication(rx\_symbol), all according to the receive optical specifications in this clause.  
 The PMD maps the phase changes on each of the retrieved DQPSK signals to symbols on each rx\_symbol parameter as specified in Table 154-4."  
 and the last sentence of 154.5.3 to:  
 "Table 154-4 shows the mapping of the phase change of the retrieved DQPSK signals to the DQPSK rx\_symbol streams for delivery to the PMD service interface."

CI 154 SC 154.5.4 P105 L48 # 69

Brown, Matt Huawei Technologies Canada

Comment Type T Comment Status D Bucket

Although the service interface in 116.3 is used as a basis for specification, subclause 154.2 (which specifies the service interface for this PMD) further elaborates (e.g., number of leans, SIGNAL\_OK parameter values, etc.) the details. Should reference 154.2 instead.

SuggestedRemedy

Change "116.3" to "154.2".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 154 SC 154.5.4 P106 L6 # 74

Stassar, Peter Huawei

Comment Type TR Comment Status A

TBD for Signal\_Detect Fail needs a value. Considering that this Clause primary objective is to achieve distances up to at least 80 km on the basis of an optically amplified black link it is proposed to use the common average power value of -30 dBm and add a note that for unamplified cases a lower threshold may be necessary

SuggestedRemedy

Replace TBD by "-30" and add a note "for applications on unamplified links it may be necessary to use a lower value".

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace TBD by "-30"

CI 154 SC 154.5.4 P106 L9 # 46

Maguire, Valerie The Siemon Company

Comment Type E Comment Status D Bucket

Should "(compliant 100GBASE-R)]" be on the same line as "AND"?

SuggestedRemedy

Remove extraneous carriage return or correct as needed.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 154 SC 154.5.4 P106 L20 # 75

Stassar, Peter Huawei

Comment Type TR Comment Status A

The TBD needs to be replaced by describing a condition of the signal that is being monitored

SuggestedRemedy

Replace "in response to the TBD of the optical signal and implementations that respond to the average optical power of the modulated optical signal." by "in response to the average optical power of the modulated optical signal."

Response Response Status C

ACCEPT.

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CI 154 SC 154.7.1 P109 L49 # 40

Bruckman, Leon Huawei  
 Comment Type E Comment Status D

"Minimum channel spacing" is not defined.

*SuggestedRemedy*

"Minimum channel spacing" is defined in ITU-T G.671 clause 3.2.3.17 as: "The centre-to-centre difference in frequency or wavelength between adjacent channels in a WDM device. DWDM channel spacings are based on the grid found in [ITU-T G.694.1]. CWDM channel spacings are based on the grid found in [ITU-T G.694.2].".

So in clause 154.8 it can be defined as: "The minimum channel spacing, as defined in Recommendation ITU-T G.671, shall be within the limits given in Table 154-8."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 See resolution to comment #84

CI 154 SC 154.7.1 P110 L5 # 76

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

The TBD for Average channel output power (max) needs a value. Proposed is 0 dBm, leaving a setting range of 8 dB, sufficient to meet the requirements for the 80 km application, in line with remarks made during previous meetings that for most implementations the optical output power can be easily adjusted.

*SuggestedRemedy*

Replace TBD by "0" (zero)

Response Response Status C

ACCEPT.

CI 154 SC 154.7.1 P110 L5 # 99

Schmitt, Matt CableLabs  
 Comment Type T Comment Status R

For the TBD value of "Average channel output power (max)" in Table 154-8, propose adopting the same value as the CableLabs PHYv1.0 specification, which was selected as a safety threshold (as opposed to a power level anyone thought would ever be used).

*SuggestedRemedy*

Change "TBD" to "7" for "Average channel output power (max)" in Table 154-8.

Response Response Status C

REJECT.

See resolution to comment #76

CI 154 SC 154.7.1 P110 L26 # 119

Lewis, David Lumentum  
 Comment Type T Comment Status D

Optical return loss tolerance should be a minimum value, not maximum. For example, a return loss from the black link of 24 dB would result in more power reflected back into the transmitter and a return loss from the black link of 26 dB would result in less power reflected back into the transmitter. Therefore the limit value of 25 dB is a minimum, not a maximum.

*SuggestedRemedy*

Change description to "Optical return loss tolerance (min)"

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 154 SC 154.7.2 P111 L11 # 77

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

The TBD needs to be replaced by a value. It is suggested to specify 3 dBm, which is 3 dB above the proposed Tx average output power.

*SuggestedRemedy*

Replace TBD by "3"

Response Response Status C

ACCEPT.

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CI 154 SC 154.7.3 P111 L36 # 78

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

At the January 2020 meeting in Geneva it was agreed to set the maximum chromatic dispersion to 1600 ps/nm. This is appropriate for black links containing 80 km of G.652 fiber. ITU-T SG15 at its recent closing plenary meeting 7 Feb 2020 consented revised Recommendation G.654, adding new fiber type G.654.E, optimized for low loss, but with somewhat higher chromatic dispersion values. This new fiber type should not be precluded for usage inside the black link, because it may be appealing for operators/users. The worst case chromatic dispersion over the wavelength range of interest is 24.14 ps/nm, leading to a worst case link dispersion of 1931 ps/nm. 2000 ps/nm would be an appropriate rounded number for 80 km links. The relevant ITU-T Recommendations provide a difference in maximum attenuation of 0.05 dB/km, implying a loss difference of 4 dB over 80 km.

SuggestedRemedy  
 Replace 1600 by 2000

Response Response Status C  
 ACCEPT.

CI 154 SC 154.7.3 P111 L36 # 86

Stassar, Peter Huawei  
 Comment Type T Comment Status A

The term "residual" between brackets in the parameter name "(residual) chromatic dispersion" may be confusing and imply usage of dispersion compensation inside the black link, which is unlikely in the anticipated applications. Therefore it is proposed to remove "(residual)".

SuggestedRemedy  
 Remove "(residual)" in both parameter entries in Table 154-10.

Response Response Status C  
 ACCEPT.

CI 154 SC 154.7.3 P111 L37 # 79

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

A dispersion of -200 ps/nm will occur only when using G.653 (dispersion shifted) fibers, which are not anticipated to be used in C-band applications. Therefore the minimum chromatic dispersion should be 0 ps/nm for 0 km.

SuggestedRemedy  
 Replace -200 by 0 (zero)

Response Response Status C  
 ACCEPT.

CI 154 SC 154.7.3 P111 L39 # 80

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

The parameter "Fiber zero dispersion wavelength" does not seem to useful. Should be deleted

SuggestedRemedy  
 Delete row for "Fiber zero dispersion wavelength" from Table

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Delete row for "Fiber zero dispersion wavelength" from Table 154-10

CI 154 SC 154.7.3 P111 L40 # 81

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

The TBD for "Fiber dispersion slope (max) (S0)" needs to be replaced by a value. 0.05 ps/nm.nm.km is an appropriate minimum for both G.652 and G.654.E fibers avoiding occurrence of FWM

SuggestedRemedy  
 Replace TBD by 0.05

Response Response Status C  
 ACCEPT IN PRINCIPLE.

In table 154-10 replace for parameter fiber dispersion slope replace (max) by (min). Replace TBD by 0.05.

CI 154 SC 154.7.3 P111 L42 # 82

Stassar, Peter Huawei  
 Comment Type TR Comment Status A

There should be a value of 25 dB for "Minimum optical return loss at TP2" in accordance with agreed resolution to comment #88 to D1.1. at the January 2020 meeting in Geneva

SuggestedRemedy  
 Replace TBD by 25

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Replace TBD by 25 in Table 154-10.

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CI 154 SC 154.7.3 P111 L43 # 83  
 Stassar, Peter Huawei  
 Comment Type TR Comment Status A  
 Because the medium is a black link there should not be a requirement for "Maximum discrete reflectance between TP2 and TP3"  
 SuggestedRemedy  
 Delete row for "Maximum discrete reflectance between TP2 and TP3" from Table  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See response to comment 104

CI 154 SC 154.8.1 P111 L1 # 100  
 Schmitt, Matt CableLabs  
 Comment Type E Comment Status D  
 Shouldn't Table 154-9 be in Sub-clause 154.7.2 as in previous drafts? Is there a reason that it isn't inline with that text? If not, it should be moved there.  
 SuggestedRemedy  
 Move Table 154-9 back into sub-clause 154.7.2.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This is a cosmetic issue, which will be dealt with during the final editing just before publication.  
 The current position of the Table is created automatically by AdobeFramemaker.

CI 154 SC 154.8.1 P111 L11 # 102  
 Schmitt, Matt CableLabs  
 Comment Type T Comment Status A  
 For the TBD value of "Damage threshold" in Table 154-9, the most energy that could hit the receiver if a transmitter and receiver are connected back to back would nominally be the same as the max output from the transmitter as defined in Table 154-8. However, if the signal were fed into an optical amplifier before being connected to the receiver it could be much higher. Therefore, for additional safety in this case, propose setting the value to +18 dBm.  
 SuggestedRemedy  
 Change "TBD" to "18" for "Damage threshold" in Table 154-9.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See resolution to comment #77.

CI 154 SC 154.8.1 P111 L29 # 101  
 Schmitt, Matt CableLabs  
 Comment Type E Comment Status D  
 Shouldn't Table 154-10 be in Sub-clause 154.7.3 as in previous drafts? Is there a reason it isn't inline with that text? If not, it should be moved there.  
 SuggestedRemedy  
 Move Table 154-10 back into sub-clause 154.7.3.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This is a cosmetic issue, which will be dealt with during the final editing just before publication.  
 The current position of the Table is created automatically by AdobeFramemaker.

CI 154 SC 154.8.1 P111 L42 # 103  
 Schmitt, Matt CableLabs  
 Comment Type T Comment Status A  
 In table 86-10, Optical Return Loss is defined as being measured at point TP2 looking downstream into the fiber. Therefore, having "Optical return loss" in Table 154-8 and "Optical return loss at TP2" in Table 154-10 is redundant, since they are both the same thing measured at the same point (one implicitly, one explicitly). To be consistent with other usage in 802.3, propose keeping "Optical return loss" in Table 154-8, and removing "Optical return loss at TP2" from Table 154-10.  
 SuggestedRemedy  
 Delete the row from Table 154-10 for "Optical return loss at TP2".  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Remove "Optical return loss" in Table 154-8 and leave it in Table 154-10.

CI 154 SC 154.8.1 P111 L43 # 104  
 Schmitt, Matt CableLabs  
 Comment Type T Comment Status A  
 Per the contribution stassar\_3ct\_01\_200213, propose to remove "Maximum discrete reflectance between TP2 and TP3" from Table 154-10.  
 SuggestedRemedy  
 Delete the row from Table 154-10 for "Maximum discrete reflectance between TP2 and TP3".  
 Response Response Status C  
 ACCEPT.

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CI 154 SC 154.8.1 P112 L15 # 121  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type **TR** Comment Status **D**  
 The last entry in Table 154-11 is TBD. There are no other defined test patterns.  
 SuggestedRemedy  
 1. Delete the contents of the entire row for the "TBD" entry  
 2. Rename Table 154-11 to "Test Pattern"  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 No evidence has been provided that not more than one test pattern is appropriate/necessary.  
 See also resolution to comment #90.

CI 154 SC 154.8.1 P112 L18 # 123  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type **E** Comment Status **D**  
 The title for Table 154-12 seems incorrect. The ITest pattern definitions are in Table 154-11. What is actually being defined is the test patterns during testing of optical parameters  
 SuggestedRemedy  
 Change title of Table 154-12 to "Optical Parameter Test-pattern definitions and related subclauses."  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 The whole topic of test patterns still needs to be completed.  
 As soon as that has been established, the correct title should be defined.  
 The current title is consistent with existing in-force clauses

CI 154 SC 154.8.1 P112 L22 # 122  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type **TR** Comment Status **D**  
 There has only been one test pattern defined in Table 154- in that can be used in Table 154-12 for the optical parameters.  
 SuggestedRemedy  
 Change TBD in all optical parameter entries to Pattern 5.  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 See resolution to comments #90 and #123.

CI 154 SC 154.8.1 P112 L27 # 120  
 D'Ambrosia, John Futurewei, U.S. Subsidiary of Huawei  
 Comment Type **TR** Comment Status **D**  
 The last entry in Table 154-12 is TBD. There are no other test parameters requiring a test pattern definition pointing to Table 154-12 in the draft  
 SuggestedRemedy  
 Delete the contents of the entire row for the "TBD" entry  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 See resolution to comments #90 and #123

CI 154 SC 154.8.13 P113 L47 # 89  
 Maniloff, Eric Ciena  
 Comment Type **E** Comment Status **D**  
 The reach will likely be limited to < 80km for the unamplified case due to the input power restriction, not the OSNR. So the comment "The associated channel loss will likely limit the maximum reach of these applications to less than 80 km specified for amplified applications." should be in clause 154.8.13 rather than 154.8.15  
 SuggestedRemedy  
 Move the text "The associated channel loss will likely limit the maximum reach of these applications to less than 80 km specified for amplified applications." from clause 154.8.15 to 154.8.13  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 The current sentence ""The requirement for OSNR(193.6) [unamplified] is intended to specify usage of the same receiver for unamplified applications with likely shorter links than 80 km, without including requirements for the associated medium." has been inserted in D1.1 as a result to comment #24 to D1.0.  
 This sentence is about "OSNR(193.6) [unamplified]."

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Cl 154 SC 154.9.1 P114 L44 # 106

Nicholl, Gary Cisco systems

Comment Type T Comment Status D

P802.3cr is harmonizing general safety references across all of IEEE 802.3 in Annex J. P802.3cr is in the 1st WG ballot recirculation and is likely to complete the ballot cycle prior to P802.3ct. Coordination between TFs and the P802.3cr project should be maintained to keep this material in sync.

*SuggestedRemedy*

Change "All equipment subject to this clause shall conform to IEC 60950-1." to "All equipment subject to this clause shall conform to the general safety requirements as specified in J.2". Add Editor's Note to be removed prior to SA ballot to align text with changes to P802.3cr.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 154 SC 154.11 P117 L1 # 107

Nicholl, Gary Cisco systems

Comment Type T Comment Status D

If Annex J is inserted in 154.9.1 then the PICs require updating.

*SuggestedRemedy*

Add "General Safety" PICS entry and use "Conforms to J.2" for Value/format.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The "General Safety" PICS entry is not currently in the document but there is a proposal in support of comment 125. Modify any "General Safety" entries in response to comment 125 to "Conforms to J.2" for Value/Comment.

Cl 154 SC 154.11.13 P118 L1 # 125

Issenhuth, Tom Huawei

Comment Type E Comment Status D

The PICs tables starting in 154.11.3 are incomplete.

*SuggestedRemedy*

Complete the required PICS tables with the information from issenhuth\_3ct\_04\_0320

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

For TF discussion. If an entry for "General Safety" is added, align the Value/Comment with the Value/Comment from comment 107.