Cl **FM** *SC* **FM** *P* **11** *L* **17** # 88

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

One would reasonably assume that "the existing base standard and its amendments" mentioned on p21 is IEEE Std 802.3-2015 and IEEE Std 802.3bw, as listed on pp10-11. Yet e.g. 45.2.1 mentions IEEE Std 802.3bn and 45.2.3.6 mentions IEEE Std 802.3bq.

SuggestedRemedy

List all the documents that this builds on. If this project completes before one of them, the staff editor can remove that paragraph.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **28** # 79

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

IEEE-SA style guide only requires a maximum of three levels need to be shown in the table of contents. However:
IEEE Std 802.3-2012 has all five levels, so does P802.3bx;
This amendment is less than 250 pages long vs. e.g. Section Six at 700 pages, so the full table of contents (13 pages vs. 9 if truncated) is not too onerous;
It helps the reviewer who wants to see what's in the draft;
It helps editor and reviewer check that the structure and nesting of subclauses is OK;
The pdf bookmarks are not a complete substitute - try getting all the bookmarks for Clause 45 in this draft on one screen;
We can do the right thing in a draft, just as we don't use the separate Roman numbering of the front matter - the staff editor can change these things for publication very quickly.
It would be a bad thing if early drafts in a project did not reveal the full contents and structure in the printable, zoomable draft. It's a disservice to anyone who reviews a draft for the first time at Sponsor ballot to miss out this information.

SuggestedRemedy

For preference, reinstate all the table of contents in D2.2 and leave it to the staff editor to do any pruning.
Definitely, for future projects, don't prune before the first recirculation at WG ballot.

Proposed Response *Response Status* **O**

Cl **000** *SC* **0** *P* **1** *L* **1** # 13

Laubach, Mark — Broadcom Corporation

Comment Type **TR** *Comment Status* **X**

This comment follows on an unsatisfied R comment #236 against Draft 2.0. Technically 802.3-2015 and almost all prior versions of the 802.3 Ethernet standard defines "channel" in Clause 1 as "In 10BROAD36, a band of frequencies dedicated to a certain service transmitted on the broadband medium". This definition holds true for Clause 11 as well as updated for use in upcoming P802.3bn EPoC Clauses 100, 101, 102, and 100A. (This definition may even hold true for future definitions for optical channels on fiber - however, we'll leave that for their future to determine.). Other clauses including .by, have used "channel" without (errantly) updating the 802.3 definition, creating a technical incorrectness. I think now is the time and opportunity to correct this. The existing definition needs to be maintained (not altered) as the original (for example an "1.") definition, however it is likely prudent to add an addition (for example a "2.") definition as part of the .by draft process, with cross references to the .by clauses of interest. Through maintenance, existing clauses can be added to the additional definition list of cross references, as appropriate.

SuggestedRemedy

Coordinate with the IEEE Editor(s) for best approach, and also coordinate with the P802.3bn Chief Editor to avoid editorial instruction collisions. Suggestion: take the existing Clause 1 definition for "channel" and prepending with an "1. " then adding a "2. " definition and a suitable definition for the use of "channel" in .by with cross reference(s) to the necessary .by clause(s).

Proposed Response *Response Status* **O**

Cl **000** *SC* **0** *P* **87** *L* **54** # 44

Remein, Duane — Huawei

Comment Type **TR** *Comment Status* **X**

The 802.3by use of the word "channel" is not in alignment with the definition used in STD 802.3 (see definition as being ammended by 802.3bn below).
"1.4.134 channel: In 10BROAD36 and 10GPASS-XR, a band of frequencies dedicated to a certain service transmitted on the broadband medium. (See IEEE Std 802.3, Clause 11, Clause 100, and Clause 101.)"

SuggestedRemedy

Recommend 802.3by further ammend (or otherwise work with 802.3bn) the definition of channel to provide a 2nd definition expressing it's use within 802.3by.
For example:
Change the definition of 1.4.134 as ammended by P802.3bn as follows:
1.4.134 channel: >>1)<< In 10BROAD36 and 10GPASS-XR, a band of frequencies dedicated to a certain service transmitted on the broadband medium. (See IEEE Std 802.3, Clause 11, Clause 100, and Clause 101.)>>, 2) a data path or link.<<
Text within ">>" & "<<" underlined per ammendment mark-up practices.

Proposed Response *Response Status* **O**

Cl **001** *SC* **1.3** *P* **22** *L* **35** # 62

Dudek, Mike — QLogic

Comment Type **T** *Comment Status* **X**

The document SFF 8436 has been revised for some time and revisions 4.1 is no longer readily available.

SuggestedRemedy

Change Revision 4.1, August 24, 2011, to Rev 4.8, October 31, 2013.

Proposed Response *Response Status* **O**

Cl **030** *SC* **30.5.1.1.15** *P* **26** *L* **2** # 63

Dudek, Mike — QLogic

Comment Type **T** *Comment Status* **X**

Having Clause 74 referred to in both the optional and mandatory sections is clumsy and Clause 30 isn't the place to be saying whether this feature is optional or mandatory.

SuggestedRemedy

Reword the paragraph to say. "A read-only value that indicates if the PHY supports an FEC sublayer for forward error correction (see 65.2, Clause 74 Clause 91, and Clause 108) FEC sublayer for forward error correction."

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.2.3** *P* **30** *L* **42** # 26

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **X**

The references in "45.2.1.19, 45.2.1.42, 45.2.1.43, and 45.2.1.58." should be in forest green.

SuggestedRemedy

Re-number Table 45-17c to Table 45-17b

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.4** *P* **31** *L* **20** # 29

Marris, Arthur — Cadence Design Syste

Comment Type **E** *Comment Status* **X**

Editing instruction needs to be updated to reference 802.3bn

SuggestedRemedy

Change:
"Insert new subclause 45.2.1.4.a before 45.2.1.4.1 as follows:"

To:
"Insert new subclause 45.2.1.4.a before 45.2.1.4.b (as inserted by IEEE Std 802.3bn-201x) as follows:"

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.6** *P* **33** *L* **5** # 19

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **X**

The entries in Table 45-7 do not reflect the changes that IEEE Std 802.3bw-201x (which has completed Sponsor Ballot) is making to bits 1.7.5:0

SuggestedRemedy

Change the editing instruction to:
"Change the indicated row of Table 45–7 (as modified by IEEE Std 802.3bw-201x) for 25G PMA/PMD selection as follows (unchanged rows not shown):"
Replace the row "1 1 x x x x = reserved" (in strikethrough font) with "1 1 1 0 x x = reserved for future use" (in strikethrough font)
Remove the row "1 1 0 x x x = reserved"

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.14c** *P* **36** *L* **1** # 25

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **X**

The editing instruction says "Insert 45.2.1.14c and 45.2.1.14c.1 through 45.2.1.14c.5 after 45.2.1.14b as inserted by IEEE Std 802.3bw-201x as follows:" but the subclause inserted by the P802.3bw draft has been changed to be 45.2.1.14a.
Also, the Table inserted by the P802.3bw draft is now Table 45-17a.

SuggestedRemedy

Change the editing instruction to: "Insert 45.2.1.14b and 45.2.1.14b.1 through 45.2.1.14b.5 after 45.2.1.14a as inserted by IEEE Std 802.3bw-201x as follows:" and re-number the new subclauses accordingly.

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.97** *P* **38** *L* **48** # 20

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **X**

In the editing instruction on line 48, "45.2.1.95" should be "45.2.1.97"

SuggestedRemedy

Change "45.2.1.95" to "45.2.1.97"

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.97** *P* **38** *L* **50** # 21

Anslow, Pete Ciena

Comment Type **ER** *Comment Status* **X**

The title of Register 1.180 is being changed in the subclause title and the first sentence of 45.2.1.97 and in the title of Table 45-77, but not in Table 45-3 which has a row:
Register address = 1.180 through 1.183
Register name = CAUI-4 chip-to-chip transmitter equalization, receive direction, lane 0 through lane 3
Subclause = 45.2.1.97, 45.2.1.98
Also, there are many references to "CAUI-4" in the subclauses of 45.2.1.97 which don't make sense when this register is used for 25GAUI.
There are the same issues with the change of name for register 1.184

SuggestedRemedy

In Table 45-3, change the existing row into two rows:
Register address = 1.180
Register name = CAUI-4 C2C and 25GAUI C2C transmitter equalization, receive direction, lane 0
Subclause = 45.2.1.97

Register address = 1.181 through 1.183
Register name = CAUI-4 chip-to-chip transmitter equalization, receive direction, lane 1 through lane 3
Subclause = 45.2.1.98

Fix the issues with the references to "CAUI-4" in the subclauses of 45.2.1.97
Make equivalent changes for Register 1.184

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.1.102** *P* **40** *L* **12** # 6

Ran, Adee Intel

Comment Type **ER** *Comment Status* **X**

The style manual specifically says (18.2.2) "Replace shall be used only for figures and equations" and "Change shall be used when text and tables are being modified (...) (deletions and instructions) should be indicated".

SuggestedRemedy

Change editing instructions in 45.2.1.102.1 and 45.2.1.102.2 from "Replace" back to "Change". Bring back the original text in strikethrough and underline the new text, as in D2.0.

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.3.1.5** *P* **41** *L* **52** # 7

Ran, Adee Intel

Comment Type **TR** *Comment Status* **X**

The text in the base document refers to a PCS of specific port types (10PASS-TS and 2BASE-TL) which is defined in clause 61. This PCS seems to be an exception - PCS and port types for all other Ethernet speeds are not mentioned.

The text added in this draft (per comment 79 on D2.0) adds several non-specific port types, e.g. "the 10 Gb/s PCS" - but there are several PCS sublayers for 10 Gb/s operation, so "the" is not well defined. Also the register is named "Speed selection" but the text suggests the bits actually select the PCS... which doesn't seem to be correct - this is done using "PCS control 2 register". Compared to the PMA/PMD control register, where the text in 45.2.1.1.3 is explicit about specific selection "performed using the PMA/PMD control 2 register".

If we do add text here, since this subclause elaborates the information in Table 45-120, it would also help to include clause references to the PCSs in question.

The changes in this subclause seem to add more confusion than clarity, and most of them is arguably out of scope for this project. We should consider leaving it as it was.

SuggestedRemedy

If we maintain the new text:
1. Change "The 10 Gb/s PCS" to "A 10 Gb/s PCS".
[1.1 consider adding (10GBASE-W, 10GBASE-X, 10GBASE-R, 10GBASE-T or 10GBASE-PR; See Clause 44 and Clause 76).”]
2. Change similarly for 40G, 100G, and 25G.
3. Add after "The 10/1 Gb/s PCS": "(10GBASE-PRX, see Clause 76)".
4. Add a new paragraph at the end: "More specific selection is performed using the PCS control 2 register (Register 3.7) (see 45.2.3.6)."

Alternatively, delete all editing instructions, to avoid any change to this subclause.

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.3.2.7** *P* **42** *L* **8** # 27

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **X**

"Change second sentence of 45.2.3.2.7 as follows:" should be "Change the third sentence of 45.2.3.2.7 as follows:"

SuggestedRemedy

Change "Change second sentence of 45.2.3.2.7 as follows:" to "Change the third sentence of 45.2.3.2.7 as follows:"

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.3.6.1** *P* **0** *L* **0** # 15

Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **X**

In the description of PCS type selection a reference to MDIO register 3.8 bits 5:0 is made, but 25G is at index 7

SuggestedRemedy

Change the index from 5:0 to 7:0

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.3.13.1** *P* **44** *L* **36** # 22

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **X**

Missing "of" in "Change last sentence 45.2.3.13.1 as follows:"

SuggestedRemedy

Change to "Change last sentence of 45.2.3.13.1 as follows:"

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.3.15** *P* **45** *L* **46** # 23

Anslow, Pete — Ciena

Comment Type **ER** *Comment Status* **X**

The title of registers 3.34 through 3.37 are being changed in the subclause title of 45.2.3.15, but not in Table 45-119, the title of Table 45-130 or the first sentence of 45.2.3.15.
Same issue for the name of registers 3.38 through 3.41.

SuggestedRemedy

Also show the register name change in Table 45-119, the title of Table 45-130 and the first sentence of 45.2.3.15.
Make equivalent changes for registesr 3.38 through 3.41.

Proposed Response *Response Status* **O**

Cl **045** *SC* **45.2.3.17.2** *P* **46** *L* **9** # 24

Anslow, Pete — Ciena

Comment Type **ER** *Comment Status* **X**

The titles of subclauses 45.2.3.17.2, 45.2.3.17.3, and 45.2.3.17.4 have been changed, but the matching entries in Table 45-132 have not been changed.

SuggestedRemedy

Change the Name column in Table 45-132 to match the name changes in the titles of subclauses 45.2.3.17.2, 45.2.3.17.3, and 45.2.3.17.4.

Proposed Response *Response Status* **O**

Cl **069** *SC* **69.2.3** *P* **52** *L* **7** # 85

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

This Table 69-1a has a header "Clause" while Table 105-2 has "Clause/Annex". While the latter seems more correct, the base document and P802.3bs/D1.0 use the former.

SuggestedRemedy

Change this one to Clause/Annex, and log a maintenance request or remember to submit a comment on the next revision. Or change the other to Clause.

Proposed Response *Response Status* **O**

Cl **069** *SC* **69.2.3** *P* **52** *L* **8** # 84

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

"74" should be a hot link, like the others.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **069** *SC* **69.2.3** *P* **52** *L* **10** # 10

Ran, Adee — Intel

Comment Type **E** *Comment Status* **X**

Clause 108 RS-FEC is specific for 25GBASE-R, just like the PCS and PMA clauses, while the generic label "RS-FEC" applies to several other clauses.

SuggestedRemedy

Change column heading "RS-FEC" to "25GBASE-R RS-FEC".

Proposed Response *Response Status* **O**

Cl **073** *SC* **73.6.4** *P* **55** *L* **5** # 11

Ran, Adee — Intel

Comment Type **E** *Comment Status* **X**

"interoperation" as one word is commonly used in 802.3.

Also, "likewise" in the previous sentence seems odd, should it be "and likewise", or just "and"?

SuggestedRemedy

Delete the hyphen in "inter-operation".

Consider rewording "likewise".

Proposed Response *Response Status* **O**

Cl **073** *SC* **73.6.5** *P* **55** *L* **20** # 12

Hidaka, Yasuo
Fujitsu Labs of Americ

Comment Type **T** *Comment Status* **X**

Three cables types (CA-L, CA-S, CA-N) and two PMD types (CR and CR-S) are very confusing. Besides, there is no need to define two PMD types.
Since the difference between CR and CR-S is merely availability of RS-FEC, and SerDes analog frontend of PMD is most likely same, a single PMD (CR) with an optional RS-FEC (and a mandatory BASE-R FEC) should be sufficient. It significantly simplifies the entire specification.
It also helps to avoid confusion in the market, because a general user does not have to be concered about PMD types, and can focus on a cable type.
In addition, the FEC resolution scheme is unnecessarily complicated, because the arbitration is split between priority-based resolution using two PMD types and logic-based resolution using F2 and F3 bits.
A unified logic-based FEC resolution using three F bits (F2-F4) without priority-based resolution is much simpler and easier to use than the current FEC resolution scheme.
Since the proposed scheme is logically equivalent to the current scheme, it keeps the same flexibility for users as the current scheme.

SuggestedRemedy

P55/L20: Change definition of F2 and F3 as follows:

c) F2 is 25G RS-FEC ability
d) F3 is 25G RS-FEC requested
e) F4 is 25G BASE-R FEC requested

The following is a list of related changes:
P54/L6: Change D[43:21] with D[42:21], and D[47:44] with D[47:43].
P54/L22/Figure 73-6: Assign D42 to A21, D43 to F2, D44 to F3, D45 to F4.
P55/L9: Change A[22:11] with A[21:11].
P55/L16: Change the line with "FEC (F2:F3:F4:F0:F1) is encoded in bits D43:D47 of the base link codeword. The five FEC bits are used as follows:".
P55/L24: Change "F2 and F3" with "F2 through F4".

P55/L32: Change all paragraphs of 73.6.5.1 as follows:

FEC operation for 25G PHYs is resolved according to Table <reference to a new table below>.
If neither 25G PHY requests FEC operation in bits F3 or 4 then FEC is not enabled.
If either 25G PHY requests RS-FEC and both 25G PHYs have RS-FEC ability then RS-FEC operation is enabled.
Otherwise, BASE-R FEC operation is enabled.

P55/L31/cl73.6.5.1: insert the following new table:

F2(Local) and F2(Remote)	F3(Local) or F3(Remote)	F4(Local) or F4(Remote)	FEC mode
0	0	0	no FEC
0	0	1	BASE-R FEC
0	1	X	BASE-R FEC
1	0	0	no FEC
1	0	1	BASE-R FEC
1	1	X	RS-FEC

From the entire document, remove 25GBASE-CR-S and 25GBASE-KR-S, and change RS-FEC for 25GBASE-CR and 25GBASE-KR optional.

The following is a list of changes to texts:

P36/L9, Table 45-17c: Remove bits 1.19.0 and 1.19.2, reassign 1.19.1/3/4 to 1.19.0/1/2, and remove clause 45.2.1.14c.3 and 45.2.1.14c.5, update bit number in descriptions in clause 45.2.1.14c.1-4, renumber clause 45.2.1.14c.4.
P46/L23, Table 45-209: Remove bit 7.48.12, reassign 7.48.13 to 7.48.12, and remove 7.48.13 from title of 45.2.7.12.2, P47/L3.
P52/L4, Table 69-1a: Remove row of 25GBASE-KR-S. Remove column of 25GBASE-KR-S PMD. Change RS-FEC for 25GBASE-KR from M to O.
P54/L29, Table 73-4: Remove row of "25GBASE-KR-S or 25GBASE-CR-S". Reassign A9 to "25GBASE-KR or 25GBASE-CR" and A10 through A22 to "Reserved for future technology".
P55/L4: Remove the whole paragraph starting "25GBASE-KR-S abilities".
P57/L1, Table 73-5: Remove row of "25GBASE-KR-S or 25GBASE-CR-S". Reassign priority 8, 9, and 10 to 10GBASE-KR, 10GBASE-KX4, and 1000BASE-KX, respectively.
P73/L6, Table 78-1: Remove rows of "25GBASE-KR-S" and "25GBASE-CR-S".
P73/L29, Table 78-2: Remove row of "25GBASE-KR-S" "25GBASE-CR-S".
P77/L36, Table 105-1: Remove rows of "25GBASE-CR-S" and "25GBASE-KR-S".
P78/L10, Table 105-2: Remove rows of 25GBASE-CR-S and 25GBASE-KR-S and columns of 25GBASE-CR-S PMD and 25GBASE-KR-S PMD. Change RS-FEC for 25GBASE-CR and 25GBASE-KR from M (Mandatory) to O (Optional).
P87/L1, Table 105-3: Remove rows of "25GBASE-CR-S PMD" and "25GBASE-KR-S PMD".
P138/L18, Table 110-1: Remove column of 25GBASE-CR-S. Change RS-FEC from "Required" to "Optional".
P140/L4: Change "these PMD" with "this PMD".
P141/L46: Change "and" with "and may implement".
P146/L48: Change the paragraph with the following: "A 25GBASE-CR PHY shall comply with the receiver interference tolerance test requirements for the BASE-R FEC and no-FEC modes. A 25GBASE-CR PHY with the optional RS-FEC sublayer shall comply with the receiver interference tolerance test requirements for the RS-FEC mode."
P150/L35: Change the paragraph with the following: "For a 25GBASE-CR PHY, the receiver under test shall meet the error requirements specified for the tests in Table 110-6 and Table 110-7. For a 25GBASE-CR PHY with the optional RS-FEC sublayer, the receiver under test shall also meet the error requirement specified for the test in Table 110-5."
P150/L52: Change the paragraph with the following: "For a 25GBASE-CR PHY, the receiver under test shall meet the error requirements specified for the tests in Table 110-6 and Table 110-7, for each case listed in Table 110-8. For a 25GBASE-CR PHY with the optional RS-FEC sublayer, the receiver under test shall also meet the error requirements specified for the test in Table 110-5 for each case listed in Table 110-8."

P151/L28: Change the paragraph with the following: "Channel definitions apply for links between two 25GBASE-CR PHYs."
P160/L6: Change "*CR" with "CR". Change "O" with "M". Remove "No []".
P160/L8: Remove row of "CR-S".
P160/L16: Change "RS-FEC" with "*RS-FEC". Change "CR:M" with "O". Change "N/A []" with "No []".
P164/L35, RC5: Change "CR:M" with "RS-FEC:M".
P164/L45, RC9: Change "CR:M" with "RS-FEC:M".
P167/L16, Table 111-1: Remove column of 25GBASE-KR-S. Change RS-FEC for 25GBASE-KR from "Required" to "Optional".
P168/L52: Change "these PMDs" with "this PMD".
P170/L38: Change "and" with "and may implement".
P174/L20: Change the paragraph with the following: "A 25GBASE-KR PHY shall comply with the receiver interference tolerance test requirements for the BASE-R FEC mode and no-FEC mode. A 25GBASE-CR PHY with the optional RS-FEC sublayer shall comply with the receiver interference tolerance test requirements for the RS-FEC mode."
P176/L10: Change the paragraph with the following: "For a 25GBASE-KR PHY, the receiver under test shall meet the error requirement specified for the tests in Table 111-5 and Table 111-6, for each case listed in Table 111-7. For a 25GBASE-KR PHY with the optional RS-FEC sublayer, the receiver under test shall also meet the error requirement specified for the test in Table 111-4 for each case listed in Table 111-7."
P176/L27: Change the paragraph with the following: "Channel Characteristics are defined by Channel Operating Margin (COM), computed using the procedure in 93A.1. The parameters used for calculation of COM are different for channels used to connect two 25GBASE-KR PHYs both with the RS-FEC sublayer and for channels used to connect two 25GBASE-KR PHYs either without the RS-FEC sublayer."
P176/L33: Change title of 111.9.1 with "Channel for 25GBASE-KR PHYs with RS-FEC sublayer".
P176/L34: Change "two 25GBASE-KR PHYs" with "two 25GBASE-KR PHYs both with the RS-FEC sublayer".
P176/L41: Change title of 111.9.2 with "Channel for 25GBASE-KR PHYs without RS-FEC sublayer".
P176/L43: Change "one or two 25GBASE-KR-S PHYs" with "two 25GBASE-KR PHYs either without the RS-FEC sublayer".
P177/L4, Table 111-8: Change title of third column and fourth column with "25GBASE-KR with RS-FEC" and "25GBASE-KR without RS-FEC", respectively.
P178/L1, Table 111-8: Change title of third column and fourth column with "25GBASE-KR with RS-FEC" and "25GBASE-KR without RS-FEC", respectively.
P180/L6: Change "*KR" with "KR". Change "O" with "M". Remove "No []".
P180/L8: Remove row of "KR-S".
P180/L16: Change "RS-FEC" with "*RS-FEC". Change "KR:M" with "O". Change "N/A []" with "No []".
P184/L22, RC8: Change "KR:M" with "RS-FEC:M".
P184/L27, RC10: Change "KR:M" with "RS-FEC:M".
P184/L41, CC1: Change "CHNL*KR:M" with "CHNL*RS-FEC:M".
P184/L44, CC2: Change "CHNL*!KR:M" with "CHNL*!RS-FEC:M".
P204/L14, Table 93A-2: Remove rows of "25GBASE-CR-S" and "25GBASE-KR-S".

The following is a list of locations where simple removal of entire paragraph about "25GBASE-CR-S" or "25GBASE-KR-S" is required:

P23/L1,P23/L7
P26/L8,P26/L12
P28/L32
P51/L28: The 25GBASE-KR-S embodiment employs ...
P138/L43: A 25GBASE-KR-S PHY supports ...
P141/L47: A 25GBASE-CR-S PHY implements ... (Clause 74).
P142/L5: A 25GBASE-CR-S PHY can operate ...
P167/L40: A 25GBASE-KR-S PHY only supports ... with a 25GBASE-KR-S PHY.
P170/L39: A 25GBASE-KR-S PHY implements ... (Clause 74).
P170/L50: A 25GBASE-KR-S PHY can operate ...

The following is a list of locations where simple removal of "25GBASE-CR-S" and "25GBASE-KR-S" and associated local grammatical changes such as "and", "or", ",(comma)", "s(plural)" are required:

P2/L2,P2/L3,P2/L7,P2/L8
P27/L27,P27/L28
P33/L8,P33/L9
P34/L13,P34/L14,P34/L29,P34/L30,P34/L45,P34/L46
P46/L20
P49/L16
P50/L25 (in Figure 69-1a)
P51/L7, P51/L25
P53/L46 (two locations)
P56/L27 (two locations)
P56/L34
P57/L39, P57/L40
P59/L21 (two locations)
P73/L49 (two locations)
P74/L16, P74/L18 (in Table 78-4)
P76/L12, P76/L13, P76/L35 (two locations), P76/L45 (two locations)
P79/L44 (two locations)
P98/L35 (two locations)
P129/L18 (two locations)
P136/L23, P136/L25 (in the feature of *KRCR)
P138/L2 (clause 110 title), P138/L7, P138/L11
P138/L18 (table 110-1 title), P138/L47
P139/L10, P139/L14, P139/L40 (in Figure 110-1)
P139/L50 (Figure 110-1 title)
P140/L3, P140/L34
P142/L21
P142/L46 (Figure 110-2 title)
P145/L42
P146/L17, P146/L23, P146/L31
P147/L37 (Table 110-6 title)
P148/L1 (Table 110-6 title), P148/L19 (Table 110-7 title)
P151/L16, P151/L34, P151/L35
P156/L47

P157/L3
P159/L3 (clause 110.13 title), P159/L8, P159/L38
P161/L20 (clause 110.13.4 title)
P167/L2 (clause 111 title), P167/L7, P167/L16 (Table 111-1 title), P167/L44
P168/L7, P168/L35 (in Figure 111-1), P168/L45 (Figure 111-1 title)
P168/L51
P169/L27
P171/L12, P171/L32 (in Figure 111-2)
P173/L33, P173/L44
P174/L3
P175/L1 (Table 111-5 title), P175/L28 (Table 111-6 title)
P179/L3 (clause 111.11 title), P179/L8, P179/L38
P181/L2 (clause 111.11.4 title)
P224/L7 (Annex 110A title), P224/L15
P226/L37
P227/L6 (Annex 110B title), P227/L11, P227/L14
P230/L2 (clause 110B.2 title), P230/L9, P230/L38
P231/L13 (clause 110B.2.4 title)
P232/L6 (Annex 110C title), P232/L13, P232/L25, P232/L27
P233/L37, P233/L47

Proposed Response *Response Status* **O**

Cl **074** *SC* **74.1** *P* **59** *L* **17** # 108

Geoff Thompson GraCaSI S.A.

Comment Type **TR** *Comment Status* **X**

Comment is more than 255 characters. Enlarging on unsatisfied comment #236 from InitWG
ballot. The insertion of a "definition" for channel is not consistent with either the definition in clause 1.4 or the definition of channel in cabling standards, each of which is quite specific and
different from this use. The reference to a "definition" buried in the text of a clause is not appropriate as that definition is overridden by clause 1.4. The proper term for a MDI to MDI point-to-point connection in 802.3 is "Link Segment". This is NOT equivalent to the term "channel" as used in TR-41 and/or SC25 which does not go MDI to MDI.

SuggestedRemedy

Replace with properly defined term.

Proposed Response *Response Status* **O**

Cl **074** *SC* **74.7.4.8** *P* **68** *L* **13** # 14

Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **X**

The phrase "If the optional EEE deep sleep capability is supported" has been changed to "supports the optional EEE deep sleep capability". I read the new phrasing to say "it can do it" not "it is doing it".

SuggestedRemedy

Change the word "supports" to "is supporting" in the first sentence of each of the last two paragraphs.

Proposed Response *Response Status* **O**

Cl **074** *SC* **74.7.4.8** *P* **68** *L* **13** # 60

Dudek, Mike QLogic

Comment Type **E** *Comment Status* **X**

The order of the paragraphs is unusual with Clause 49 first , then clause 107 and finally clause 82

SuggestedRemedy

Reverse the order of the last two paragraphs.

Proposed Response *Response Status* **O**

Cl **074** *SC* **74.9** *P* **69** *L* **49** # 109

Geoff Thompson GraCaSI S.A.

Comment Type **TR** *Comment Status* **X**

Enlarging on unsatisfied comment #236 from InitWG ballot. Use of "channel" is improper.

SuggestedRemedy

Replace with properly defined or appropriately general term. I suggest “data path”.

Proposed Response *Response Status* **O**

Cl **078** *SC* **78.1.3.3.1** *P* **72** *L* **38** # 28

Marris, Arthur — Cadence Design Syste

Comment Type **E** *Comment Status* **X**

The first and last sentences of the last paragraph of 78.1.3.3.1 do not match the modification made by 802.3bq.

SuggestedRemedy

Change to:
"Except for BASE-T, for PHYs with an operating ...."

and:
"Except for BASE-T PHYs, fast wake support is mandatory ...."

Proposed Response *Response Status* **O**

Cl **078** *SC* **78.1.3.3.1** *P* **72** *L* **41** # 8

Ran, Adee — Intel

Comment Type **TR** *Comment Status* **X**

25G has both deep sleep and fast wake, so comparing deep sleep to "the only mechanism defined for PHYs with an operating speed less than 40 Gb/s" isn't correct anymore.

Also, is the last sentence (FW is mandatory…) correct for BASE-T?

SuggestedRemedy

Change "with an operating speed less than 40 Gb/s" to "with an operating speed of 10 Gb/s or below".

Change "40" to "25" in line 42.

Consider adding "except for BASE-T" or something similar in the last sentence.

Proposed Response *Response Status* **O**

Cl **105** *SC* **105.3.3** *P* **79** *L* **14** # 78

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

Even after the change, this section still seems misleading. I'm not referring to copper PHY options, but to 25GBASE-SR, where "RS-FEC may be used" is not correct - it shall be used.

SuggestedRemedy

Change "The RS-FEC (see Clause 108) may be used by some 25GBASE-R PHYs" to "The RS-FEC (see Clause 108) is used for 25GBASE-SR, and may be used by other 25GBASE-R PHYs".

Proposed Response *Response Status* **O**

Cl **107** *SC* **107.2** *P* **95** *L* **50** # 83

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

"The 25GBASE-R PCS shall support all the functionality of the 10GBASE-R PCS ... the PCS shall support the scrambled idle test pattern generator specified": Can we have better wording that "support", please? The floor supports the table; saying the table supports its components doesn't make sense to me.

SuggestedRemedy

The 25GBASE-R PCS shall have [or implement] all the functionality of the 10GBASE-R PCS ... the PCS shall be have the ability to generate the scrambled idle test pattern as specified"

Proposed Response *Response Status* **O**

Cl **107** *SC* **107.2** *P* **95** *L* **50** # 87

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

Competing definitions of scrambled idle generator, with competing shalls: 107.2 says "the PCS shall support the scrambled idle test pattern generator specified in 82.2.11" while 107.2.3 specifies another mandatory test-pattern generator. We don't need both. Also, as a host with nothing to do will transmit scrambled idle or Remote Fault anyway, depending on the input, I don't believe there really is an additional scrambled idle generator.

SuggestedRemedy

Remove the contradiction or duplication.

Proposed Response *Response Status* **O**

Cl **107** *SC* **107.2** *P* **95** *L* **52** # 17

Slavick, Jeff — Avago Technologies

Comment Type **TR** *Comment Status* **X**

We're changing the values used in Clause 49 for the BER monitor. But we have no shall statement. In the PICS we just check against Clause 49 compliance (PICS). The PICS in 49 points to the state diagram.

SuggestedRemedy

Change "still aplies but with" to "still applies but it shall use"
Add a PICS entry to confirm the BER monitor is running over the longer window.

Proposed Response *Response Status* **O**

Cl **107** *SC* **107.2** *P* **96** *L* **2** # 82

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

Having changed the timer and ber_cnt...

SuggestedRemedy

Also need to say that the definition of hi_ber in 49.2.13.2.2 (Boolean variable which is asserted true when the ber_cnt exceeds 16 indicating a bit error ratio >10-4) is changed.

Proposed Response *Response Status* **O**

Cl **107** *SC* **107.2** *P* **96** *L* **2** # 16

Slavick, Jeff — Avago Technologies

Comment Type **TR** *Comment Status* **X**

While redefinig the BER monitor functon for clause 107 the entire change in the first sentence, then only the timer is redefined. Why not also provide the new ber_cnt definition?

SuggestedRemedy

Change the last sentence from:
So the definition of “125us_timer” in 49.2.13.2.5 is replaced with “Timer that is triggered every 2 ms +1%, -25%”.
To:
So the definitions of “125us_timer” in 49.2.13.2.5 is replaced with “Timer that is triggered every 2 ms +1%, -25%” and "ber_cnt" in 49.2.13.2.4 is replaced with "Count up to a maximum of 97 of the number of invalid sync headers within the current 2ms period".

Proposed Response *Response Status* **O**

Cl **108** *SC* **5.2.4** *P* **106** *L* **15** # 1

Rob, Stone — Broadcom

Comment Type **T** *Comment Status* **X**

CL 108.5.2.4

In 802.3bj, CL 91.5.3.7 (AM mapping and insertion) notes that "The 5-bit pad am_rxmapped<1284:1280> is ignored." For completeness and consistency with .bj, a similar note should also be added to 108.5.2.4 relative to the fact that the single bit pad is ignored also.

SuggestedRemedy

Append to line 27: ",and is ignored by the receiver."

Proposed Response *Response Status* **O**

Cl **108** *SC* **108.5.2.4** *P* **106** *L* **4** # 18

Slavick, Jeff — Avago Technologies

Comment Type **E** *Comment Status* **X**

Don't think the , should be there

[The commenter did not provide a comment type. The editor set the CommentType to "E"]

SuggestedRemedy

Remove the ,

Proposed Response *Response Status* **O**

Cl **108** *SC* **108.5.3.1** *P* **108** *L* **41** # 65

Booth, Brad Microsoft

Comment Type **ER** *Comment Status* **X**

I know this isn't changed text, but I'm hoping you'll consider it.

In reading the description, it states that the status is visible in the state machine variable. But, the variable's value is actually reflected in register bit 1.201.14. It would be good to add that text as it helps connect the dots as to where the value can be observed.

SuggestedRemedy

Add the following to the end of the paragraph:
"as observed in MDIO register bit 1.201.14."

Change the PICS to read:
RF2; Codeword marker lock status; 108.5.3.1; Status reflected in MDIO register bit 1.201.14; M; Yes []

Proposed Response *Response Status* **O**

Cl **108** *SC* **108.5.3.6** *P* **110** *L* **41** # 9

Ran, Adee Intel

Comment Type **E** *Comment Status* **X**

Editor's note has served its purpose.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **O**

Cl **108** *SC* **108.7.3** *P* **121** *L* **6** # 94

Andrewartha, Mike Microsoft

Comment Type **E** *Comment Status* **X**

The first two items, *KR and *CR, refer to the opposite PHY in the Feature column. Item *KR lists feature 25GBASE-CR with Value/Comment "Used to Form a complete 25GBASE-KR PHY". Item *CR lists feature 25GBASE-KR with Value/Comment "Used to Form a complete 25GBASE-CR PHY". These seem backwards. Item and feature should match.

SuggestedRemedy

Change Item *KR Feature column entry to 25GBASE-KR.
Change Item *CR Feature column entry to 25GBASE-CR.

Proposed Response *Response Status* **O**

Cl **108** *SC* **108.7.4.2** *P* **122** *L* **15** # 64

Booth, Brad Microsoft

Comment Type **ER** *Comment Status* **X**

RF3 and RF5 have the same Feature naming, but are performing different functions.

If this comment is accepted, I will consider comment 114 from D2.0 satisfied.

SuggestedRemedy

Change RF5 Feature to read:
Uncorrected error indication

Proposed Response *Response Status* **O**

Cl **109B** *SC* **109B.3.4** *P* **213** *L* **43** # 69

Dawe, Piers Mellanox

Comment Type **T** *Comment Status* **X**

This says "...channel equalization is provided by the module receiver using..." but the module receiver receives an optical signal and outputs a retimed electrical signal; this subclause is about the Tx side of the 25GAUI C2M part of a PMA. Should use correct terminology as in the previous sentence and the subclause title. Should be clear that the alternative also puts the equalization in the module. Also, "uses the setting provided by the host" is vague, doesn't match terminology in 83E.3.4.1.1 ("the reference CTLE setting used to meet eye width and eye height requirements").

SuggestedRemedy

Change "...equalization is provided by the module receiver using either an equalizer which uses the setting provided by the host or an adaptive equalizer which does not use the setting provided by the host." to "...equalization is provided by an equalizer in the module which uses the reference CTLE setting provided by the host, or by an adaptive equalizer in the module which does not use the setting provided by the host."

Proposed Response *Response Status* **O**

Cl **109B** *SC* **109B.3.4** *P* **213** *L* **43** # 68

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

This says "The required channel equalization is provided by..." but there is no particular requirement for channel equalization - the requirement is for correctly determining the bits. The Style Manual says "shall equals is required to".

SuggestedRemedy

Delete "The required".

Proposed Response *Response Status* **O**

Cl **109B** *SC* **109B.5.3** *P* **217** *L* **6** # 70

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

This says "Adaptive receiver" but the module receiver receives an optical signal and outputs a retimed electrical signal; this PICS is about the Tx side of the 25GAUI C2M part of a PMA. Use correct terminology as in nearly all of 93E and 109E. The relevant sentence in 83E.3.4.1.1 is simply "Modules may optionally elect not to use the Recommended_CTLE_value."

SuggestedRemedy

Change:
Item: ADR
Feature: Adaptive receiver
Value/Comment: Module 25GAUI receiver does not use Recommended_CTLE_value
to:
Item: ADE
Feature: Adaptive equalizer
Value/Comment: Module does not use Recommended_CTLE_value

Proposed Response *Response Status* **O**

Cl **110** *SC* **10** *P* **151** *L* **51** # 47

Palkert, Thomas — Molex

Comment Type **TR** *Comment Status* **X**

The use of Base-R FEC supports longer distances than 3m.

SuggestedRemedy

Change 3m to 4m.

Proposed Response *Response Status* **O**

Cl **110** *SC* **10** *P* **151** *L* **53** # 48

Palkert, Thomas — Molex

Comment Type **TR** *Comment Status* **X**

No FEC cable distance should be 3m

SuggestedRemedy

Change 2.75m to 3m

Proposed Response *Response Status* **O**

Cl **110** *SC* **10** *P* **152** *L* **15** # 49

Palkert, Thomas — Molex

Comment Type **TR** *Comment Status* **X**

The use of Base-R FEC supports higher loss cables.

SuggestedRemedy

Change IL for CA-S from 16.48dB to 19.5dB

Proposed Response *Response Status* **O**

Cl **110** *SC* **10** *P* **154** *L* **25** # 50

Palkert, Thomas — Molex

Comment Type **TR** *Comment Status* **X**

COM for CA-S cables should be improved to support higher loss cables

SuggestedRemedy

Change CA-25G-S COM value from 3.0 to 2.4

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.1** *P* **151** *L* **54** # 95

Tracy, Nathan — TE Connectivity

Comment Type **T** *Comment Status* **X**

Data in "tracy_3by_01_0715" shows that 3m is achievable with 15.5dB loss budget. So for CA-25G-N we can target 3m reach.

SuggestedRemedy

change "c) Cable assembly no-FEC (CA-25G-N): Cable assembly that supports links between two PHYs that operate in no-FEC mode, with cable length up to 2.75 m" to "c) Cable assembly no-FEC (CA-25G-N): Cable assembly that supports links between two PHYs that operate in no-FEC mode, with cable length up to 3m"

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.1** *P* **152** *L* **15** # 55

Healey, Adam — Avago Technologies

Comment Type **TR** *Comment Status* **X**

As a consequence of the changes to the CA-25G-N cable type, the CA-25G-S and CA-25G-N cable types are now separated by less than 1 dB of insertion loss. This does not seem sufficiently distinct to warrant a separate classification.

SuggestedRemedy

Remove the CA-25G-S designation or modify its definition to make it more distinct from CA-25G-N.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.7.1** *P* **142** *L* **39** # 104

Geoff Thompson — GraCaSI S.A.

Comment Type **TR** *Comment Status* **X**

Fig 110-2 Enlarging on unsatisfied comment #236 from InitWG ballot. Figure definition of "channel" doesn't align to either cl 1.4 or cabling standards.

SuggestedRemedy

Replace with properly defined or appropriately general term.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.7.1** *P* **143** *L* **12** # 105

Geoff Thompson — GraCaSI S.A.

Comment Type **TR** *Comment Status* **X**

Enlarging on unsatisfied comment #236 from InitWG ballot. Use of "channel" is improper, doesn't match cl. 1.4 def'n or cabling stds def'n

SuggestedRemedy

Replace with properly defined or appropriately general term.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.3** *P* **146** *L* **17** # 35

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

I believe the intent of the fit was to span the DFE range (Nb). However in equation 85-6 in clause 85.8.3.3.5. Np rows are use for X which is the fitting length. That should be N_b+D_p. i.e. 14+2=16

SuggestedRemedy

change line 17ff to:
Transmitter electrical characteristics at TP2 for 25GBASE-CR and 25GBASE-CR-S PHYs shall be the same as those of a single lane of 100GBASE-CR4, as summarized in Table 92–6and detailed in 92.8.3.1through 92.8.3.9 expect N_p=16 and N_w=16.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **145** *L* **35** # 59

Dudek, Mike — QLogic

Comment Type **TR** *Comment Status* **X**

The base-R interference tolerance test is significantly easier to pass than the no-FEC interference tolerance test. We should somewhat tighten this test while still keeping it easier to pass than the no-FEC test. This will enable relaxation of the CA-S cable specifications which will allow thinner cables with better bend radius and lower costs to be used.

SuggestedRemedy

See presentation dudek_3by_01_1015

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **146** *L* **53** # 106

Geoff Thompson GraCaSI S.A.

Comment Type **TR** *Comment Status* **X**

Enlarging on unsatisfied comment #236 from InitWG ballot. Use of "channel" (2 places) is improper, doesn't match cl. 1.4 def'n or cabling stds def'n

SuggestedRemedy

Replace with properly defined or appropriately general term.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **1** # 102

Geoff Thompson GraCaSI S.A.

Comment Type **E** *Comment Status* **X**

Enlarging on unsatisfied comment #236 from InitWG ballot. Use of "channel" (2 places) is improper, doesn't match cl. 1.4 def'n or cabling stds def'n

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **2** # 58

Dudek, Mike QLogic

Comment Type **T** *Comment Status* **X**

It is not really the COM values that are meant here.

SuggestedRemedy

Replace "COM values" with "COM parameter values" (3 places).

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **19** # 71

Dawe, Piers Mellanox

Comment Type **E** *Comment Status* **X**

(In the following, # means the square root "radical" symbol)
Section 6 uses dB/#GHz four times, dB/GHz^1/2 twice and ns^1/2/mm twice. Section 5 has a square root in Eq. 69B-6 and does not use Hz^1/2. Earlier sections use neither, I think. Square root is listed in the table of "Special symbols and operators" in IEEE Std 802.3-2012, which used to be included in each draft.
We can't make things fully consistent by changes in P802.3by, but to make the document usable we should match clauses 92 and 93 exactly.

SuggestedRemedy

Change dB/GHz^1/2 back, in 3 cases, to dB/#GHz to match the base standard. Leave the other three, to match the base standard.
A consolidation across 802.3 can be done in maintenance.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **23** # 4

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

In Table 110-5 (thru 110-7) the two Applied SJ and RJ components are also used in COM calculation per Table 110-10. So it may be appropriate to mention the usage in COM calculation too.

SuggestedRemedy

Replace Applied SJ (p-p) with Applied SJ (p-p) and used in COM calculation.
Replace Applied RJ(RMS) with Applied RJ(RMS) and used in COM calculation.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **33** # 2

Krishnasamy, Kumaran Broadcom

Comment Type **T** *Comment Status* **X**

Footnote "b" below Table 110-5 (thru Table 110-7) referring to Figure 92-10.

[The commenter did not enter comment type. Editor set comment type to "T".]

SuggestedRemedy

Refer to Figure 110-4.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **37** # 45

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

In Table 110-6, if we use the fitted IL coefficients of Test-2, in equation 92-23, it gives 23.19 dB.

SuggestedRemedy

Correction can be made, to be consistent with Table 110-5

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **43** # 57

Healey, Adam Avago Technologies

Comment Type **T** *Comment Status* **X**

Table 111-5 requires the block error ratio (defined as the number of corrected and uncorrected blocks divided by the total number of blocks) to be less than 2.1E-5. However, to meet the frame loss ratio objective, the number of uncorrected blocks divided by the total number of blocks is required to be 4.7E-10 (as calculated in http://www.ieee802.org/3/by/public/adhoc/architecture/ran_020415_25GE_adhoc.pdf). The requirement in Table 111-5 does not seem to be stringent enough since 1 uncorrected block for every 2.1E5 blocks is sufficient to pass the test but does not necessarily demonstrate that the frame loss ratio objective is met.

SuggestedRemedy

Redefine the BASE-R FEC block error ratio to be the number of uncorrected blocks divided by the total number of blocks and set the limit to be 4.7E-10. Make similar changes to Table 111-5.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **147** *L* **46** # 39

Mellitz, Richard Intel Corporation

Comment Type **TR** *Comment Status* **X**

Fitted insertion loss coefficients for test 2 compute to 23.1927db in table 110-6

SuggestedRemedy

use a1, a2, a4 =[3.42 0.4721 0.03055]

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **148** *L* **14** # 54

Healey, Adam Avago Technologies

Comment Type **T** *Comment Status* **X**

Table 110-6 note (a) is potentially misleading. The target value implies that the quantity to be measured is the probability that a block contains errors (corrected or uncorrected) whereas the term "block error ratio" is not clearly defined and could be interpreted as the probability of an uncorrected block (from which the DER_0 and bmax values were derived). The statement that the value is measured using the sum of the "FEC corrected blocks" and "FEC uncorrected blocks" counters may clarify this to some extent but a clear definition of block error ratio would be even more useful.

SuggestedRemedy

Change note (a) to: "The BASE-R FEC block error ratio is the number of blocks that contain errors divided by the total number of blocks received. The number of blocks that contain errors measured using the sum of the FEC corrected blocks counter (see 74.8.4.1) and the FEC uncorrected blocks counter (see 74.8.4.2)." Make a similar change to Table 111-5 note (a).

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2** *P* **148** *L* **27** # 40

Mellitz, Richard Intel Corporation

Comment Type **TR** *Comment Status* **X**

Fitted insertion loss coefficients for test 2 compute to 22.4322db in table 110-7

SuggestedRemedy

use a1, a2, a4 =[3.28 0.4424 0.0301]

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.1** *P* **148** *L* **51** # 74

Dawe, Piers Mellanox

Comment Type **T** *Comment Status* **X**

This says "The cable assembly unused single-ended paths are terminated in 50 O to provide 100 O differential termination." In Fig 110-3, these get connected to the host through the test channel - doesn't the host expect AC coupling, won't 50 O termination force an abnormal bias point on the unused inputs and all the outputs (including the one connected to "Rx termination") even if it doesn't damage the host under test?

SuggestedRemedy

Change "are terminated in 50 O" to "are terminated with AC-coupling to 50 O".

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.1** *P* **149** *L* **1** # 93

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

This is a general comment/concern regarding the COM calculation used in the Interference Tolerance test (Figure 110-3). According to 93A.2, in addition to the signal channel (Stc), a noise channel (Snc) was also involved in the COM calculations where the broadband noise was injected thru the Snc at the end of Stc. However, in 110.8.4.2.1 the broadband noise is added at the Tx and so the Snc is now same as the Stc. Also now the SNRtx is adjusted to control the broadband noise.

This a little confusing, so it would helpful if a brief paragraph can be added to explain how the original test channel COM calculation procedure (93A.2) is modified to be used here for the 25GBASE-CR, with information on any assumptions/approximations used.

SuggestedRemedy

Requesting to include a paragraph from the COM developers/experts, with a brief explanation on how the fundamental test channel calibration COM calculation process was modified to be used in here.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.2** *P* **149** *L* **23** # 67

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

If a reference to test points (TP1-TP4) and to Table 110-10 are added in a), where it says "A cable assembly that meets the cable assembly COM....", then it will reduce a lot of confusion between the cable assembly alone COM calculation and the test channel COM calculation with exeptions in line #49.

SuggestedRemedy

a) A cable assembly (measured between TP1 and TP4) that meets the cable assembly COM specified for the test being performed per Table 110-10.

OR

a) A cable assembly that meets the cable assembly COM specified for the test being performed (see 110.10).

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.2** *P* **149** *L* **45** # 46

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

By default, as spec tables, all the parameetrs in Tables 110-5 thru 110-7 are expected to be met as close as practically possible. So why the special caution to meet specifically the fitted IL coeffients and the fitting parameters ?

Alraedy in those tables the fitted IL parameter is mentioned to be approximate.

SuggestedRemedy

Possibly remove the sentence in line 45 starting with "It is recommended that the deviation..." ?

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.2** *P* **150** *L* **7** # 32

Omer Sella Mellanox Technologie

Comment Type **T** *Comment Status* **X**

The way the text appears at the moment, it suggests the following flow:
Step 1: Measure SNR at the pattern generator output.
Step 2: Calculate COM using the newly measured SNR_TX.
Step 3: If desired COM achieved, we are finished. Else go to Step 4.
Step 4: If desired COM is not achieved, inject more noise and go to step 1.

This means an iterative procedure that includes a ping-pong game between measuring real SNR and calculating COM.

SuggestedRemedy

Clearly the above algorithm is equivalent to:

Step 1: Measure COM.
Step 2: Adjust SNR_TX parameter until the desired COM is achieved.
Step 3: Set the noise injection to produce the desired SNR at point PGC of figure 110-3.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **149** *L* **29** # 76

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

There's only one test channel to be calibrated for a serial PHY's receiver. While we are here, not sure what "characterized at" means. What character? This is simpler than bj, just one s4p measurement. Are we not allowed to use and de-embed the VNA cables?

SuggestedRemedy

Change
The scattering parameters of the test channels are characterized at the test references...
to
The scattering parameters of the test channel are measured [or determined] with respect to the test references...

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **149** *L* **43** # 66

Krishnasamy, Kumaran — Broadcom

Comment Type **E** *Comment Status* **X**

The sentence where it says "The fitted insertion loss coefficients of the cable assembly between the reference points, derived using the fitting procedure in 92.10.2, shall meet the values in Table 110–5,...." should be corrected to refer to "test channel" instead of "cable assebmbly".

This is because Tables 110-5 thru 110-7 refer to the test channel measured between the two test reference points in Figure 110-4.

SuggestedRemedy

Change the above sentence to "The fitted insertion loss coefficients of the test channel between the reference points, derived using the fitting procedure in 92.10.2, shall meet the values in Table 110–5, Table 110–6, or Table 110–7, as appropriate for the test being performed.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **149** *L* **51** # 3

Krishnasamy, Kumaran — Broadcom

Comment Type **E** *Comment Status* **X**

The outer "cascade" operator is redundant in the eqaution SCHSp = cascade(cascade(S(ctsp),S(hosp))).

SuggestedRemedy

Replace with SCHSp = cascade(S(ctsp),S(hosp)).

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **149** *L* **51** # 31

Omer Sella — Mellanox Technologie

Comment Type **E** *Comment Status* **X**

It appears that there is a copy-paste issue here: cascade(x,y) is a function of two variables. However, it says in line 51: cascade(cascade(S^(CTSP),S^(HOSP))) so the outer cascade is an erroneous syntax here.

SuggestedRemedy

Remove the outer cascade and brackets.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **149** *L* **51** # 30

Omer Sella Mellanox Technologie

Comment Type **E** *Comment Status* **X**

Although figure 110-4 shows that the connecting path (AKA SMA cables) from the pattern generator to the MCB should be included in the COM calculation, I believe it is clearer if this is
placed in the text as well.
My main fear is that people would miss that.

SuggestedRemedy

change "where S(CTSP) is the measured channel between the test references in Figure 110–4" to "where S(CTSP) is the measured channel between the test references in Figure 110–4 including the connecting path between the test reference and the cable assembly test fixture."

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **3** # 5

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

In step c), the measurebale parameter is SNDR being consistent with the Transmitter parameters per Table 92-6.

SuggestedRemedy

Replace the SNRtx in step c) with SNDR.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **3** # 98

Krishnasamy, Kumaran Broadcom

Comment Type **T** *Comment Status* **X**

When we read this exception c) we are in the COM calculation process for the test channel. So exception c) should simply instruct to find the SNRtx parameter through the COM calculation, to achieve the required COM value by the test being performed.

Once this value is found then it should be set in the pattern genarator section in 110.8.4.2.4

[The commenter did not indicate a comment type. The editor set the comment type to "T".]

SuggestedRemedy

c) The COM parameter SNRtx is modified to achieve the required COM values in Table 110–5, Table 110–6, or Table 110–7, as appropriate for the test being performed.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **3** # 75

Dawe, Piers Mellanox

Comment Type **T** *Comment Status* **X**

This says "SNR_TX of the pattern generator after noise injection (see 110.8.4.2.4) is measured" but there is no indication of what SNR_TX is (apart from a COM parameter, which is a table entry not a measured thing), or how to measure it in this subclause or in the referenced 110.8.4.2.4.

SuggestedRemedy

Are we meant to set SNDR to the SNR_TX value that gives the right COM?

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **6** # 43

Krishnasamy, Kumaran Broadcom

Comment Type **E** *Comment Status* **X**

Exception d) in 110.8.4.2.3, where it says "If the pattern generator presents a high-quality termination...", is NOT an exception because if we follow the text in 110.8.4 Receiver characteristics, this step is same as in 92.8.4.4.3.

SuggestedRemedy

This exception d) can be removed from 110.8.4.2.3.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **9** # 36

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

Equation 92-22 is not causal and can increase COM by approximately 1/2 dB for slow rise-times. This erroneously increases the amount of required noise for RITT.

SuggestedRemedy

add: use Bessel-Thomson filter implemented with following equation:
H_t=105./(f.^4*(k*T_r)^4 - f.^3*(k*T_r)^3*10i - 45*f.^2*(k*T_r)^2 + f*(k*T_r)*105i + 105);
where k=9
note: T_r is in ns and f is in GHz

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **10** # 73

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

This says: "If the pattern generator presents a high-quality termination, e.g., it is a piece of test equipment... transition time (see 86A.5.3.3) of the signal as measured at TP0a" but there is no definition of or reference to TP0a. I found 93.8.1.1, Transmitter test fixture, but that's for a transmitter on a board, and one would expect that test equipment would have coax connectors.

SuggestedRemedy

If you mean TP0a, provide a reference to 93.8.1.1 and explain how it applies to test equipment. Are we to use PGC for "Package-to-board interface"?
Also add a reference for the TP0a in 111.7.4.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.3** *P* **151** *L* **10** # 33

Omer Sella — Mellanox Technologie

Comment Type **T** *Comment Status* **X**

The way Tr is measured should be stated more clearly in my mind.
For instance – it is unclear if a mated HCB-MCB should be used, or the Tr is measure by directly connecting the pattern generator to a measurement device. This may cause variance in the way people perform the test.
In addition – the noise injection device may be embedded in the pattern generator, OR it could be added to a pattern generator that does not include such a device (namely a noise box is used).
I think we should provide the people using test equipment a clearer mapping of where, what and how things are measured – to my understanding TP points are not defined for test equipment.

SuggestedRemedy

State clearly (and not just by saying TP0a) that the pattern generator is connected directly to a measuring device OR: state clearly that a mated HCB-MCB are to be used.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.4** *P* **150** *L* **3** # 51

Healey, Adam — Avago Technologies

Comment Type **T** *Comment Status* **X**

Item c) states that SNR_TX of the pattern generator, after noise injection, is measured and used in the calculation of COM. There is no defined procedure for the measurement of SNR_TX.

SuggestedRemedy

State that the SNDR of the pattern generator, after noise injection, is measured and used as the SNR_TX value for the calculation of COM. Add a cross-reference to the definition of the SNDR measurement.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.8.4.2.4** *P* **150** *L* **9** # 52

Healey, Adam — Avago Technologies

Comment Type **T** *Comment Status* **X**

Item d) states that the 20% to 80% transition time of the signal is measured at TP0a. The position of TP0a in the interference tolerance test setup is not indicated.

SuggestedRemedy

Change the reference point from TP0a to the "pattern generator connection (PGC)".

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.10** *P* **151** *L* **32** # 103

Geoff Thompson — GraCaSI S.A.

Comment Type **ER** *Comment Status* **X**

Enlarging on unsatisfied comment #236 from InitWG ballot. Use of the term “cable assembly”
should be replaced with the defined term “Link Segment” here and elsewhere throughout the
draft.

SuggestedRemedy

Use the 802.3 term “Link Segment” where the definition fits (many places). The term is not used
at all in you draft.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.10** *P* **151** *L* **54** # 99

Shanbhag, Megha — TE Connectivity

Comment Type **T** *Comment Status* **X**

Data in "tracy_3by_01_0715" shows that 3m is achievable with 15.5dB loss budget. So for CA-25G-N we can target 3m reach.

SuggestedRemedy

change "c) Cable assembly no-FEC (CA-25G-N): Cable assembly that supports links between two PHYs that operate in no-FEC mode, with cable length up to 2.75 m" to "c) Cable assembly no-FEC (CA-25G-N): Cable assembly that supports links between two PHYs that operate in no-FEC mode, with cable length up to 3m"

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.10.7** *P* **154** *L* **7** # 90

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

Names of parameters in Table 110-10, COM parameter values for CA-25G-N CA-25G-S and CA-25G-L, and Table 111-8, COM parameter values for 25GBASE-KR 25GBASE-KR-S channels, should exactly match the master, 93A.1 and particularly Table 93A-1, COM parameters. They don't have to be descriptive.

SuggestedRemedy

Change "Alien far-end aggressor" to "Far-end aggressor" in each table.

Proposed Response *Response Status* **O**

Cl **110** *SC* **110.10.7** *P* **154** *L* **26** # 77

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

Here we have note a under the table "The parameters for CA-25G-L are the same as those for 100GBASE-CR4 (Table 93–8), except for Afe." which is good, and in 111.9.1 we have regular text before the equivalent table "These characteristics are the same as those of a single lane of 100GBASE-KR4, as defined in 93.9.1 through 93.9.4.", which is also good - but the inconsistency is bad.

SuggestedRemedy

Do them both the same way.

Proposed Response *Response Status* **O**

Cl **110A** *SC* **110A.7** *P* **226** *L* **43** # 41

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

COM is normative and reccomended is used in the text.

SuggestedRemedy

change:
The Channel Operating Margin (COM) for the channel between TP0 and TP5, computed using the procedure in 93A.1and the parameters in Table 110–10, is recommended to be greater than or equal to the Channel Operating Margin (min.) value in Table 110–10 for the cable assembly type being used.
to:
The Channel Operating Margin (COM) for the channel between TP0 and TP5, computed using the procedure in 93A.1and the parameters in Table 110–10, shall be be greater than or equal to the Channel Operating Margin (min.) value in Table 110–10 for the cable assembly type being used.

Proposed Response *Response Status* **O**

Cl **110B** *SC* **110B.1.3.6** *P* **228** *L* **50** # 80

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

Equation (110B-1) through Equation (110B-2)

SuggestedRemedy

Equation (110B-1) and Equation (110B-2)

Proposed Response *Response Status* **O**

Cl **110B** *SC* **110B.1.3.6** *P* **228** *L* **50** # 61

Dudek, Mike — QLogic

Comment Type **E** *Comment Status* **X**

We are calling it "integrated near-end crosstalk everywhere else.

SuggestedRemedy

Change "integrated crosstalk" to "integrated near-end crosstalk" on line 50.

Proposed Response *Response Status* **O**

Cl **110C** *SC* **110C.1** *P* **232** *L* **26** # 100

Shanbhag, Megha — TE Connectivity

Comment Type **T** *Comment Status* **X**

Data in "tracy_3by_01_0715" has shown that 3m is achievable with 15.5dB loss budget. So for CA-25G-N we can target 3m reach.

SuggestedRemedy

change "The CA-25G-N specifications enable a shorter length of 2.75 m with lower loss..." to "The CA-25G-N specifications enable a shorter length of 3 m with lower loss"

Proposed Response *Response Status* **O**

Cl **110C** *SC* **110C.1** *P* **232** *L* **26** # 96

Tracy, Nathan — TE Connectivity

Comment Type **T** *Comment Status* **X**

Data in "tracy_3by_01_0715" has shown that 3m is achievable with 15.5dB loss budget. So for CA-25G-N we can target 3m reach.

SuggestedRemedy

change "The CA-25G-N specifications enable a shorter length of 2.75 m with lower loss..." to "The CA-25G-N specifications enable a shorter length of 3 m with lower loss"

Proposed Response *Response Status* **O**

Cl **110C** *SC* **110C.1** *P* **233** *L* **1** # 97

Tracy, Nathan — TE Connectivity

Comment Type **T** *Comment Status* **X**

Data in "tracy_3by_01_0715" shows that 3m is achievable with 15.5dB loss budget. So for CA-25G-N we can target 3m reach.

SuggestedRemedy

Update Table 110C.1 with length for CA-25G-N changed from 2.75m to 3m for all cable assembly form factors listed.

Proposed Response *Response Status* **O**

Cl **110C** *SC* **110C.1** *P* **233** *L* **1** # 101

Shanbhag, Megha — TE Connectivity

Comment Type **T** *Comment Status* **X**

Data in "tracy_3by_01_0715" shows that 3m is achievable with 15.5dB loss budget. So for CA-25G-N we can target 3m reach.

SuggestedRemedy

Update Table 110C.1 with length for CA-25G-N changed from 2.75m to 3m for all cable assembly form factors listed.

Proposed Response *Response Status* **O**

Cl **110C** *SC* **110C-1** *P* **233** *L* **5** # 42

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

Table 110 C-1 does not suggest what gage was used for length comparisons

SuggestedRemedy

change Length^a to Lenth^a,c table 110 C-1
add footnote c: Cables with 26 AGW are used for length comparisons.

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.1** *P* **167** *L* **40** # 92

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

"A 25GBASE-KR PHY supports operation over a channel meeting the requirements of 111.9.1 or 111.9.2. A 25GBASE-KR-S PHY only supports operation over a channel meeting the requirements of 111.9.2."
Only supports as opposed to what? Actually operating? Reporting? What do you mean, "supports operation"?

SuggestedRemedy

Change to:
A 25GBASE-KR PHY operates over a channel meeting the requirements of 111.9.1 or 111.9.2. A 25GBASE-KR-S PHY operates over a channel meeting the requirements of 111.9.2.

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.8.2** *P* **174** *L* **5** # 34

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

I believe the intent of the fit was to span the DFE range (Nb). However in equation 85-6 in clause 85.8.3.3.5 Np rows are use for X which is the fitting length. That should be N_b+D_p. i.e. 14+2=16

SuggestedRemedy

change line 3ff to :
Transmitter electrical characteristics at TP0a for 25GBASE-KR and 25GBASE-KR-S shall be the same as those of a single lane of 100GBASE-KR4, as summarized in Table 93-4and detailed in 93.8.1.1 through 93.8.1.7 expect N_p=16 and N_w=16.

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.8.3.1** *P* **174** *L* **15** # 37

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

Equation (93A–46) is not causal which is used in 93.8.2.3 which is referred to in 111.8.3.1. It can increase COM by approximately 1/2 dB for slow rise-times. This erroneously increases the amount of required noise for RITT.

SuggestedRemedy

add: use Bessel-Thomson filter implemented with following equation:
H_t=105./(f.^4*(k*T_r)^4 - f.^3*(k*T_r)^3*10i - 45*f.^2*(k*T_r)^2 + f*(k*T_r)*105i + 105);
where k=9
note: T_r is in ns and f is in GHz

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.8.3.1** *P* **174** *L* **31** # 38

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **X**

Test 1 table 111-4 low loss does not seem correct (30dB)

SuggestedRemedy

use Low loss Insertion loss and fit coefficients from table 111-5 or 111-6

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.9.1** *P* **176** *L* **33** # 81

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

Two 25GBASE-KR PHY channel? What's a one-PHY channel? Doesn't seem grammatical, we would not do this for any other PHY as far as I know. Also, what's a PHY channel?

SuggestedRemedy

Change to: 25GBASE-KR channel
Actually, this can be sidestepped and simplified by removing the headings 111.9.1 and 111.9.2, and removing the first of two identical sentences "COM is calculated for two test cases...".

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.9.1** *P* **176** *L* **33** # 53

Healey, Adam — Avago Technologies

Comment Type **E** *Comment Status* **X**

The subclause heading seems awkward. Suggest changing it from "Two 25GBASE-KR PHY channel" to "25GBASE-KR PHY channel". The fact that this channel is only interoperable bewteen two 25GBASE-KR PHYs is explained in the body of the subclause.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.9.1** *P* **176** *L* **34** # 91

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

links that comprise two 25GBASE-KR PHYs? Links connect PHYs, not comprise them: "1.4.248 link: The transmission path between any two interfaces of generic cabling. (From ISO/IEC 11801.)" Also, the table says COM parameter values not channel characteristics, and 110.10.7 has "COM parameter values ... are provided in Table 110–10".

SuggestedRemedy

Change "Channel characteristics for links that comprise two 25GBASE-KR PHYs" to "COM parameter values for a channel that connects two 25GBASE-KR PHYs".
In 111.9.2, change "Channel characteristics for links that comprise one or two 25GBASE-KR-S PHYs are provided in Table 111–8" to "COM parameter values for a channel that connects a 25GBASE-KR-S PHY to a 25GBASE-KR-S or 25GBASE-KR PHY are provided in Table 111–8".

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.9.2** *P* **177** *L* **4** # 56

Healey, Adam — Avago Technologies

Comment Type **TR** *Comment Status* **X**

The receiver interference tolerance requirements defined in 111.8.3.1 and jitter tolerance requirements defined in 111.8.3.2 include tests for a "no FEC" mode of operation. However, there are no channel requirements for that mode of operation (Table 111-8 only includes RS-FEC and BASE-R FEC modes).

SuggestedRemedy

Remove "no FEC" tests from 111.8.3.1 and 111.8.3.2 or add a "no FEC" column to Table 111-8. If a column is added, it should include the relevant requirements of the corresponding interference tolerance test e.g., DER0=1E-12, bmax=0.35.

Proposed Response *Response Status* **O**

Cl **111** *SC* **111.9.2** *P* **177** *L* **42** # 89

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

Table 110-10, COM parameter values for 25GBASE-CR and 25GBASE-CR-S has alien far-end aggressor Afe = 0.6 V. The committee asserted that 0.6 was correct: "not the same as the far-end aggressor voltage used in clause 92, since far-end aggressors in some form factors are not assumed to be on the same device as the "victim" transmitter (and are therefore marked as "alien" FEXT). The alien transmitter can use the maximum voltage."
This Table 111-8 for 25GBASE-KR and 25GBASE-KR-S has alien far-end aggressor Afe = 0.4 V.
Should the same logic apply to 25GBASE-KR and 25GBASE-KR-S? So far, I don't see why not.

SuggestedRemedy

Change Afe from 0.4 V to 0.6 V here. Modify 111.9.1, presently "These characteristics are the same as those of a single lane of 100GBASE-KR4, as defined in 93.9.1 through 93.9.4."

Proposed Response *Response Status* **O**

Cl **112** *SC* *P* *L* # 107

Geoff Thompson — GraCaSI S.A.

Comment Type **TR** *Comment Status* **X**

I reject the logic of your response: "The nomenclature and text is consistent with equivalent sections in many other clauses including 95, 88, 87, 86, and 52.
Changing a single clause as suggested might be confusing." Your use is NOT consistent with
cabling standards which have a VERY specific definition for channel which you do not use. Further, changing to be aligned with the clause 1 definitions rather than some vague use buried
in a number of other clauses will be less confusing, rather than more.

[The comment set clause to "Init WG Ballot #237". The editor changed clause to 112.]

SuggestedRemedy

Use terminology as defined in clause 1.4

Proposed Response *Response Status* **O**

Cl **112** *SC* **112.7.1** *P* **192** *L* **28** # 86

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **X**

In 802.3bx, pattern 5 is defined in 82.2.11, although in 802.3-2012 it's in 82.2.10. In 82.2.11 it's not called "pattern 5" - the connection is made in Table 95-9, but we could be kinder to the reader.

SuggestedRemedy

Change "pattern 5 defined in 82.2.10" to "pattern 5, the scrambled idle test pattern defined in 82.2.11,".
To reduce the version control issue, on p21, state precisely what is used for "the existing base standard and its amendments". With so many amendments in progress, this may be a table of the ones that this project has taken into consideration in the TO BE REMOVED PRIOR TO FINAL PUBLICATION box, with version numbers. It would be helpful to include the ones that we think do not affect this document, and mark them as such.

Proposed Response *Response Status* **O**

Cl **112** *SC* **112.7.1** *P* **192** *L* **33** # 72

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **X**

Last time, the draft was changed to use 25G-specific test patterns instead of 100G test patterns. Particularly for 100GBASE-SR4 modules that have dual use as 4 x 25GBASE-SR, it would be more convenient to test them just once. As we have Clause 112 open and not Clause 95, we should allow the use of 100GBASE-SR4 patterns for 25GBASE-SR qualification.

SuggestedRemedy

Add a new paragraph: "As an alternative, the test patterns used for 100GBASE-SR4 may be used, with appropriate attention to multi-lane testing considerations."
In 109B.3.2.1.1 and 109B.3.2.1.2, change "or a valid 25GBASE-R signal" to "or a valid 25GBASE-R or 100GBASE-R signal".

Proposed Response *Response Status* **O**